

Guns

M A G A Z I N E

MAY 1955 50c

THE LEGEND OF
**DAVY
CROCKETT**



The cover features two detailed illustrations of flintlock pistols. One is a long-barreled, curved pistol with an ornate, engraved frame. The other is a shorter, more compact pistol with a similar decorative frame. In the background, there is a sketch of Davy Crockett in his iconic attire, including a coon-skin hat, a plaid jacket, and a plaid kilt. The text 'THE SCOTCH PISTOL MYSTERY' is enclosed in a green rectangular box with a black border.

**THE
SCOTCH PISTOL
MYSTERY**

A SIX SHOOTER FOR TV COWBOYS



FIGHTING MEN OF THE WEST . . . BAT MASTERSON

Sweet as a banker, he looked, but his six-gun was never far away. As sheriff of Ford County, Kansas, avenger of his brother's murder, Bat Masterson was friend to the Earps, Holliday, and the other gunmen of Dodge. He led them to Colorado to help the Santa Fe capture right-of-way through the Royal Gorge against the Denver & Rio Grande R.R. But the big fight at Canyon City never started: they were "bought off" by the D & RG boss . . . and Bat wound up as a featured attraction with Buffalo Bill's Wild West show.

MAY, 1955

Volume One

No. 5-5

Guns

MAGAZINE

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COVER

All-metal pistols by gunmakers of Scotland are among the most colorful of all European guns. Silver and gold inlay contrast with the deep chiselling of the steel. Of value to collectors, one pair has recently tempted a thief . . . see page 14.

THE GREAT RIFLE CONTROVERSY

WHILE BELGIAN FN SEEMS SHOO-IN FOR SELECTION AS NATO RIFLE, U.S. ARMS MAKERS SEE VITAL FLAW IN GUN DESIGNATED AS T-48: IT IS VIRTUALLY IDENTICAL WITH WEAPON ABANDONED BY RUSSIANS

By WILLIAM C. L. THOMPSON



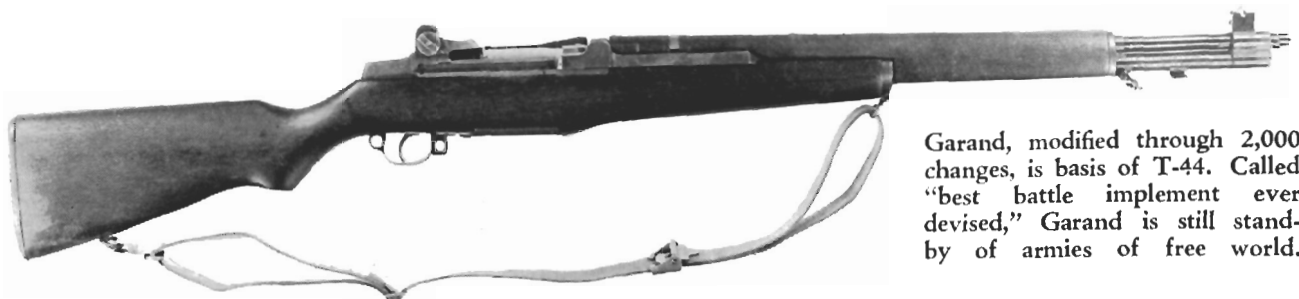
Much debated Belgian FN assault rifle, designated T-48 in U.S. Army tests, is virtually identical to discarded Russian Tokarev rifle, critics assert.



Late version of Springfield T-44 is in competition with T-48 for adoption by NATO. U.S. gun has stock-bushing reinforcements and modified gas cylinder front end.



Full automatic T-44 of 1949 preceded current model, was unsatisfactory in gas functioning. It has straight magazine and adjustable gas cylinder front plug.



Garand, modified through 2,000 changes, is basis of T-44. Called "best battle implement ever devised," Garand is still standby of armies of free world.



Newly-issued Belgian FN is tested by British soldier in camouflage. Using .30 NATO cartridge, Tommy uses optical sight favored by English. Carrying handle is folded down. FN is now produced in England.

VEILED by the velvet curtain of diplomacy and the tight-lipped secrecy of Army security, one of the hottest battles in the history of the U.S. War Department is currently being waged in the Pentagon over selection of a service rifle for our army. Arrayed in full oratorical as well as political battle dress are behind-the-scenes proponents of Uncle Sam's industrial know-how versus the champions of Belgium's highly-touted FN.

There are those who insist that this ten-year scrap waged with much string-pulling but a minimum of shooting has been resolved. The Belgian FN, already adopted by the British, is a shoo-in for selection as the NATO rifle as well as the service arm of U.S. ordnance, these insiders assert. But men high in private industry—the production genius of U.S. arms makers—have not given up their fight to debunk the FN. And they have an ace in the hole. Stated simply, it is this:

The FN is essentially identical to a Russian rifle abandoned by the Soviets during World War II as unreliable!

The Belgian gun the U.S. is considering for adoption is of the same pattern as the Russian Tokarev, a gas-operated shoulder rifle of tipping bolt design, resembling in some principles the old Savage Model 99 lever rifle so familiar to American sportsmen. And to shoot in that rifle, which the Army test officers presently designated the "T-48," we have adopted a cartridge which is remarkably similar to the .300 Savage, old, reliable deer killer!

The British adopted the T-48 as their standard weapon after considerable publicity and a few hundreds of thousands of pounds spent on an earlier rifle, the British-

designed EM-2. Prime Minister Churchill even flew to Washington several years ago to confer with President Truman on adopting the EM-2 as the NATO rifle, since there was urgent need for a standard weapon among powers in the North Atlantic Treaty Organization. The proposal was vetoed. There was always an undercurrent of opposition to a British design from domestic sources.

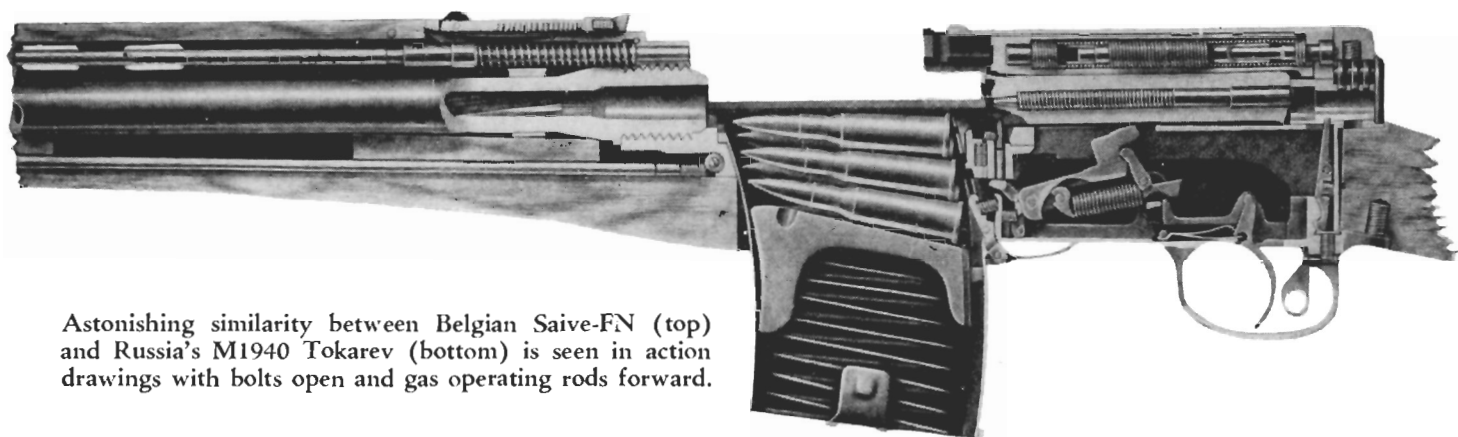
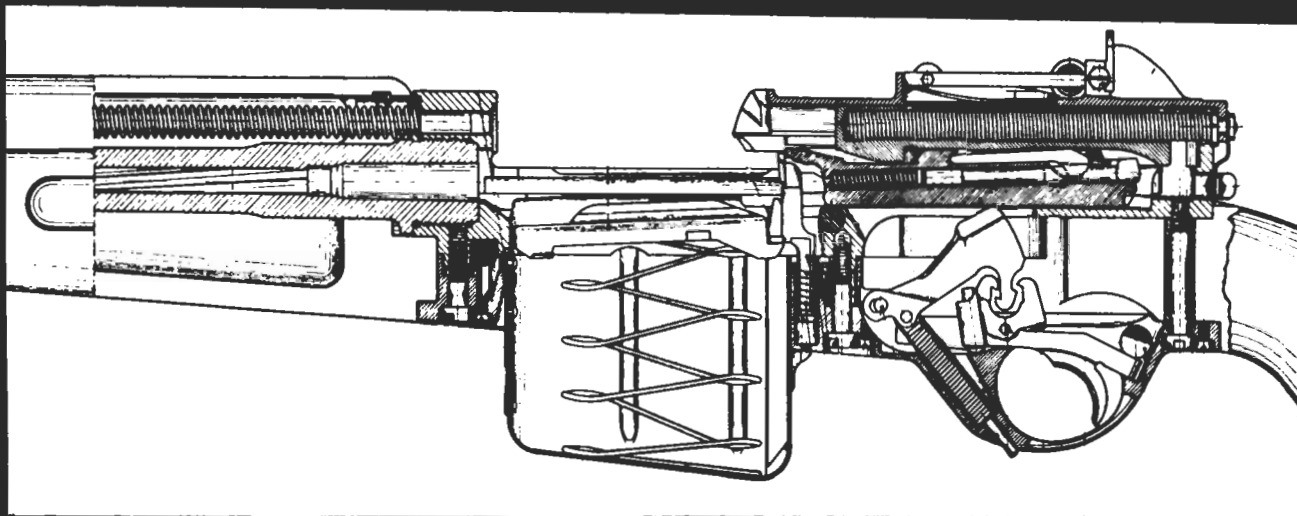
With the British entry shelved, brief publicity was given to our T-44, or "modified Garand," and the novel T-47. This latter pattern had a surge of popularity, and then disappeared, leaving the T-44 as the sole American entry in the world-wide NATO rifle competition.

Soon the contest was narrowed down to T-44 versus T-48. And so it stands today, although informed opinion holds that the Belgian gun has already been selected but announcement held up.

What are the facts about the much-debated T-48?

The story begins 25 years ago in Belgium. There in Herstal-lez-Liege engineer Dieudonne Saive of the Fabrique Nationale d'Armes de Guerre developed a military auto-loading rifle.

The Saive-FN was a gas-operated gun with a light bolt which was carried back and forth, and was tilted to lock and unlock, by a bolt carrier which engaged slide grooves in the receiver. The rear end of the bolt in locking dropped against a shoulder in the receiver which was at right angles to the bolt's fore-and-aft motion. The bolt carrier was driven rearward to effect unlocking, extracting and ejecting the fired case, by a gas-actuated piston above the barrel. The carrier was moved forward in counter-recoil by



Astonishing similarity between Belgian Saive-FN (top) and Russia's M1940 Tokarev (bottom) is seen in action drawings with bolts open and gas operating rods forward.

springs, which caused the loading from a clip magazine, and locking of the bolt.

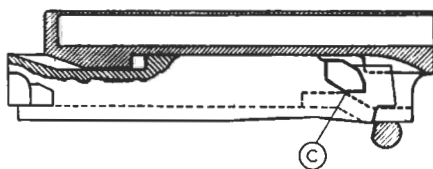
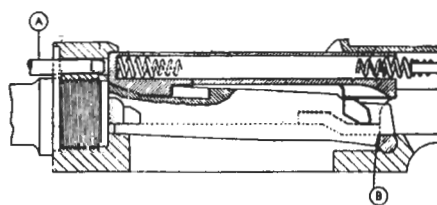
An essential feature of the Saive design was, and still is, the gas piston rod which did not accompany the bolt carrier for the full opening stroke. Instead, it returned forward after giving the car-

rier an initial kick, thus leaving the top of the receiver unobstructed when the bolt carrier was retracted in "open" position.

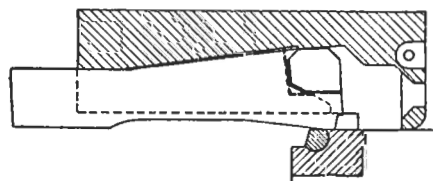
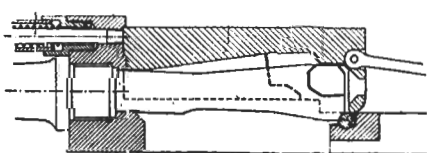
With one of the world's largest arms factories, the Belgians placed the gun on the market but there was no rush of

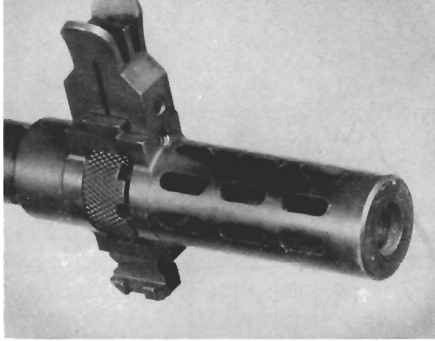
buyers. However, in 1938 the basic Saive design was "borrowed" by the Russians and produced as the Tokarev M1938. The only significant alteration was in the gas cylinder. The Russians replaced the more conventional Saive pattern with their nozzle-and-cup design. This again was slightly modified as the Tokarev M1940. Before FN could exploit this admirable testimonial to the virtues of its rifle, Belgium was overrun by the Germans.

How did the Saive-Tokarev turn out? In decent weather it was good—so good that Germany is reported to have issued captured Tokarevs to their own troops. The action of a Tokarev in good condition is pretty snappy, but would prove a distinct hazard in converting ordinary men into accurate-shooting soldiers. The muzzle brake fitted to regular Tokarevs tends to reduce recoil by deflecting some of the muzzle-gases rearward. This produces an ear-splitting muzzle-blast and results in a rifle definitely objectionable to fire. Aside from personal



Saive-FN gas rod (A) pokes bolt carrier to rear; this picks up bolt at back end, lifts locking edge (B) up through action of bolt cam (C). Major change in T-48 (below) is that bolt action is not drilled for spring. T-48 action drawings are from latest English-language Belgian manual.





Muzzle brake is necessary for T-44 light rifle for controlling aim. Muzzle brake is not used on T-48.

discomfort, the M1938's and M1940's served and shot in ordinary weather.

But winter brought on a different story. . . .

Fighting in cold so extreme that rubber snapped like glass, the Russian troops found their lovely automatics did not run so well. Frost-proof oils and incantations in the dark of the moon alike proved unavailing; the Tokarevs were retired in favor of slam-bang machine pistols and the ancient bolt-action Nagant rifles.

Tokarev rifles dated after 1942 are very rare. This might be explained by the fact that after the Stalingrad counter-offensive, the Russians stopped losing so many rifles on the battlefield. But it is no explanation for their almost complete absence from battlefield films and photos. There is no indication that these rifles are now issued to front line troops or have been used since 1942 as a major weapon in combat.

This disappearance from newsreels and publicity stills is pointed up by the re-appearance of a few Tokarevs in Red Square May Day parades, and in cadet and training photos for "show," not service. Today there is Red Army emphasis on the submachine gun, which



Typical use for obsolete Tokarev Rifle is in naval school cadet parades. Russia has never disclosed why weapon was discarded by Red Army.



In inspection of FN-armed Tommies, Prince Philip jokingly poses for gag firing squad photo. FN is shorter, heavier than Lee-Enfield.

Dropped British EM-2 is handled by British soldier. New FN rifles give Tommies more firepower in battle.

American T-44 is fired full auto with one hand by GI in standing position. Lightweight T-44 is easily handled.





Machine-rifle shape of Britain's new FN dictates changes in carrying routine while on parade.



Walther assault rifle of German 1944 designs lead to new tactical concept and adoption of FN and T-44.

runs best with sloppy fitting and is no more than a bullet squirter. The venerable Mosin Nagant of 1891 is the basis of the carbine of 1944. Use of sniper's versions of the Nagant in world championship shooting matches indicates it is still a favored weapon. Bolt-action rifles just off the assembly line, now found in the hands of Russian troops from Vienna to Korea, argue too plainly that something drastically wrong was discovered with the Saive-Tokarev.

While the Russians were experimenting with their version of the FN, our own T-44 was going through a number of modifications, which began in 1936 when ordnance research of 17 years culminated in the adoption of the Garand. Direct ancestor of the T-44 was the M1 rifle altered to full-automatic fire. One hundred thousand of these were on order when the Japanese surrendered. Mass firepower from these guns would have equaled the heavier Browning automatic rifles, that were useful in spray gun fighting in the Pacific jungles.

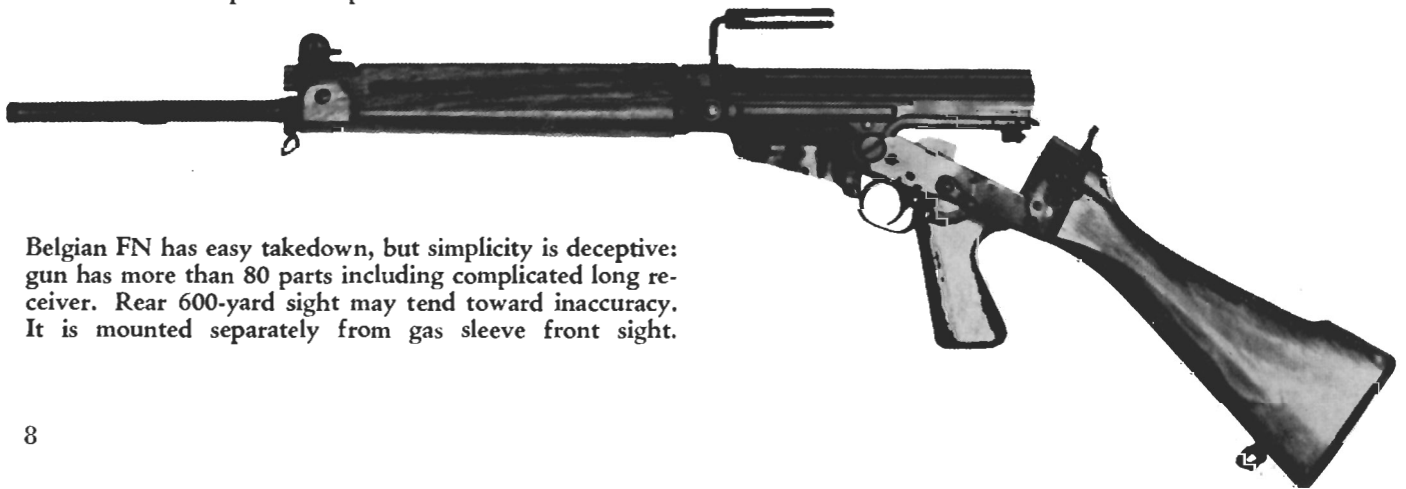
A 20-shot detachable box magazine in these M1's avoided an objection to its original "en bloc" cartridge clip form. The full-automatic M1 would permit loading the magazine from common Springfield-type five-round strip clips, or carrying extra loaded magazines in combat.

Weight has been paramount in new designs. The fat-bellied M1 weighed over 9 pounds any way you lugged it. Reduction of the over-all cartridge length, which has been done in the NATO .30 round, would permit a shortened receiver and thus aid in reducing weight.

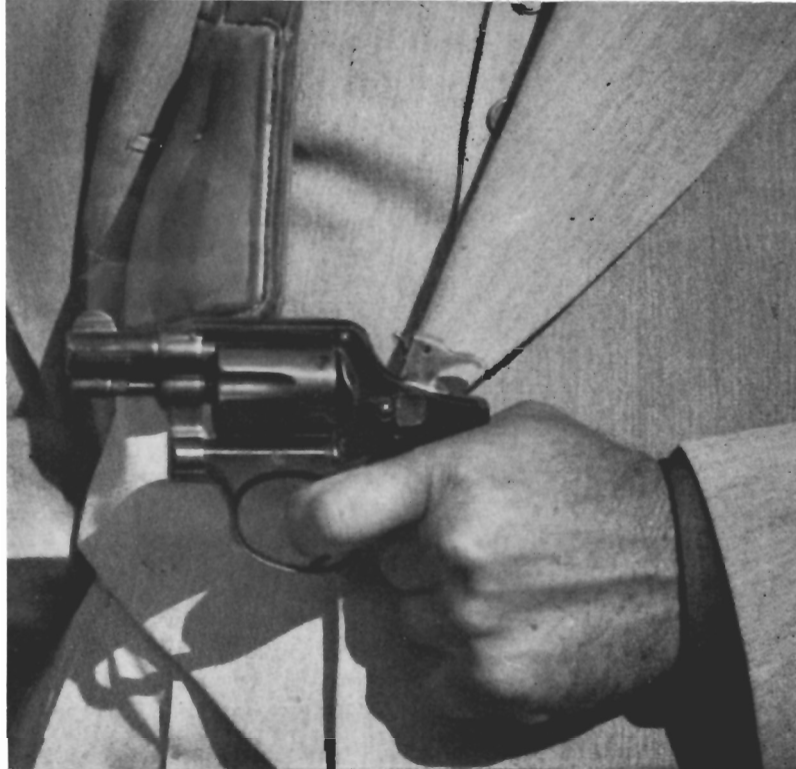
Full-automatic fire, with ease of reloading, and the ability to reload during a possible lull in fighting without emptying the gun first, is desirable. Controlability in full-auto firing, as well as inherent accuracy through positive cartridge support by the locked-up bolt, are important, too. But reliability in functioning is certainly the most critical single factor—if it won't shoot, it just ain't no good.

The T-44 has at least the heritage of reliability in its design, but in the changeover from the Garand mechanical problems have resulted. The gas cylinder, closer to the receiver, has meant higher pressures in opening the bolt. Changes in experimental models of the T-44 have finally resulted in what is probably an expanding gas system. This softens the action and prevents excessive battering of the bolt parts.

There have also been problems for the T-48. They have related to the gas cylinder design. The force that opens the bolt is proportional to the area of the hole in the barrel, through which the gas comes to move the operating parts. The T-48 has a moveable plug at the front of the gas cylinder which is supposed to be (Continued on page 47)



Belgian FN has easy takedown, but simplicity is deceptive: gun has more than 80 parts including complicated long receiver. Rear 600-yard sight may tend toward inaccuracy. It is mounted separately from gas sleeve front sight.



Berns Martin upside-down "Lightning" holster is handy for speedy draw of belly gun when needed quickly.

BELLY GUNS

SAWED-OFF RUNTS OF REVOLVERS HAVE ONE JOB TO DO—GO INTO ACTION FAST, GET SHOT OFF AT BARROOM DISTANCE IN SHOWDOWN FOR SURVIVAL

By COLONEL CHARLES ASKINS

BELLY GUNS are not advertised, you seldom see them pictured in the shooting magazines, but there is nothing new about the gun or the idea behind it. Famed quick draw expert Luke Short killed Jim Courtright in Fort Worth with a belly gun and Dallas Stoudenmire, while city marshal of Old El Paso, packed a pair. One fine, bright morning he knocked off three men in as many seconds with these guns and short months afterward was himself gunned to death by a belly howitzer in the determined hand of Jim Manning. Nope, this type of stinger is not new. But the breed that use them do not go around advertising either the hardware or how it is handled.

This is the kind of a shooting iron you do not see on pistol ranges. The target-shoot boys would not know what to do with it. Because this particular kind of a chopper has no sights, most of the paper-punchers would turn up their noses. The arms manufacturers make stabs at turning out a belly gun but none of them have really produced anything save a fringe item.

What exactly is a belly gun?

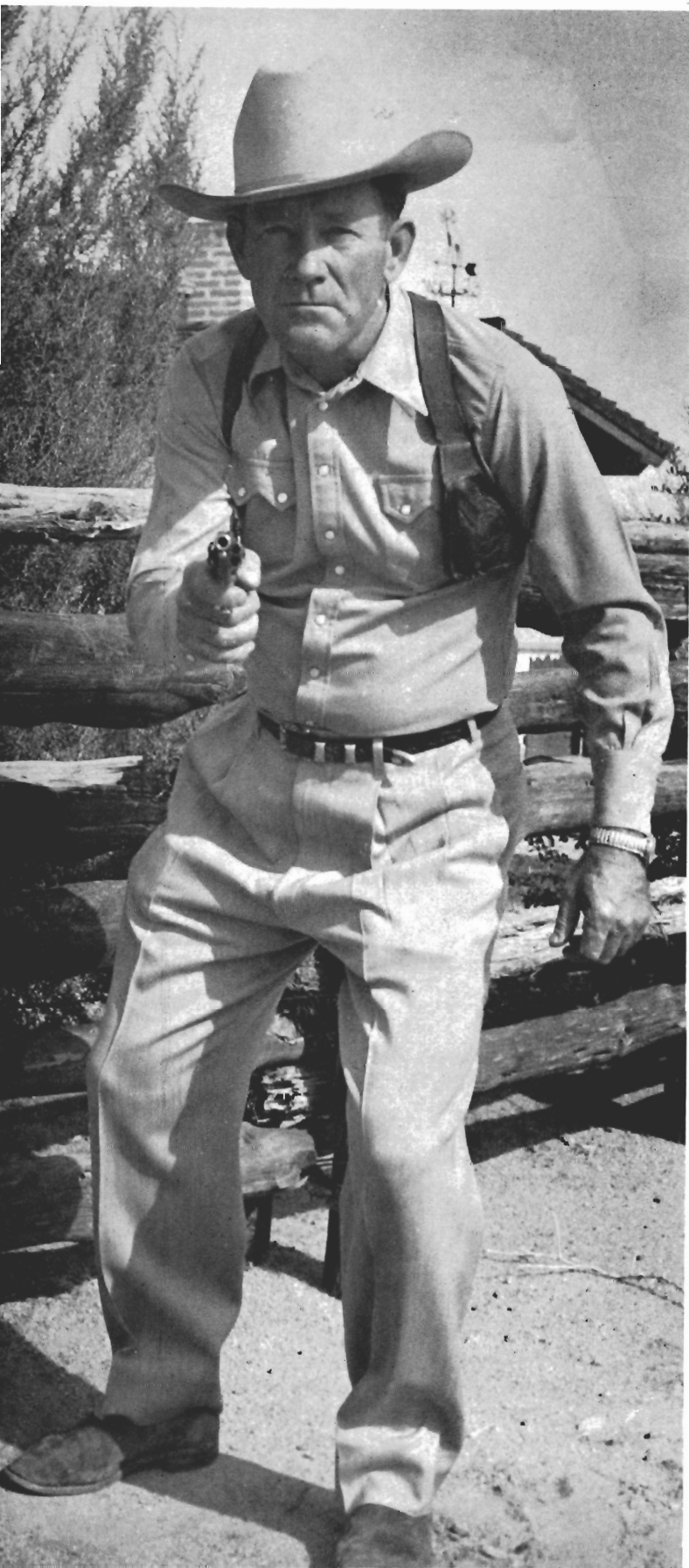
It is just what the word implies, a kind of hardware you

jam against the other man's navel and trigger off a burst. It has to be done in a twinkling or else he is apt to take the gun away from you and that could be bad. Since the trick of the thing depends on speed, the pistol must be short and handy—short so that it comes out fast and lines up lethally and handy so that a man points it like he does his finger.

The belly gun looks like an abortion. Actually it is the very embodiment of all the one-hand gun stands for. It is a defensive tool par excellence, ugly and unpretentious. It more nearly achieves that for which the pistol was designed than any of its brothers—the defense of the user.

A one-hand gun to earn the distinction "belly gun" had better be a six-gun. The automatics of U.S. vintage do not measure up. For in purest interpretation the title implies a lot that at first blush does not meet the eye. Maybe most of all it implies a kind of hardware that can be swung with flashing speed. No auto-loader can be handled that pronto. The self-loaders must be cocked for the first blast and that is godawful slow, finding and earing back a tiny hammer. Autos have grips of bad shape, the

Gun fighter's crouch brings pistol from holster into a straight line with forearm. Pressed against side, shooter's whole body takes part in motion of aiming.



Colt New Service in .357 Magnum makes fine belly gun with guard cut away and sighting rib added.

wrist must pitch at an awkward angle and the fingers find the stock in a strained manner. Beyond that the grip-to-barrel relationship is so sad the first slug will bury into the opponent's calf. That is not exactly lethal. The automatic pistol is not a worth-its-salt belly job and despite the fact that Mausers and Walthers do have a double action, they still run second fiddle.

What is a belly gun for? It is a simple tool meant for a single purpose. It is built solely to defend its owner.

A belly gun is a good deal like the F-86 jet we used in the fairly-recent last war we fought. A lot of good brains and power of thinking went into this high flying gun carriage. The belly gun maybe did not command quite the degree of gray matter but no one can deny that the succession of gun twisters who evolved this very special little cannon were not just as ardently dedicated. The belly ripper was going to keep them alive and when a man considers ways and means of staying above ground, it is commendable what he can whamp up.

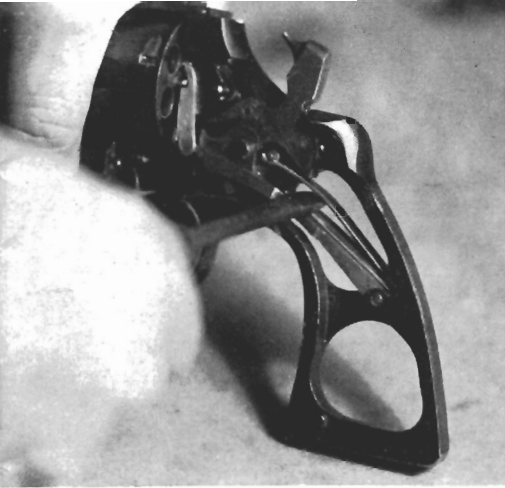
No one man can lay claim to having been the originator of this highly efficient defensive tool. It is the result of a long growth. Belly guns were first made from the SA models of the 70s and 80s. King Fisher in company with the notorious Ben Thompson died with a sawed-off in his hand one hectic eve in the old Vaudeville Saloon in San Antonio. The year was '84 and the gun was a '73 Model Peacemaker .45, with the extractor rod and spring removed and the barrel whittled to a length of $3\frac{1}{4}$ inches.

Double action revolvers, when they topped the horizon, were promptly converted to belly jobs. As a matter of fact the DA makes up into a more efficient packet than any of the old single action weapons. It is the most deadly one-hand gun in the world, that is, if hung in the proper kind of leather.

Suppose we take a long hard look at a six gun of this breed and consider what kind of a scabbard to use.

A belly gun is not intended to be shot at distances of more than 8 or 10 hefty steps, generally a heap less. So it does not need any sights. A sight is a device which lends itself to a feeling of false security. It makes the user believe he is going to place a bullet with more precision. Instead of hitting an adversary anywhere in the big middle, he is going to drill him fair between the eyes. This is dangerous thinking and will get a man killed.

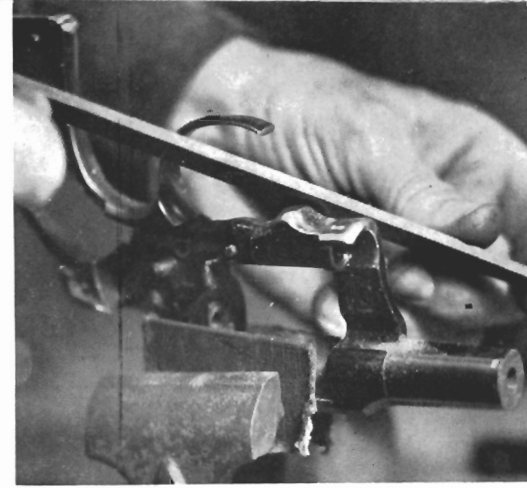
The idea is to get off the first shot and make it tell. Eliminate the sights and shoot the gun from below eye level. That makes for speed—the flash and movement of split hundredths of a second. At 25 feet the sights add



Smooth action of Colt Officers Model Match revolver is eased up still more by bending spring.



Sharp corners of butt frame should be cut off and rounded with a file. This reduces bulk of gun in shoulder holster under coat.



Trigger guard is cut away at frame to allow immediate grasping of the trigger as gun is put into action.

nothing; they are definitely not for a belly gun.

The barrel should be short: something between 2 and 4 inches, with a strong preference for the more choppy tube. The greater the length of the barrel, the more time is lost in whipping the business end into line with the target. Keep it to a minimum and time is gained. The extractor on a belly gun is excess baggage. However, if the weapon is a Smith and Wesson, the extractor can hardly be eliminated. If, on the other hand, the weapon is a Colt, this unit can be whacked off to a mere stub.

Personally I like to build a belly gun around the best and smoothest double action that money can buy. Start with the finest of the target revolvers and you will come away with a friction-free, fast-breaking action. The gun is going to be used solely as a DA. Therefore the trigger pull for single action powder burning is of little import. The strength of the hammer spring should be adjusted so that a cap invariably fires but be careful that this tension is not too great. A double action pull will vary; ordinarily the force needed against the trigger will range between 8 and 16 pounds. It goes without saying that if we can raise the hammer and fire the gun with a trigger pressure of only 8 pounds, it is going to be a more simple chore than if 16 pounds must be applied.

The S&W double action is smoother, faster and less disturbing to the aim than the Colt. The margin between the two six shooters is small and this is not to be construed as a blanket denial of the Hartford gun. I have a number of Colt belly models and have owned a raft of them. However, in any affray apt to be marginal, the S&W holds a definite edge.

Chop the forward end of the trigger guard out. When you need the gun in a hurry, the trigger guard serves no better purpose than to get in the way. It is argued that a sawed-off with the front of the guard whittled out is dangerous—so is the other man when he is intent on pumping lead at you. I have carried six shooters without a whole trigger guard for 20 years and have yet to have an accident. A belly gun out of a pocket, or from a holster, or snatched from any convenient spot goes into action eons quicker if the trigger guard is open in front.

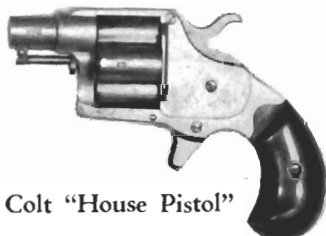
Dehorn the hammer. A revolver with a hammer spur will hang in the coat, catch in the shirt, cannot be carried in either a front trousers pocket nor in a hip pocket, and serves no useful purpose. Whack that same spur off and the gun is at once improved a dozen fold. It then has no projection that will catch.

It may be toted in a coat or jacket pocket and will come

HISTORICAL BELLY GUNS FROM OLD DAYS



Colt No. 1 derringer



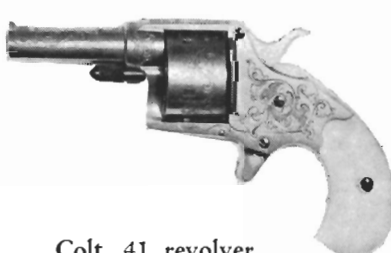
Colt "House Pistol"



Mormon "Destroying Angel's" Colt



Colt No. 3 derringer



Colt .41 revolver



Remington double derringer



Old time western gunfighters proficient with belly guns included: (left to right, top) W. H. Harris, Luke Short, Bat Masterson, (bottom) Charley Bassett, Wyatt Earp, M. C. Clark and Neal Brown, who sat together for portrait.

into action smoothly and quickly. It may be packed in any type of holster, either in the open or under a coat and the quick draw is not slowed by the infernal hammer hanging in the garment. Better than all this the mere fact that the gun cannot be handled single action is a psychological thing that assures the gunner when he is man-handling the piece, he must go all out double action so he triggers that way.

If when making up a belly gun, you start with one of our finest target revolvers—and well you should—you are confronted with the square butt target-type grip. This huge stock does not lend itself to easy stowage. The gun handle wants to be re-fashioned and in so doing all the corners must be rounded, the stock flattened, and unless your hand is very large, it may well be shortened. A belly model thus altered will have less tendency to hang

in the clothing, will lie flat and snug to the body, is reduced in size and weight, and from every consideration is a modification much preferred.

I have made up and packed belly guns in every caliber from .22 to .45. The best gun is the biggest. I put my money on the .45 Colt, the .44 Special, the old 44-40 and the .357 Magnum. The .38 Special with some of these hot new Remington Hiway Master loadings is also okay. I have small faith in calibers smaller than .38. The oomph simply isn't there when the chips are down.

A leaden bullet seated ahead of a hell of a load of Bulleye or DuPont #6, home-brewed, is more effective than anything to be had over the counter. The slug should be flat-nosed and then it should be hollow-pointed. This latter chore can be done with a drill and reamer or may be accomplished with a pocket knife and a little time. Make the side walls of this counter-sunk point quite thin. Even with a hefty charge of powder, the bullet will have a comparatively modest velocity. Despite this lack of speed the hollow point with its paper thin front portion achieves a desirable mushrooming effect on man hide.

The best scabbard makers for the belly gun are Myres of El Paso, Lawrence of Portland and Jack Martin of Calhoun City, Mississippi. Because the belly gun has no barrel to speak of, has the front end of the trigger guard cut away and many shoulders ordinarily used to support the gun are gone, it is a difficult chore to anchor it in a run-of-mill holster. The gents I have enumerated can do a bang-up job of fashioning leather about the freak, however. The *(Continued on page 47)*

Berns Martin holster gets gun hidden up under loose coat.

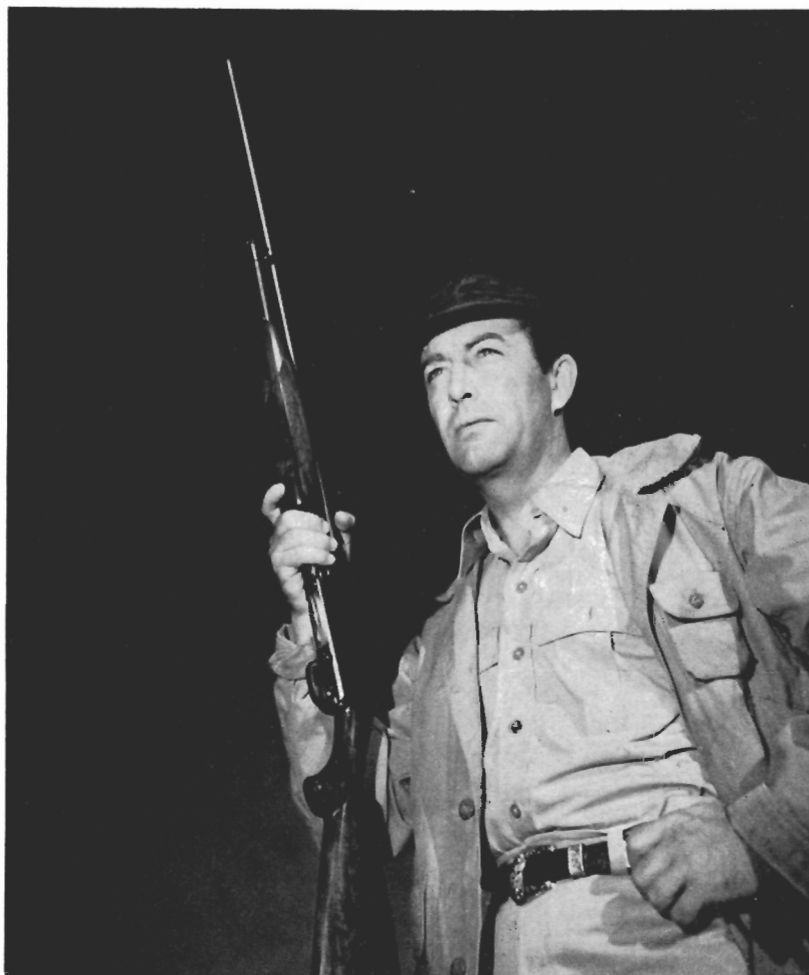


With pistol grip sitting high, side belt holster is right for fast cross-draw.



Same holster in hip pocket allows fast wrist-twist draw with right hand.





MY FAVORITE GUN

BY ROBERT TAYLOR, celebrated movie star, who favors a pigeon grade 12 gauge Model 12 Winchester for his duck-hunting. His newest film is "Many Rivers To Cross."

EVERYTHING that goes with duck hunting is exciting to me. Take the packing for instance. You know you're going next week. You start packing your gear. I usually take my 12 gauge pump gun and a 20 and 28 gauge. I use wood decoys and I pack them with loving care. I shiver slightly as I do, for I visualize a below zero morning, with me wading somewhere between the frozen tules, with the biting wind whistling past my numbed cheeks, carefully placing the "dekes" on the water with fingers so stiff they'll barely unbend. If anyone at that moment offered you a thousand bucks or a cup of coffee then, brother, you'd take the coffee. You got

to love ducks to go through this.

Getting my bag limit of ducks quickly is not always my luck. I do not consider myself a top shot. It's just that I believe I can remain calmer and luckier than most. Still, in spite of the luck I've had numerous disappointments when a pintail or canvasback whizzed past my nose at 70 miles an hour. Such speeds are not unusual for these species, especially when they have sensed danger, and some of their aerobatics would put a war ace to shame. I have seen ducks suddenly aware of danger, plummet into the water like a stone and disappear out of sight. Others zig-zag so it is virtually impossible to sight on them and hit.

GUNS in the NEWS

[Special]—

□ When game wardens from all over the state of New Mexico held a meeting in Albuquerque, it was a top secret affair until they arrived home. They were afraid poachers would have taken a field day if they found out the wardens were all at a convention.

★ ★ ★

□ At Grand Rapids, Mich., two five-year-old boys, armed with a broken pop gun, and accompanied by a cocker spaniel, saw a pheasant in a tree. They pointed a toy gun at it and shouted "bang"—and the bird promptly fell to the ground. Investigating game authorities explained the startling phenomenon by saying that the bird apparently had been hurt previously and fell from the tree when frightened by the boys and the dog.

★ ★ ★

□ At Zanesville, Ohio, a hunter got a 10-point 200-pound buck the hard way. After wounding the animal, the hunter chased him into a nearby river and then plunged in after it. After a struggle, he managed to drown the buck.

★ ★ ★

□ At New Castle, Pa., a deer ate Hunter N. K. Hays' lunch while he dozed.

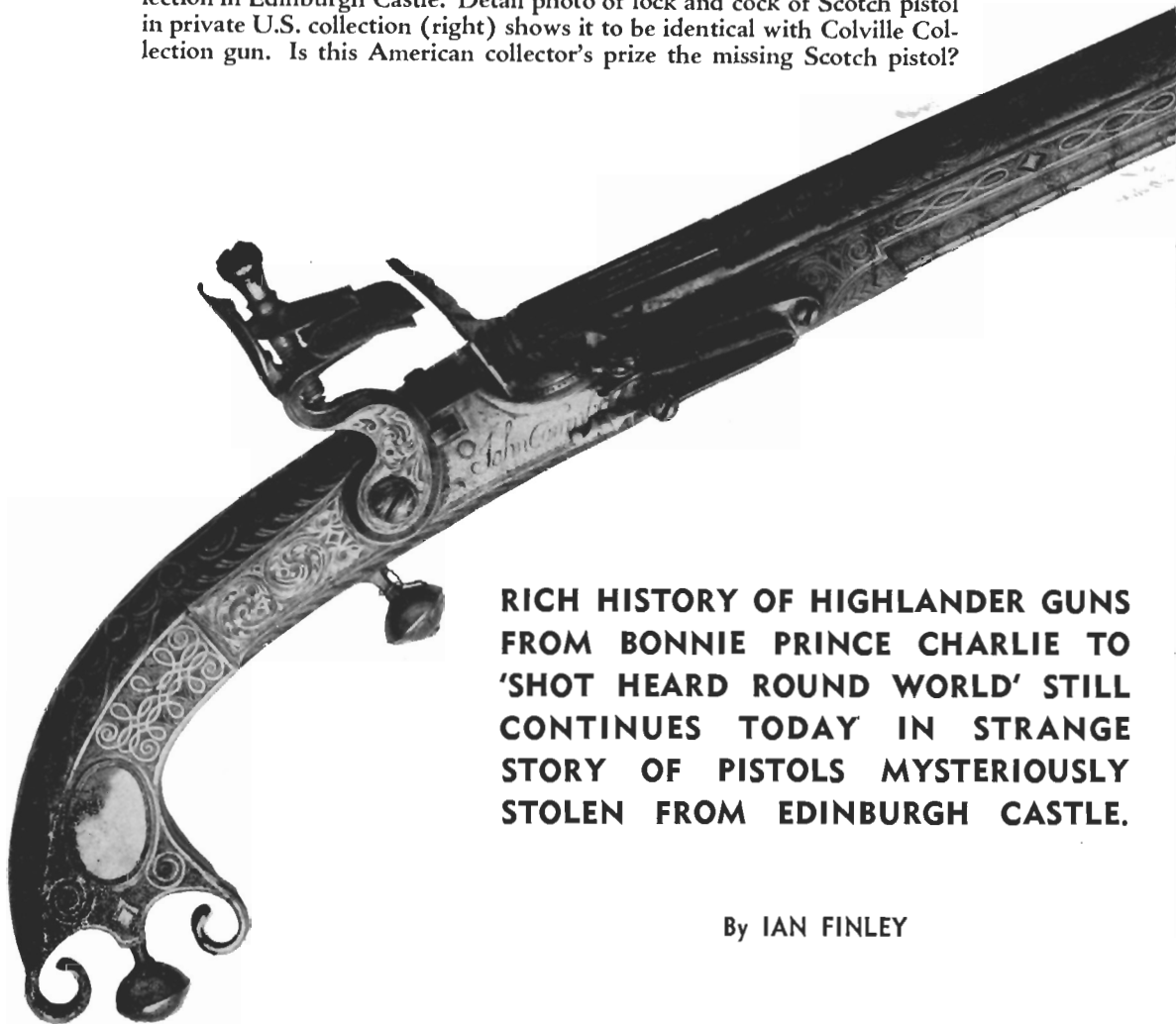
★ ★ ★

□ In Gladstone, Mich., a rough facsimile of a deer was erected near a highway as a gag by local hunters. In little more than a week, the wooden deer was hit by 50 shots from passing hunters, ranging from 22 calibre to 12 gauge shotgun slugs. Most were "gut shots" which would have ruined the deer if it was bona fide.

★ ★ ★

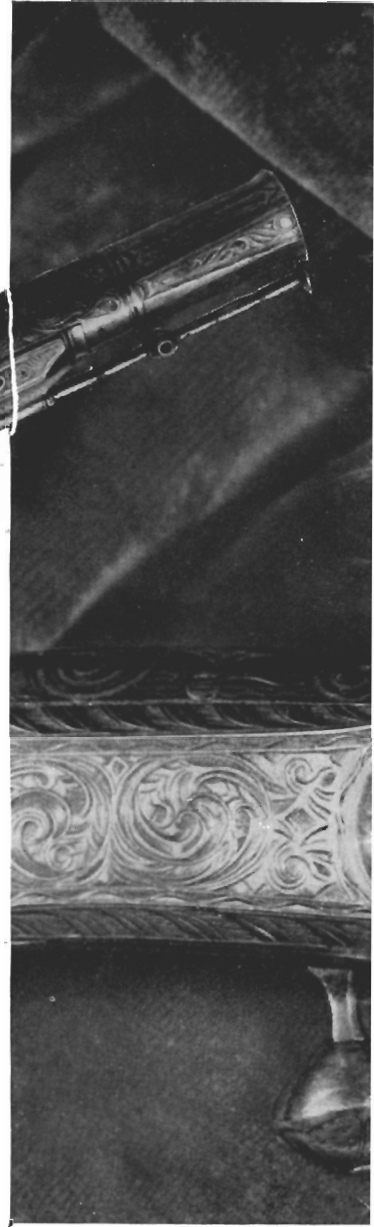
□ On Vancouver Island in British Columbia, there is a woman, Joan Yates, who is known as queen of the cougar hunters. She has been shooting the big cats for 17 years and her bag now totals 23. Hunting with dogs and using a 65-year-old double-barrel big rifle, she occasionally goes on the trail of the mountain lions in her pajamas.

Photo of gold-mounted Highlander pistol (below) by John Campbell of Doune was taken of Scotch pistol before it was stolen from Colville Collection in Edinburgh Castle. Detail photo of lock and cock of Scotch pistol in private U.S. collection (right) shows it to be identical with Colville Collection gun. Is this American collector's prize the missing Scotch pistol?



RICH HISTORY OF HIGHLANDER GUNS FROM BONNIE PRINCE CHARLIE TO 'SHOT HEARD ROUND WORLD' STILL CONTINUES TODAY IN STRANGE STORY OF PISTOLS MYSTERIOUSLY STOLEN FROM EDINBURGH CASTLE.

By IAN FINLEY



"Rob Roy" played by Dick Todd in recent Disney film is handed all-metal "Highlander" pistol to shoot.

THE SCOTCH PISTOL MYSTERY



UNIQUE in arms decoration, Scotch pistols have long been among the most coveted prizes sought by American gun collectors. A brisk business in arms importing since World War II has brought many to America. About one of these has been woven an aura of mystery: is the John Campbell pistol now in a private U.S. gun collection the same gun stolen by an unscrupulous curator from Edinburgh Castle several years ago?

It was shortly after V-E day that a castle curator pilfered a pair of John Campbell gold-mounted pistols from the famous Colville Collection in the castle. On display in the castle for years, the pistols were suddenly missing and police got on the trail. Before long they had their man . . . but the pistols were slipped into legitimate trade channels before the guilty curator was caught. Before the culprit was sentenced to serve time, the pistols were gone from Scotland.

What happened to the pistols after that is a matter of dispute. The facts are that in a big U.S. collection today there are a set of Scotch pistols with an exact identical appearance with the missing Edinburgh Castle guns. Whether they are the same is a question mark. Tracing back the origin of these Scotch pistols leads to an American dealer respected by all who know him. He obtained the guns from a prominent British gentleman, who obtained the license for their export.

Detail photos of the lock and cock on the John Campbell gold-mounted pistol in the American collection show the gun to have the same identity as the pistol pilfered from the Colville collection. The photos on these pages present the evidence.

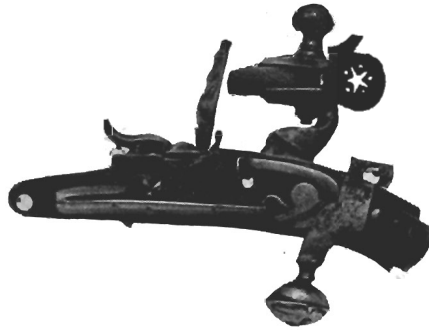
If these are one and same gun, rightfully they are the property of the people of Scotland and a part of their history . . . and a rich history it is, indeed, with their Scotch pistols playing a colorful role.

Talk about the "fighting Irish!" It was the Scots who taught them to fight! Even Caesar's legions gave the "Hielands" up as a bad job, built a rock wall across the island and called the lower half "Britain." History does not record the choicer Latin names the Scotis were once called. Fighting happens on nearly every page of Scottish history down to the Rebellion of 1745, when Bonnie Prince Charlie made his attempt to seat himself on the British throne—an usurpation which ended in defeat. The shooting between Highlanders and Lowlanders stopped when Prince Charles Stuart escaped into exile, but the making of fine Highland weapons did not stop.

Under British rule, which some Scots do not recognize even today, carrying of arms was forbidden. For a Highlander to be caught carrying a gun or dirk, or even wearing the tartan, meant transportation to the plantations in Amer-

ica. Still unsubmissive, Scottish gunsmiths went on making pistols. For a while after the Rebellion, they made pistols even finer than were made before it. They were pistols so fine they were carried to Europe as presents for royalty.

In America, the Scottish pistols have an equally active story. Carried by Tory Major John Pitcairn, one of his Scotch Murdoch rams-horn pistols fired the first shot in the engagement at Lexington: the "shot heard round the world." As his horse reared in fright, Pitcairn dropped his pistols to seize the reins. The guns are now a prized exhibit at the Lexington, Mass. Historical Society. Other Scotch pistols carried by those tooth-and-nail fighters under General James Wolfe were fired in the sacking of the French Citadel at Quebec. Skilled in mountain craft by stag stalking in their native glens and corries, the Highland troops scaled vertical crags to arrive in battle order on the plains of Abraham and attack



Chrystie lock of 1750 lacks bridle of perfected flintlock, uses rocking cock catch instead of sear moved by trigger.

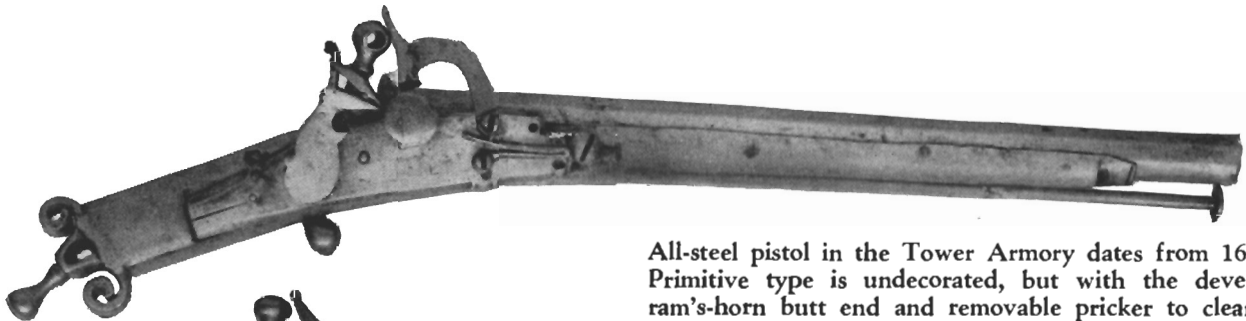
the fort from a less protected side.

There are several types of Scottish pistols but the one that typifies all that is best in this grand little weapon is the true "Highlander," the pistol with a ram's-horn butt. It hit its peak period in the middle of the 18th century. Its beginnings about 1600, when the prototype comes into being, are dim, but from then on until the day of Sir Walter Scott, when it went out of ex-

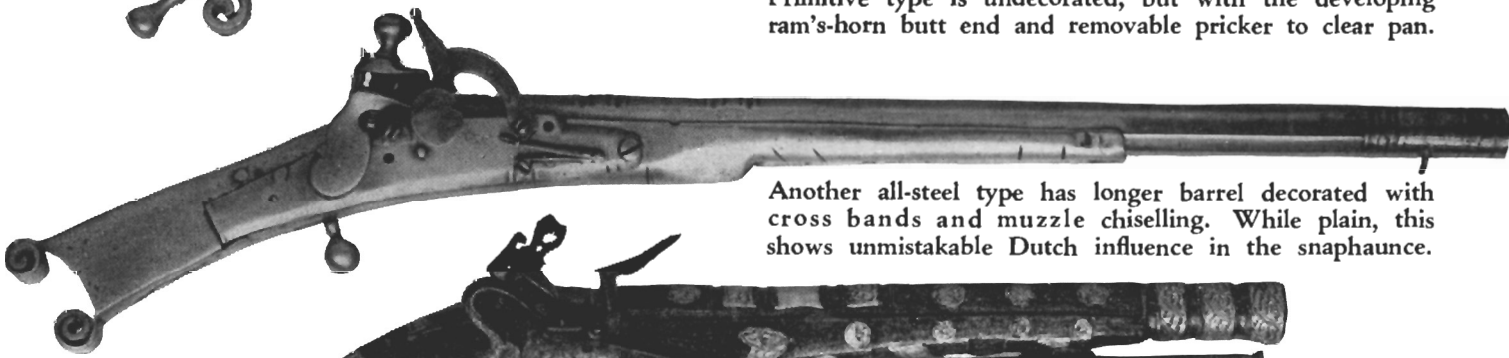
istence with a last romantic flourish, each step in its evolution is clear.

The earliest stage, pistols with fish-tail butts, is not represented in any American collection. The few examples that survive are in Scotch, English, or European museums. Butt and stock may be either of wood or of brass. The flintlock is of early snaphaunce type, the chief feature of which is that steel and pan-cover are separate pieces, the pan-cover being operated by a rod connected to the tumbler. The word "snaphaunce" seems to derive from the Dutch *snaphaan*, a chicken-thief, the assumption being that the thieves found matchlocks chancy weapons and invented something better. This lock points clearly to the origin of the Scottish gun and pistol industry. There were close trade relations between Holland and the east coast of Scotland, and the Scot gunmakers must have copied their first attempts from imported Dutch pieces.

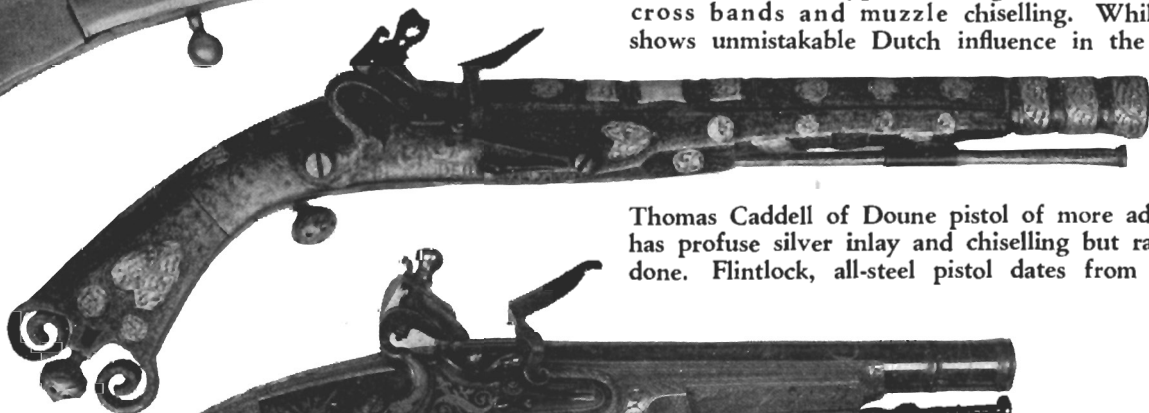
There are some crudities in these



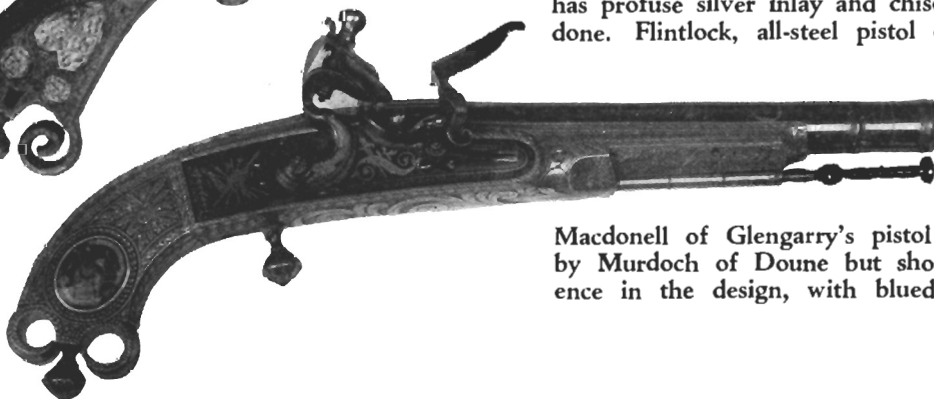
All-steel pistol in the Tower Armory dates from 1660-70. Primitive type is undecorated, but with the developing ram's-horn butt end and removable pricker to clear pan.



Another all-steel type has longer barrel decorated with cross bands and muzzle chiselling. While plain, this shows unmistakable Dutch influence in the snaphaunce.



Thomas Caddell of Doune pistol of more advanced form has profuse silver inlay and chiselling but rather crudely done. Flintlock, all-steel pistol dates from about 1700.



Macdonell of Glengarry's pistol was made before 1800 by Murdoch of Doune but shows strong English influence in the design, with blued barrel and gold inlay.



Detail of stolen Campbell pistol shows belt hook which was characteristic of Highlander pistols, with profuse carving of the castoff barrel and steel stock.



Scaling the heights of Abraham at the rear of fortress defending Quebec, General Wolfe's officers carried Scotch pistols to rout French troops.

early types. The mechanism has no bridle to hold it together; and, as there is no device for half-cock, no safety-catch nor a trigger-guard, the pistols must have been dangerous weapons to carry around primed and loaded.

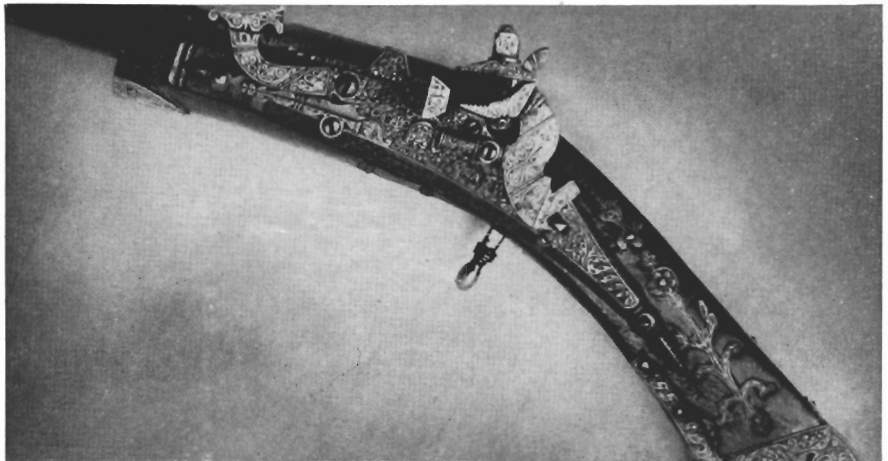
Their best feature is their decoration, which is a queer mixture of the sophisticated and the barbaric. External working parts are intricately engraved, especially on the wooden-stocked pistols, and there are engraved moulded bands on the barrel. Walnut is the wood used, and the silver mounts pinned to it are delicately incised with leaf scrolls and flowers, while the pattern of tendrils and rosettes on the butt-plate follows the same pattern. Brass pistols are

nearly as rare as the wooden ones.

The wide distribution of the early types—museums at Dresden, Stockholm and Berlin all have fine specimens—is because the Scots were travelers and adventurers, ready to get into other people's wars when there did not happen to be war going on at home. Gustavus Adolphus of Sweden in the 17th century had hundreds of Scots in his army, which victoriously invaded Germany. Berlin has in its Zeughaus—or had until the war—the earliest dated Scottish piece (1613). In the Tower of London is a piece dated six years later.

After that, the use of wood ceases. The typical Scottish pistol becomes all-steel. The first (*Continued on page 43*)

Walnut-stocked Scotch pistol with left-hand snaphaunce lock dates from 1619. Lock shows early Spanish-Dutch features, with maker's mark before cock.



WITH TV WESTERNS
NOW BOOMING, GREAT
WESTERN PRODUCES A
REASONABLE FACSIMILE
OF OLD COLT TO MEET DE-
MANDS OF NEW DRUG
STORE COWBOY CLAN

Half of a day's production run of
the Great Western Frontier revolver
is laid out on table for final inspection.

A SIX-SHOOTER

FOR TV COWBOYS

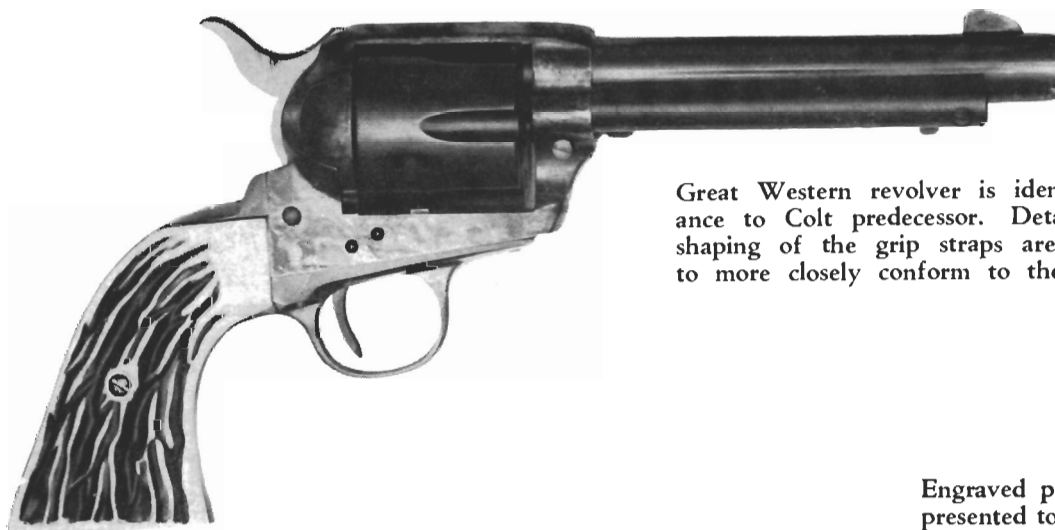
By WILLIAM B. EDWARDS

THEY SAY that on a cold night, when you walk past the stern figure of Samuel Colt standing as a monument on his grave in Hartford, Conn., there can be seen a faint smile on his cold marble lips. And many people wonder why he is smiling. Maybe it is because some 3,000 miles away, in the City of the Angels in the land of California, there is a man who is doing the same thing Colt did back more than a century ago. On borrowed capital and a determination to make a good product, William Wilson of the Great Western Arms Company is building a new version of Colt's famous "Peacemaker."

Wilson's shop in Los Angeles is a small plant employing a couple of dozen mechanics. The walls are tin sheeting, the machine layout inefficient, the production small. But there is Colt's "spirit of 1847" here, recalling the time when Sam Colt, with \$14,000 in his pocket and some used machines, set up shop for the first time on Grove Street in Hartford. Colt's first works



Genuine Colt Single Action was used in early advertising of Great Western revolvers. New grips of the standard GW stag pattern were fitted, and the stampede for the new Frontier Six-gun was on.



Great Western revolver is identical in appearance to Colt predecessor. Detail variations in shaping of the grip straps are being changed to more closely conform to the Colt contours.

was small but by working 20 hours a day, by gathering about him men of specialized talents in many fields, he built a factory, fortune, and a legend . . . the legend of the "Colt."

That legend is dramatized today in the hundreds of movies and television stories about the wild west of the last century, where trails were blazed in gunsmoke through desolate Indian country. The one gun most used in these films is the venerable Colt Single Action or "Peacemaker." Such publicity has been, for the Colt company, ill-timed. This gun is no longer made by Colt. However because of its TV popularity a demand for the weapon has arisen among gun enthusiasts all out of proportion to the number of existing genuine Single Actions. Watching Roy Rogers and Wild Bill Hickok shooting it out with badmen on TV screens, a new species of drugstore cowboy came into being; all seemed to want to own a Single Action six-shooter. With Colt defaulting on this demand, a West Coast businessman

decided to do something about it. William R. Wilson couldn't duplicate the old Colt, but he decided he could make a reasonable facsimile to satisfy the new "cowboys."

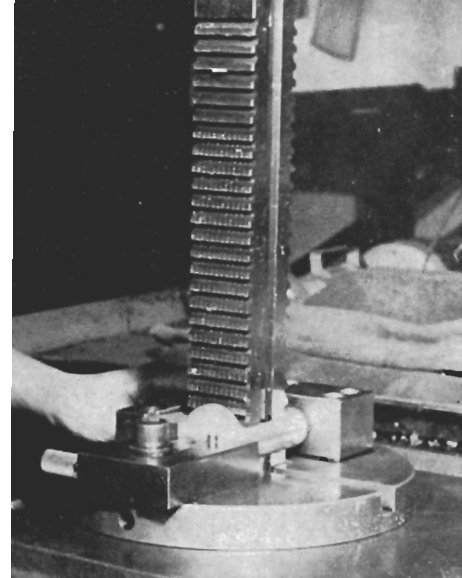
Wilson formed the Great Western Arms Company, an independent corporation with no connection to any other firm. He has been pretty particular about making this point, because some people wondered if he "was connected with Colt." Others consistently referred to his gun by the name of Hy Hunter, a principal distributor.

For the initial tooling, about \$180,000 was sunk by Wilson into his plant. Costs of manufacturing have risen indeed since Sam Colt went into business!

Wilson's idea was to offer a gun exactly like the "Colt," with several small but important improvements. Trigger and bolt screws in the GW "Frontier" are of a different thread from the original; they stay put more securely under the shock of firing and

Engraved pair of Great Westerns is presented to film star John Wayne by Great Western president Bill Wilson.

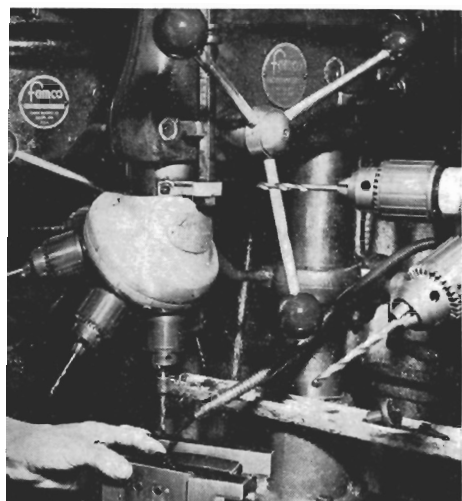




Vertical broach dragged through cylinder hole squares frame sides, cuts basic planes.



Frame bottom against which guard strap must fit closely is finished smooth by machinist using angled jig on a precision grinder.

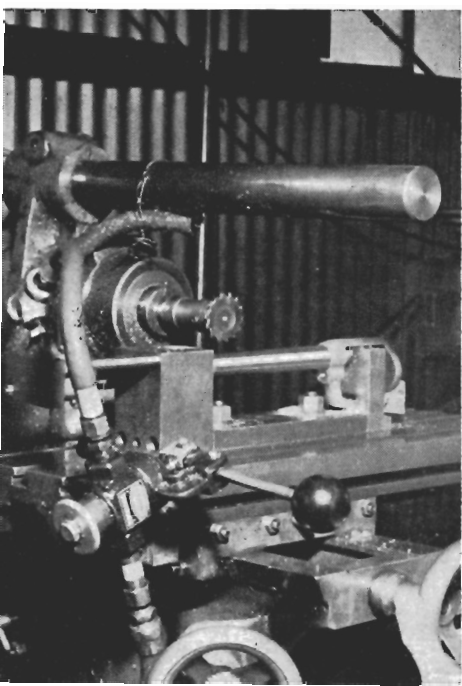


Multiple drill heads do all frame drilling without taking the part from the complex jig

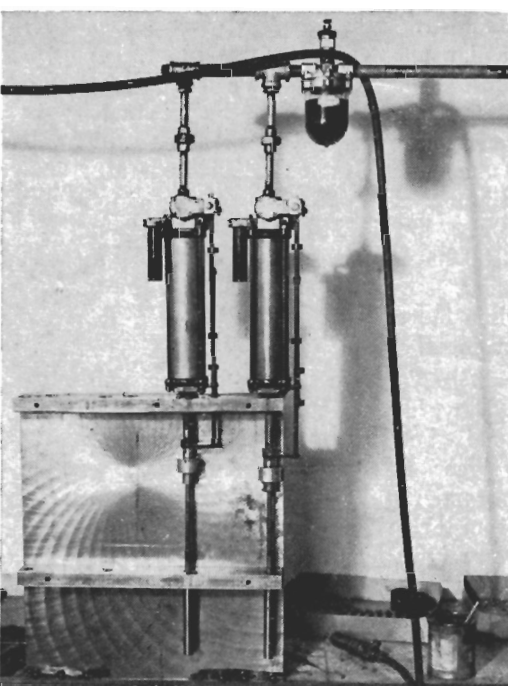


Barrel blank is "turned" or tapered for shape on lathe. Next step is threading of barrel for mounting on the work frame.

With barrel screwed into a work frame to hold it, the front sight slot is milled.



Finished machined barrels have the bores mirror-lapped on special GW "pump" made to allow adding two more units later on.



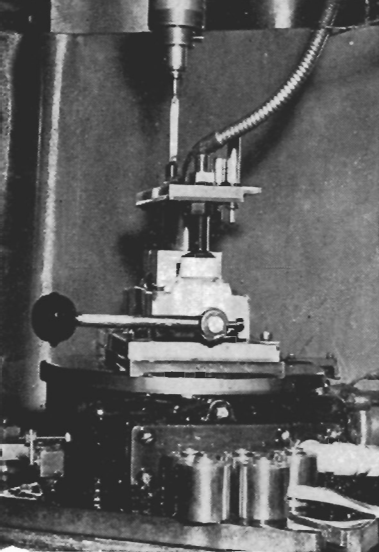
do not shake loose. Instead of making a forging for the frame, he uses an invested chrome-molybdenum casting of aircraft quality steel. The straps, trigger guard and hammer are all of chrome-moly, while the cylinders are of high-carbon S.A.E. 4140 chrome-moly treated to 36 Rockwell on the "C" scale. This alloy steel is much more difficult to machine easily but results in cylinders of great strength. Pressures of 52,000 p.s.i. have been fired in GW's .357 Atomic with no difficulty, while handloads of 30 grains of Hercules 2400 have failed to do any damage in the .45's. However 27 grains bulged a comparable Colt cylinder. The trigger and cylinder bolt are coined from beryllium bronze alloy, a metal well adapted to spring purposes.

Wilson's new Frontier is made in .22, .38 Special, .44 Special, .45 Colt, and a new caliber, the .357 "Atomic." This last is an extension of the earlier .357 Smith & Wesson loading, squeezing a little more powder into the case, and boosting the muzzle velocity as gauged by Roy Weatherby's Potter Counter Chronograph to 1660 feet per second, giving 906 pounds muzzle energy. The bullet is somewhat lighter than the regular .357 Magnum loading, 148 grains against 158, which in part would account for the higher velocity. Actual velocities of the .357 Magnum cartridge do not stack up well compared to the catalog figures of 1450 f.p.s. in an 8 $\frac{3}{8}$ " barrel, being somewhat less.

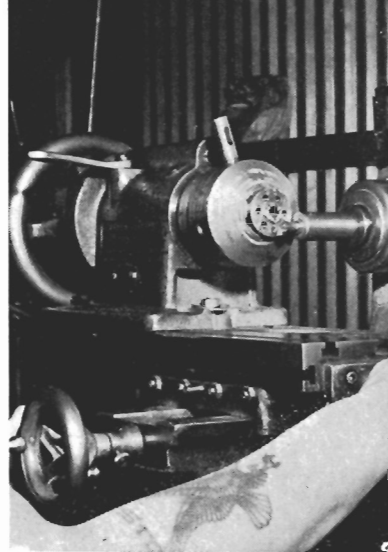
In the absence of any proof to the contrary, Wilson's boast of "the most powerful handgun ever made" stands for the .357 Atomic GW Frontier. Regular .38 Special and .357 ammunition may be fired in the Atomic, but Atomic ammo is too long to chamber even in the .357 Magnum revolvers of other makes. The Frontier has been planned in .30 U.S. Carbine caliber, but so far none have been produced.

The new "Frontier" has had a tough row to hoe. Gun fans wanted it exactly like the old Single Action, which Colt said they would not produce again. That was where the trouble began. The Colt was made and finished by workmen who knew their jobs. Men were at the Colt benches who had been on their jobs for 60 years. Some tools used to make the Colt dated from the Civil War!

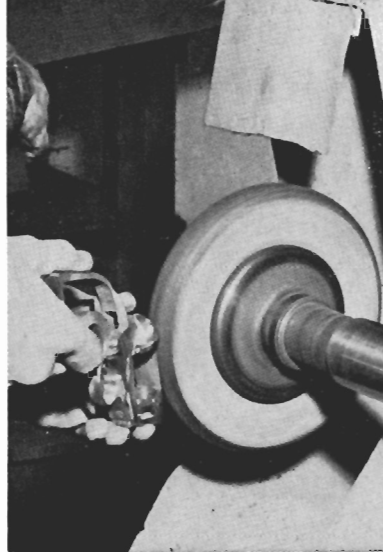
A heritage of gold-dollar craftsmanship in a cutthroat depression made the Single Action one of the finest guns



Reaming cylinder chamber is done in six-stage indexing jig.



Indexing headstock grips drilled cylinder during ratchet cutting operation on milling machine.



Polishing related parts assembled is responsible for Great Western's "crisp" looking frame and straps.



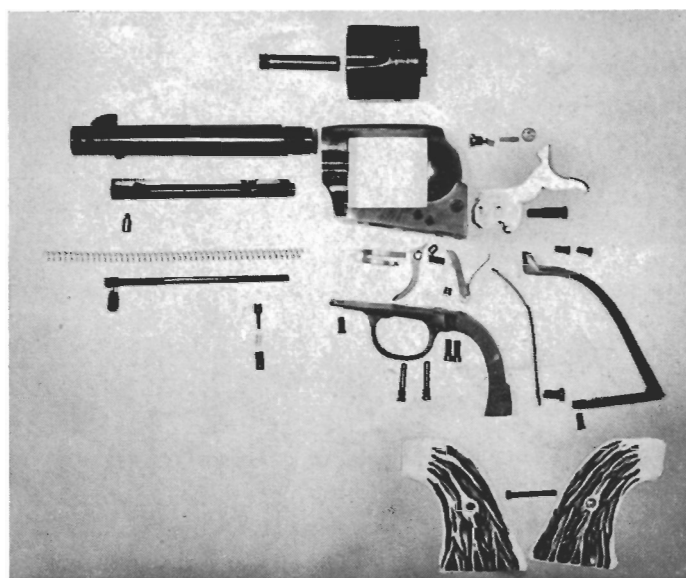
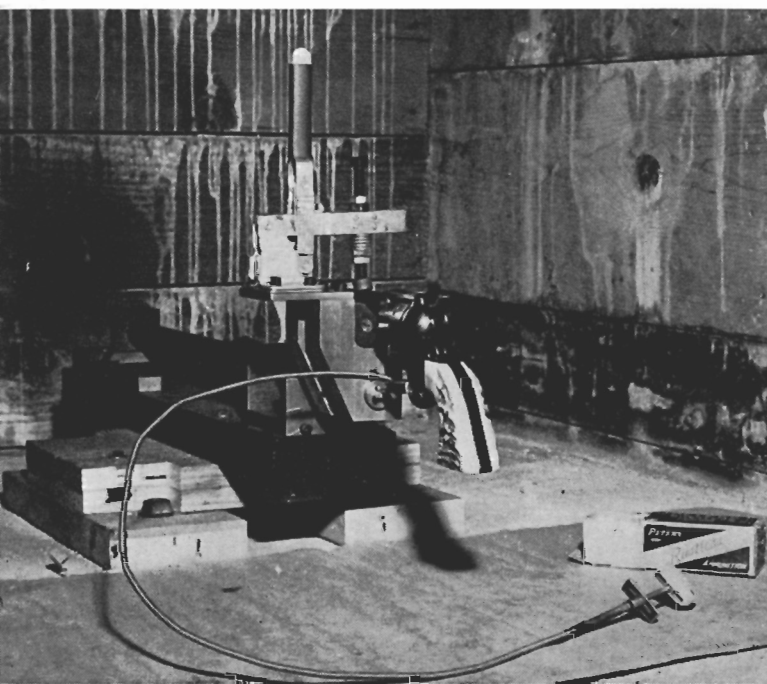
Finished cylinders are blued with nitrate bath after testing.

ever made. And it was all accomplished through extensive hand fitting, and nearly 100 years of manufacture of the same or similar item. This no company today could hope to equal, and the early Great Westerns show it.

Two .45 caliber GW's in the GUNS Magazine collection, numbered below #200, show very poor fitting and an ordinary buff-the-'ell-out-of-it bluing job. The first two guns of the Frontier ever made had Colt hammers in them; these, also, seem to have scrap Colt hammers with the notches welded up and poorly re-cut. Triggers pulls are bad, and the fired cases stuck in the chambers, showing scratch marks after finally punching them out.

Gun #640 proved to be very accurate blipping jack rabbits from a car until the first misfire. While the bunny hopped away, I clicked the gun ten times, with no effect. The cylinder bushing advanced so much from the shock of firing that the primers were not hit by the pin. All this after only 15 shots! With a pair of pliers I squeezed the bushing enough to burr it and set the cylinder back to proper headspace distance. There was no subsequent trouble, until the heavy hammer spring snapped off the sear end of the trigger. At about this *(Continued on page 41)*

Special machine rest with vibrationless cable release is used for firing to spot check accuracy of new guns.



Each part of Frontier revolver is made from forgings, castings or stock in Great Western's own shop.

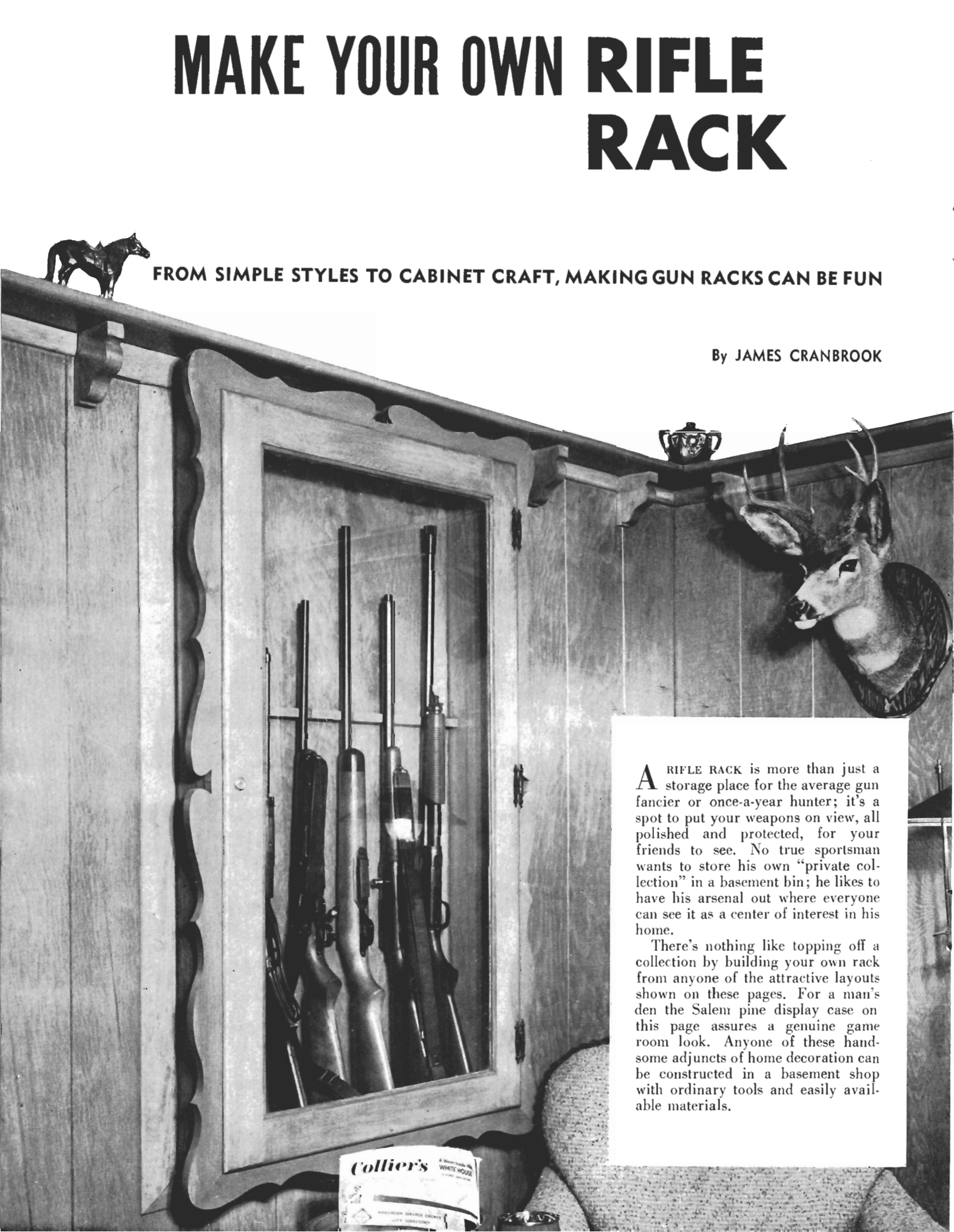
Targets shot by Colt (with carved grips) and GW Frontier show equal accuracy and one-hole groups.



MAKE YOUR OWN RIFLE RACK

FROM SIMPLE STYLES TO CABINET CRAFT, MAKING GUN RACKS CAN BE FUN

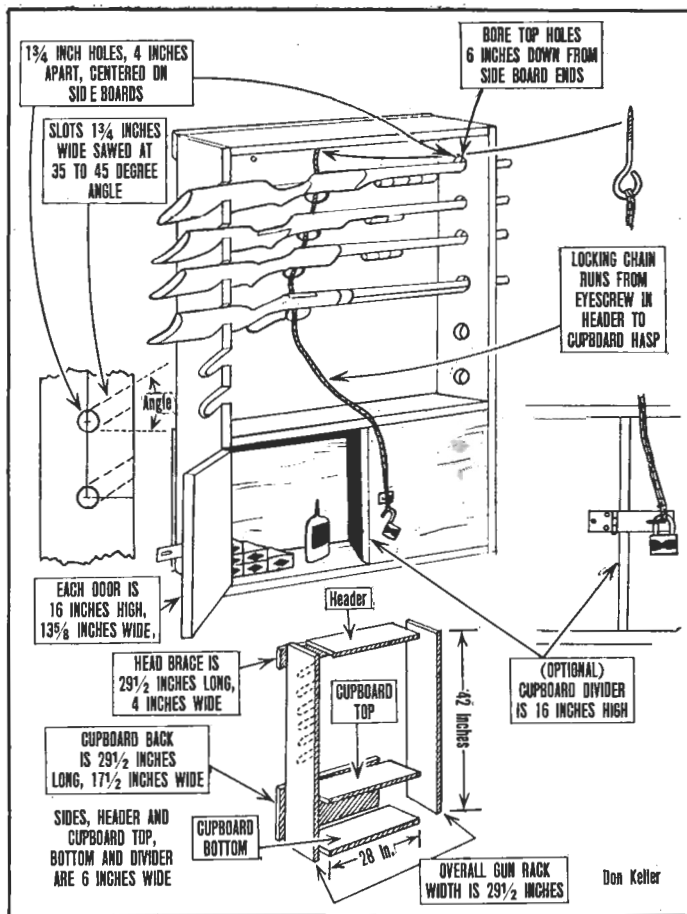
By JAMES CRANBROOK



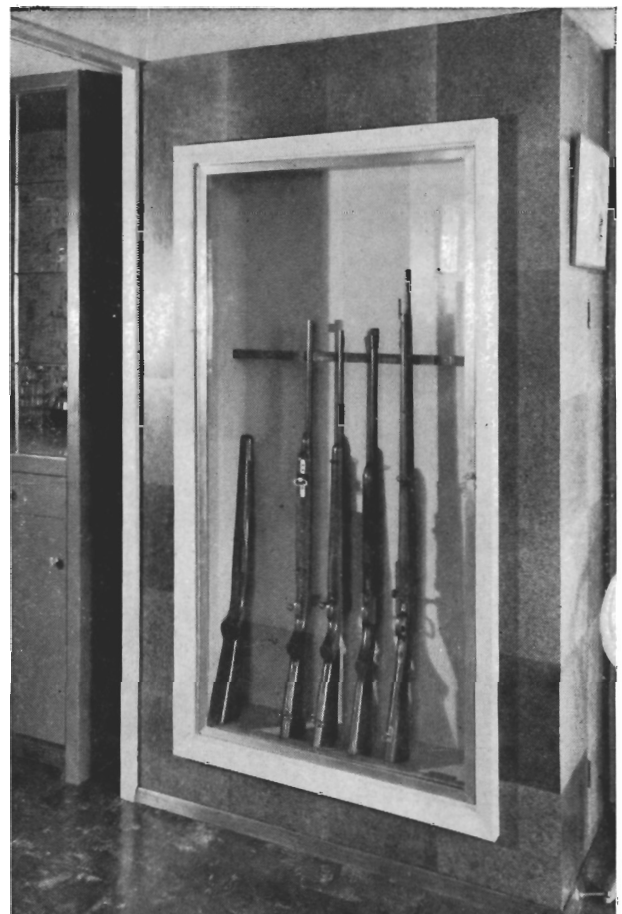
A RIFLE RACK is more than just a storage place for the average gun fancier or once-a-year hunter; it's a spot to put your weapons on view, all polished and protected, for your friends to see. No true sportsman wants to store his own "private collection" in a basement bin; he likes to have his arsenal out where everyone can see it as a center of interest in his home.

There's nothing like topping off a collection by building your own rack from anyone of the attractive layouts shown on these pages. For a man's den the Salem pine display case on this page assures a genuine game room look. Anyone of these handsome adjuncts of home decoration can be constructed in a basement shop with ordinary tools and easily available materials.





Nine cut boards complete the "makings" of this wall gun rack, with a storage compartment below for ammo and tools, and a trigger guard lock-chain for safety. Stock slots and muzzle cut-outs should be oiled felt lined to protect guns.



Covered in contrasting tiles, "picture window" case uses corner waste space. Glass door seals out moisture, and permits inside lights to warm the air, keeping guns dry and making the case especially decorative.



Finishing touch to ready-built book case which has been changed over into rifle rack is the sliding glass doors. Barrel spacers hold rifles upright. Lower shelf has room for pistols, binoculars, ammo and cleaning rods.



Traditional note of yellow pine makes roomy case attractive in any game room. Shelves could replace drawers, to hold ammunition, and pistols could be grouped on the inside of storage doors below.

RUSSIAN

Wolf

HUNT



On the trail of wolves in the Moscow region, fur hunter in camouflage snow suit draws a bead with his modern double hammerless shotgun.

SOVIET HUNTERS USE GERMAN AND AMERICAN GUNS TO BAG WOLVES, KILL OFF PACKS THAT ARE HAZARD TO REMOTE SIBERIA SETTLEMENTS

By ROGER CARVER

IN ITS VAST campaign to teach every Russian how to handle arms, the here-today, gone-tomorrow Soviet dictators have encouraged hunting on an official level across the steppes of the vast country. During the dead of winter, a huge army of hunters stalks game from Moscow all the way to Vladivostok. In addition to the military motives behind the encouragement of hunting, there is also the commercial element since furs consist one of the most important exports of the Russians to the free world.

Little is known about the guns used by the Russians for hunting. Most photos show a motley assortment of double-barreled shotguns, a great many of German make and some

"made in America." U.S. rifles in use include such as the Model 94 and military model 95 Winchester. The German guns most likely come from the gun-making town of Suhl, which was occupied by the Russians during the war. Its many fine gunsmiths turn out some of the finest hunting guns used by Russian hunters.

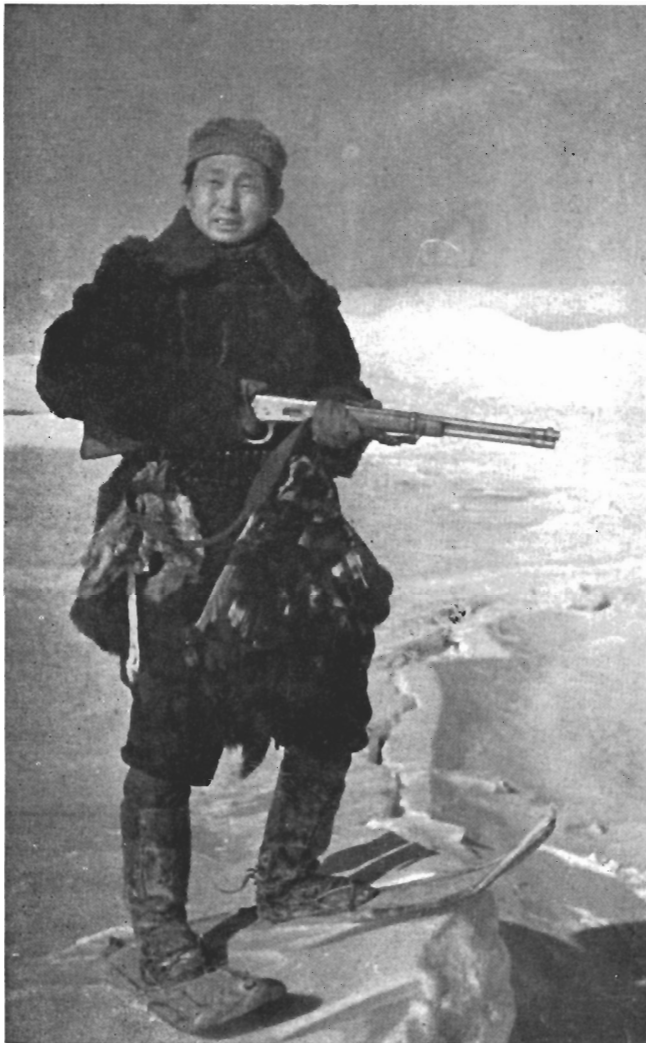
Many of the Soviet hunters are professionals, who shoot rather than trap fur-bearing animals. A great many of these are common wolves. These pelts are much in demand in the low-priced "fur-trimmed" coat market. Many of the wolf pelts come from Siberia, where wolf packs frequently breed until they are a *(Continued on page 47)*



Wolf call is used by hunter to lure game out of lair. Many hunters are Red Army men out for sport in off-duty hours.



Tracking wolf on special cross-country skis, Russian hunter shows apprentice how to follow trail of furry game.

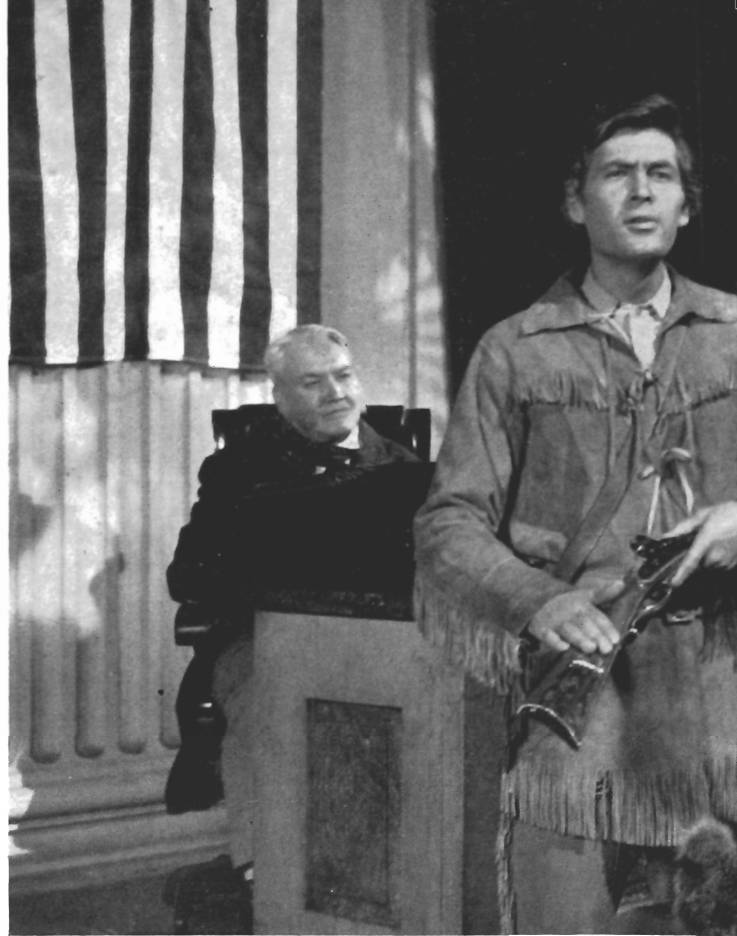


Carrying 30-30 Winchester carbine, Eskimo hunter sights game on snowy wasteland and gets set to take shot at wolf.



Bringing down three wolves, hunter inspects their pelts to see what they will bring. Some hunters wear camouflage.

THE LEGEND OF DAVY CROCKETT



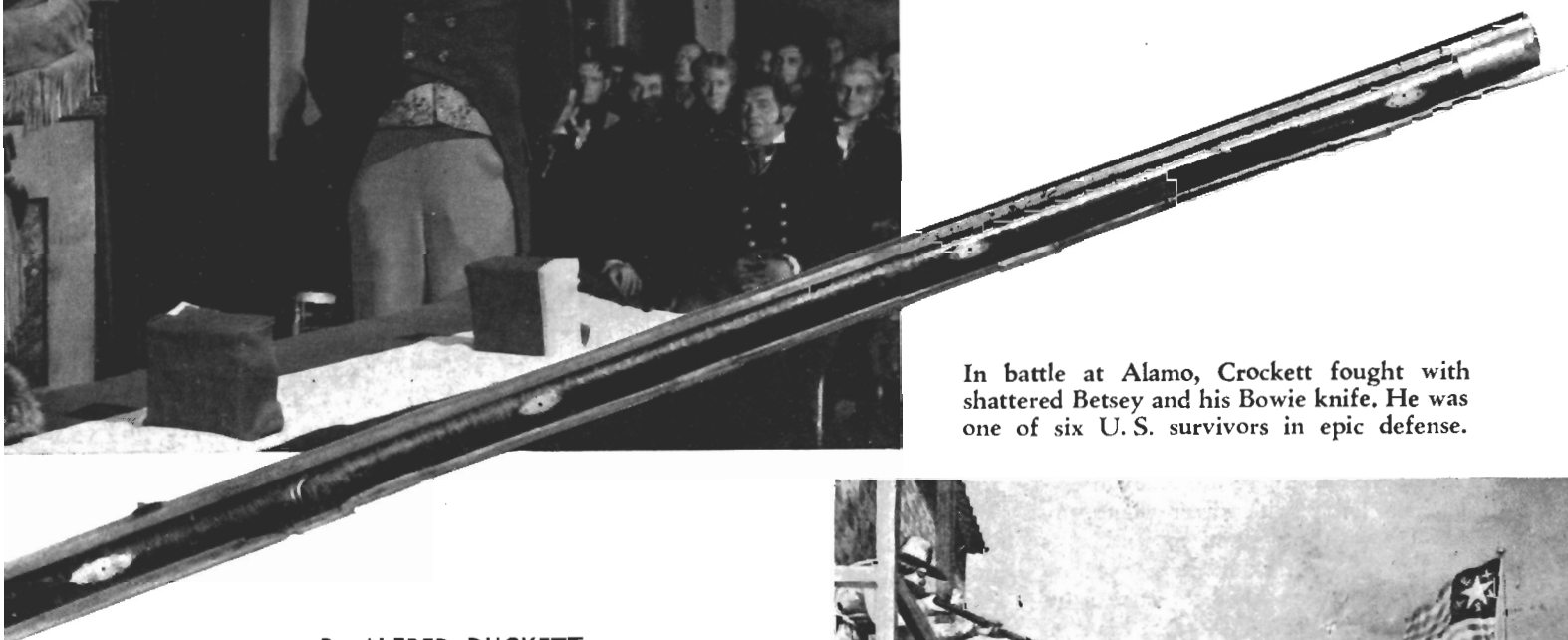
Famous painting of Davy Crockett done by J. G. Chapman shows him with beloved Betsey and hunting dogs.



**GREATEST LOVE OF FAMED ALAMO
MARTYR WAS FLINTLOCK RIFLE
WHICH HUNTER CALLED BETSEY
AND WHICH HE USED TO RECORD
PHENOMENAL FEATS DURING LIFE**



In Walt Disney television production, Kentucky rifle is always by Crockett's side, even when he is elected to Congressional seat.



In battle at Alamo, Crockett fought with shattered Betsey and his Bowie knife. He was one of six U.S. survivors in epic defense.

By ALFRED DUCKETT

HISTORIANS have had a hard time trying to separate fact from fancy in what has been left to posterity concerning the life of Davy Crockett, colorful martyr of the Alamo. The Tennessee-born hunter, marksman, politician and soldier is the hero of numerous folk tales, Hollywood movies and a popular song, "The Ballad of Davy Crockett," which is sweeping the nation today. Most of the Crockett legends, including those portrayed in the new Walt Disney television series, have some basis in fact but many of his exploits made such good conversation pieces that these tales are almost hopelessly entwined with fantasy.

Out of all the legends, however, one absorbing truth is evident: the greatest romance in Davy Crockett's life was a long-term affair with his much-beloved flintlock rifle which Crockett endearingly called Betsey.

In those free-swinging days when Crockett cut his wide swath across the pages of history, the typical American flintlock rifle was known as the "kaintuck"—dialect of the day for Kentucky. In the hands of such pioneers as Daniel Boone, John Rogers Clark and other giants of adventure, this weapon was as accurate at short range as any which the genius of five generations has been able to produce.

To be an expert rifleman, one needed a strong body, steel nerves, uncanny eyesight and experience gained from long and painstaking practice. Manipulation of the "kaintuck" also called for another virtue—patience. The



flintlock demanded loading with infinite understanding and methodical care. It had to be cleaned frequently and regularly. If you did right by your "Kaintuck," she would reward you with the utmost precision.

Obviously Davy Crockett always did right by his Betsey and in his hands, she became a highly-respected instrument.

There is a little difference of opinion as to exactly when Betsey came into Davy Crockett's hands. Biographers declare that he first grasped her when he was ten years old. Crockett, writing of his own exploits in a journal which was published in book form after his death ("Adventures in Texas"), boasts that Betsey was a presentation rifle. This is more nearly probable, for a small "boy's rifle" such as Davy might have used when little would hardly have been suitable for a full-grown man.

Betsey, so Davy said is his journal, was given to him "by the patriotic citizens of Philadelphia as a compliment for my unflinching opposition to the tyrannical measures of the government." It is too bad he could not be more specific. There are rifles in collections today with silver plates, inscribed with presentation sentiments on them, and it would have been interesting to know what citizens of Philadelphia backed Davy in his contrary moods in Congress.

Regardless of whether Crockett, at age ten, owned Betsey—or whether he acquired her later in life—he did have, in his extreme youth, a flintlock "Kaintuck." And he used her or a similar weapon often during the exciting 50



Encounters with wild animals make up much of Crockett legend. His battle with cougar is told in two versions. In one he killed huge beast with Bowie knife. In another he used double charge of powder in his Betsey rifle.

years of his life, as the unanswerable argument to anyone who doubted him.

One of the first doubters was Davy's Uncle Roarious. At ten, Davy was pridefully conscious of family tradition. In his native farming district of Rogersville, Tennessee, the Crockett family had earned a ringing reputation for producing some of the crack hunters and rifle experts of the day. Uncle Roarious was one of them and Uncle Roarious was certain that nephew Davy would swell the family triumphs one day. But when the boy begged his uncle to be allowed to go hunting alone, Uncle Roarious told him he was too young.

"I ain't too young," Davy remonstrated. "I'll show you."

While his amused relative looked on, the youngster selected a tree three hundred yards away. He pointed out a tiny, bent twig. Then Davy blew through the barrel of his little rifle to make sure the touch hole was clear, dumped a charge down and followed it with a ball wrapped in a linen patch. He bent back the flint cock, filled the pan with priming powder, closed the battery and took slow aim. The trigger touched her off. Smoke poured from the muzzle and a bushel of flame shot out. The bent twig was clipped right off its branch. The boy turned to his uncle, eyes shining.

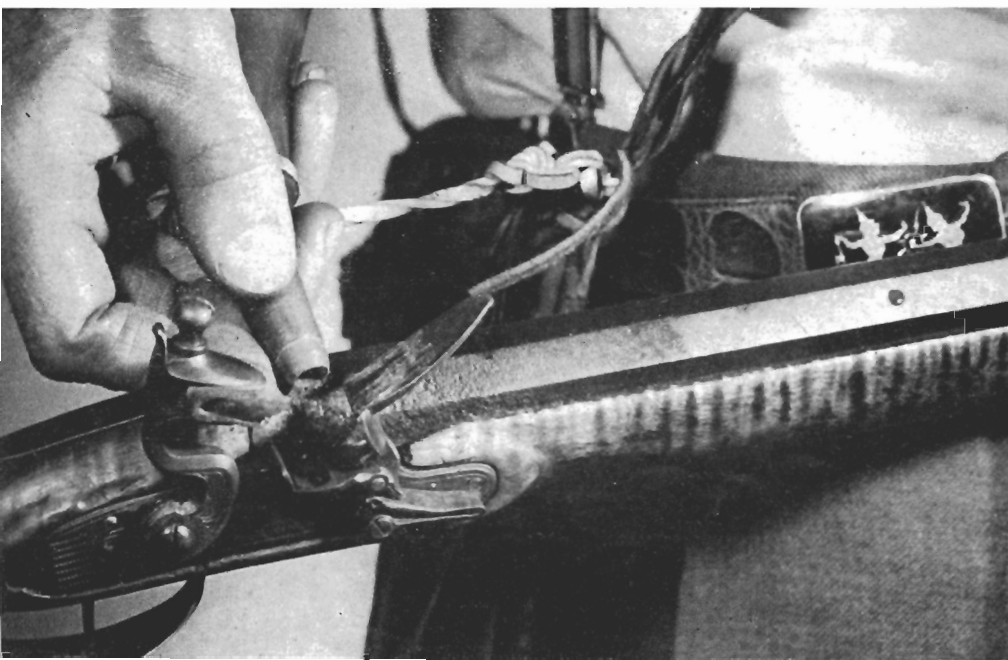
"That's just for practice," he bragged. "Some day I'll show you some real shooting."

When Davy put his gun down, his circle of backwoods admirers must have gulped a minute and looked wonderingly at one another. A chuckle grew into a laugh, as each realized that not only was no gun that accurate, but that Davy couldn't even see a twig at that distance.

Anyway, Davy soon was allowed to go hunting alone, and Uncle Roarious and other doubters got fair samples of Davy Crockett's "real shooting."

According to legend, folks of the Rogersville countryside, for instance, were in on an exhibition of the Crockett skill when a gigantic cougar was stalking the area, terrorizing the neighborhood. They also got a demonstration of what some called

Kentucky rifle used by Crockett was loaded by pouring loose powder down barrel, inserting patched bullet and then priming with powder horn.





Running for Congress, Davy stumped through Tennessee wearing his hunting clothes and often carrying Betsey on his shoulders while making his speeches.



Even when a Washington politician, Crockett loved to get out for hunting. He donned buckskin shirt and breeches and his coonskin cap to chase buffalo herds through western plains.

"freakish" luck. Striding through the woods, Davy met the cougar and promptly loaded old Betsey with a double charge of powder. When he pulled the trigger, there was a "roar like thunder." The recoil from the double charge sent Davy flying, head over heels, into the river. But the bullet found its mark, hit the cougar, knocked him over and bounced him up into the air. The bullet went through a covey of quail, bounced back off a tree and hit some squirrels. Having fired one shot, Davy went home, wet to the skin, but loaded down with the cougar, quail and squirrels.

When Davy was 18, he bagged an-

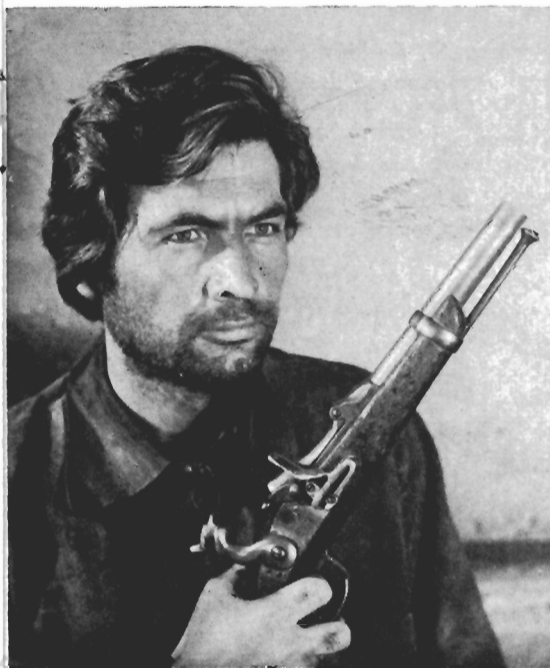
other type of quarry. She was a pretty girl named Polly Findlay. With Polly, Crockett settled down to a life of farming. Davy's mother and father, John and Rebecca, had farmed their own land with distinguished lack of success. It wasn't long before Davy made it obvious that he had inherited their capacity for failure to bring forth revenue from the soil. He loved Polly and the three children who were born to them. But he loved his rifle more and when the Creek War erupted in 1813, Davy shouldered "Betsey" and went off to seek fame and fortune under the gallant Andrew Jackson.

Jackson appreciated Davy's manly

skills—but he too had to be shown. The two warriors got into heated discussions about who was the better marksman, the story goes. Crockett challenged Andy to a shooting match to settle the argument. Before a crowd of breathless spectators, divided as to rooting loyalty, the contenders began by shooting apples off each other's heads. This was simple for both of them. They decided to try peaches. Plums came next and then they got down to cherries. By this time, probably reluctant to engage in a mutual suicide pact, the opponents respectfully agreed to call it a draw.

Back home, (Continued on page 45)

Fess Parker plays role of Crockett in popular Disneyland television show.



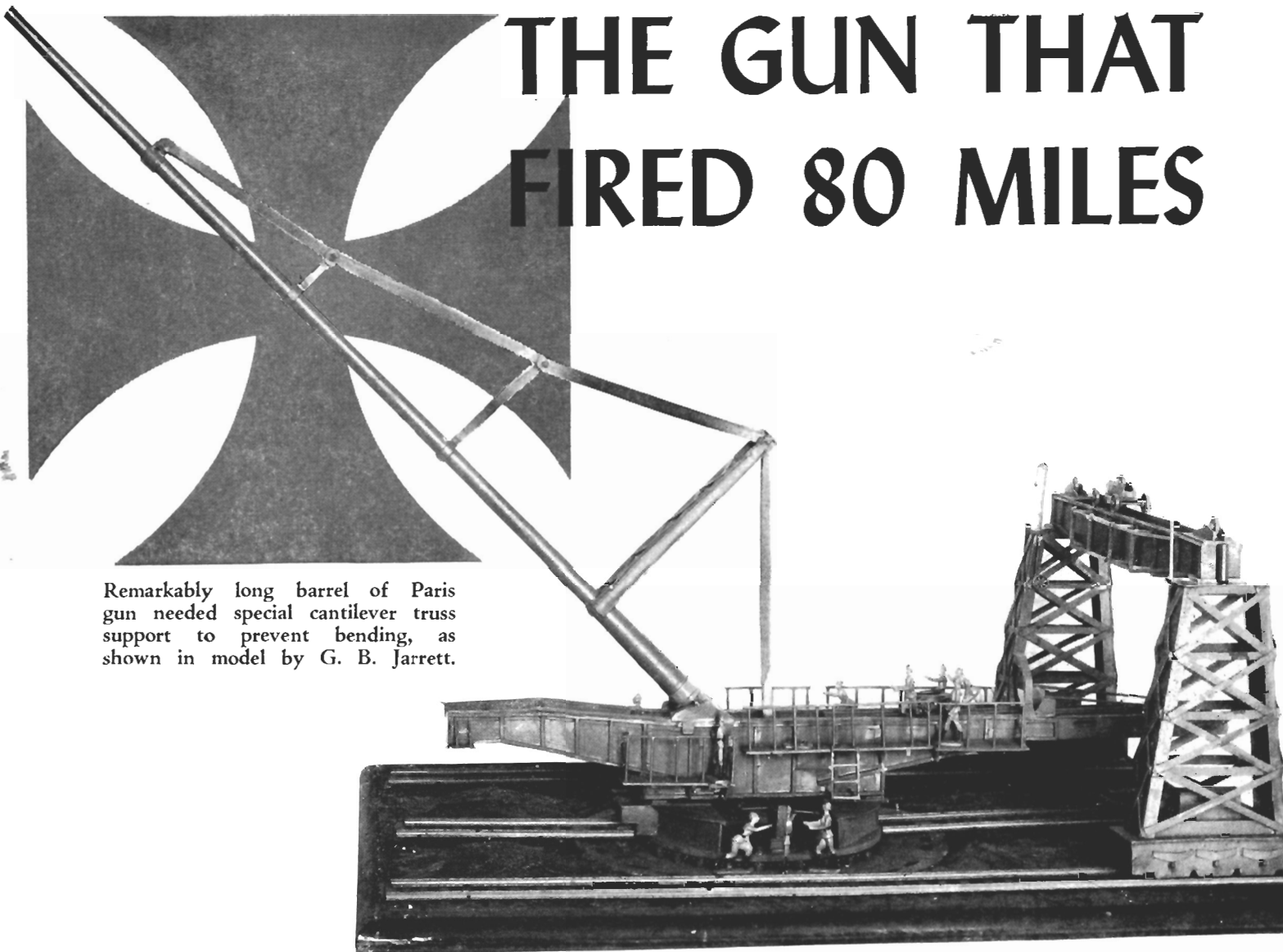
Real Crockett portrayed in painting was shown as a dignified politician.



George Montgomery played Crockett in a picture called "Indian Scout."



THE GUN THAT FIRED 80 MILES



Remarkably long barrel of Paris gun needed special cantilever truss support to prevent bending, as shown in model by G. B. Jarrett.

**DESIGN OF MONSTER CANNON USED BY GERMANS TO FIRE ON PARIS WAS
INSPIRED BY LITERARY INVENTION OF FRENCH AUTHOR JULES VERNE**

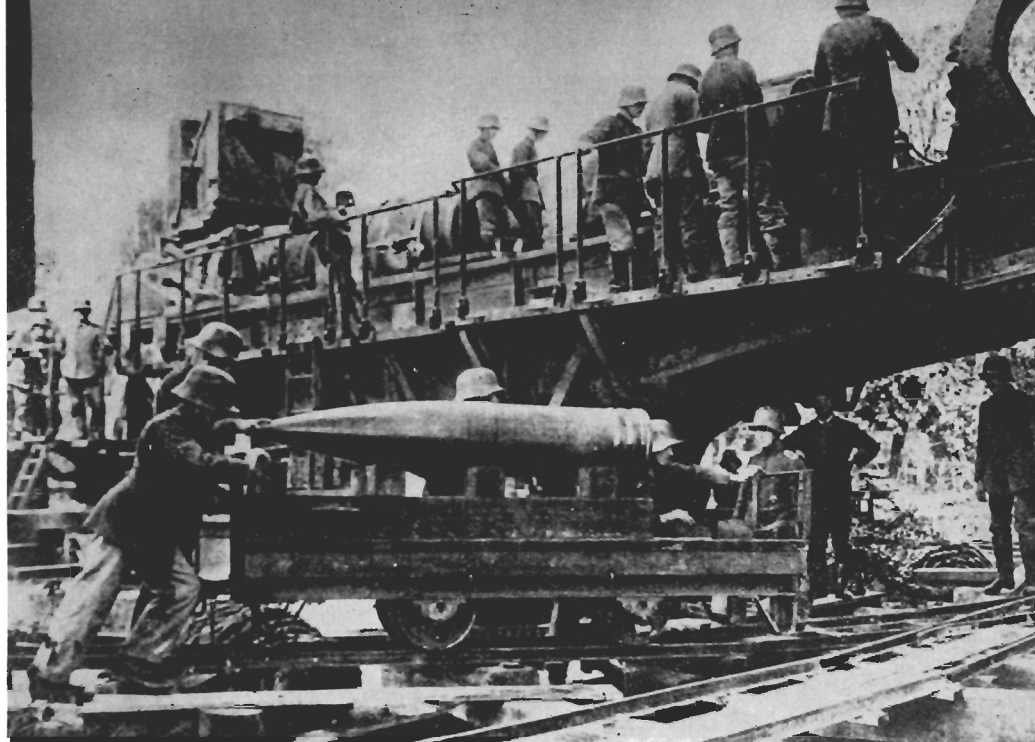
By HARVEY BRANDT

PARISIANS on the morning of March 23, 1918, were already awake when the first shell fell. Notoriously early risers, many Frenchmen were going to work. By 7 A.M. the newspapers had brought them the latest news of the great German offensive opened two days before at Amiens. There was an undercurrent of apprehension, for the Huns' goal was Paris, but the Allies were expected to hold the line. Memories of 1870, when Germans marched triumphant down the Champs Elysees, were faint in the past. The sporadic Zeppelin bombing raids while annoying were not too important. Paris had not felt the thunder of enemy guns for a generation. Then at 7:15 A.M. on that 1918 day "The City of Light" was shaken by an explosion of "something" that fell in the 19th *arrondissement* in the northeast corner of the city.

The explosion was so loud it could be heard all over Paris. The city was under bombardment from some force

... mysterious, terrifying. No airships, Zeppelins or balloons had created such unease among the people. In a 15-minute cadence, more explosions occurred: on the Rue Charles V, on the Boulevard Strasbourg near the Gare de l'Est.

Within hours of the first explosion, news of the bombardment had been telegraphed throughout France. People in amazement learned that no airship had been spotted—the bombing was from a vast height. No one could have been blamed had he mused on the storybook fantasies of author Jules Verne, that remarkable Frenchman who "invented" radio and television, wonderful aircraft and submarines years before science caught up to him. The design of the gun which shelled Paris might be attributed to his inspiration, for one of his inventions remarkably foretold it. And gun it was, a monster cannon capable of hurling its projectiles the incredible distance of 80 miles!



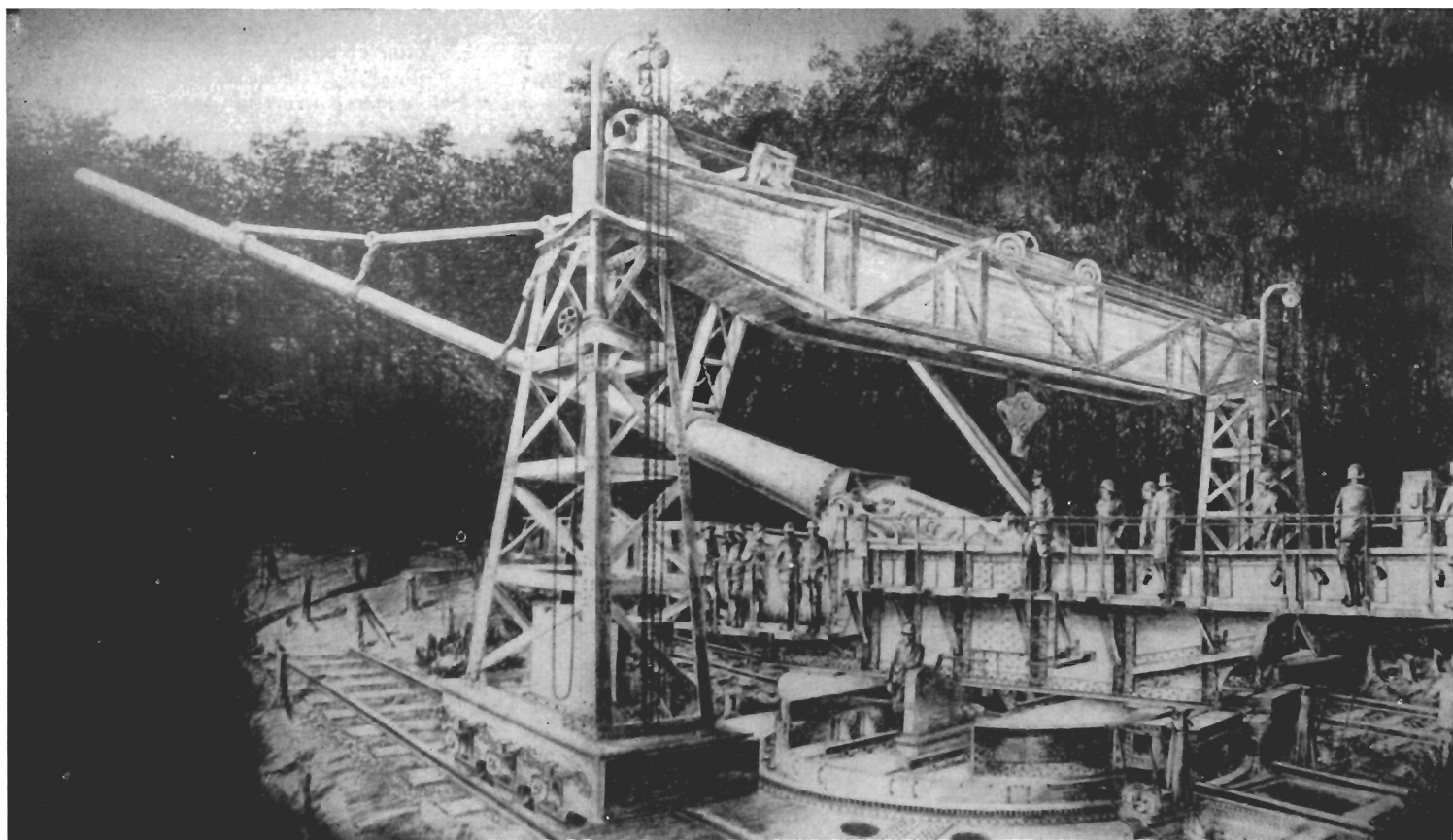
Naval or railway rifle of 38cm caliber was used as basis for Paris gun. Old newspaper photos erroneously labeled "Big Bertha" served to show Krupp sliding breech mechanism, railroad trucks for ammo and loading crane. Huge counterweight blocks were needed to assist elevation gearing in training huge gun on target.

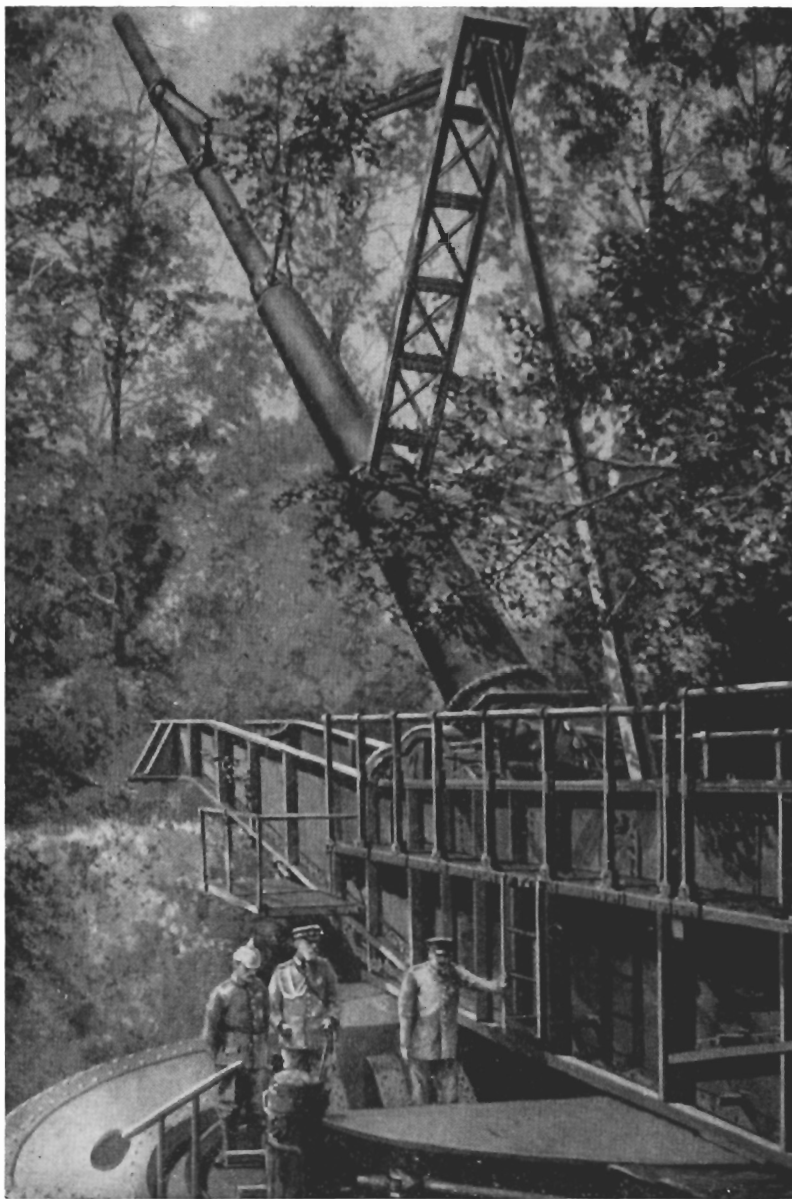
Twenty-one shells struck by evening of the first day, in a regular pattern over the city. Fragments indicated the projectiles to be cannon shells, and the ordnance officers at Tours calculated the weapon had a muzzle velocity of 4500 feet per second and was firing a range of 68.8 miles, immediately within the German front lines.

The "how" of this accomplishment was the cause of much speculation. With a gun barrel of sufficient length, and a powder burning slowly enough, the necessary muzzle velocity might be attained. That no such velocities had

even been attained in small caliber projectiles, let alone in a heavy shell of nearly 10 inches diameter weighing over 260 pounds, made this even more astonishing. Newspapers suggested that the shells finally arriving in Paris had actually been "shot" from larger shells, which had been projected to a great height somewhat like the WAC "Corporal" rockets of today. Other writers scared the populace with tales of German great guns secreted near the Paris city limits, in quarries or forests. All these might have been true, but the actual truth is straight out of Jules Verne!

Artist's conception of emplaced Paris gun pictures it being depressed for loading, with gantry crane moved up.





Propaganda painting depicting the Kaiser, Crown Prince and General Ludendorff beside Paris gun was supposed to boost morale.

Verne was a competent mathematician among his other talents. A remarkable thing about his works has been the accuracy of the figures. The "Nautilus" of Captain Nemo, in his famous story, "20,000 Leagues under the Sea," has come alive today not only in the Walt Disney movie but in the U.S.S. Nautilus, the world's second atomic submarine; Verne's brainchild was the first! In World War I, Germany, traditional enemy of France, discovered what Verne had written about a generation before. Verne's description of a long range gun was essentially like the later German design.

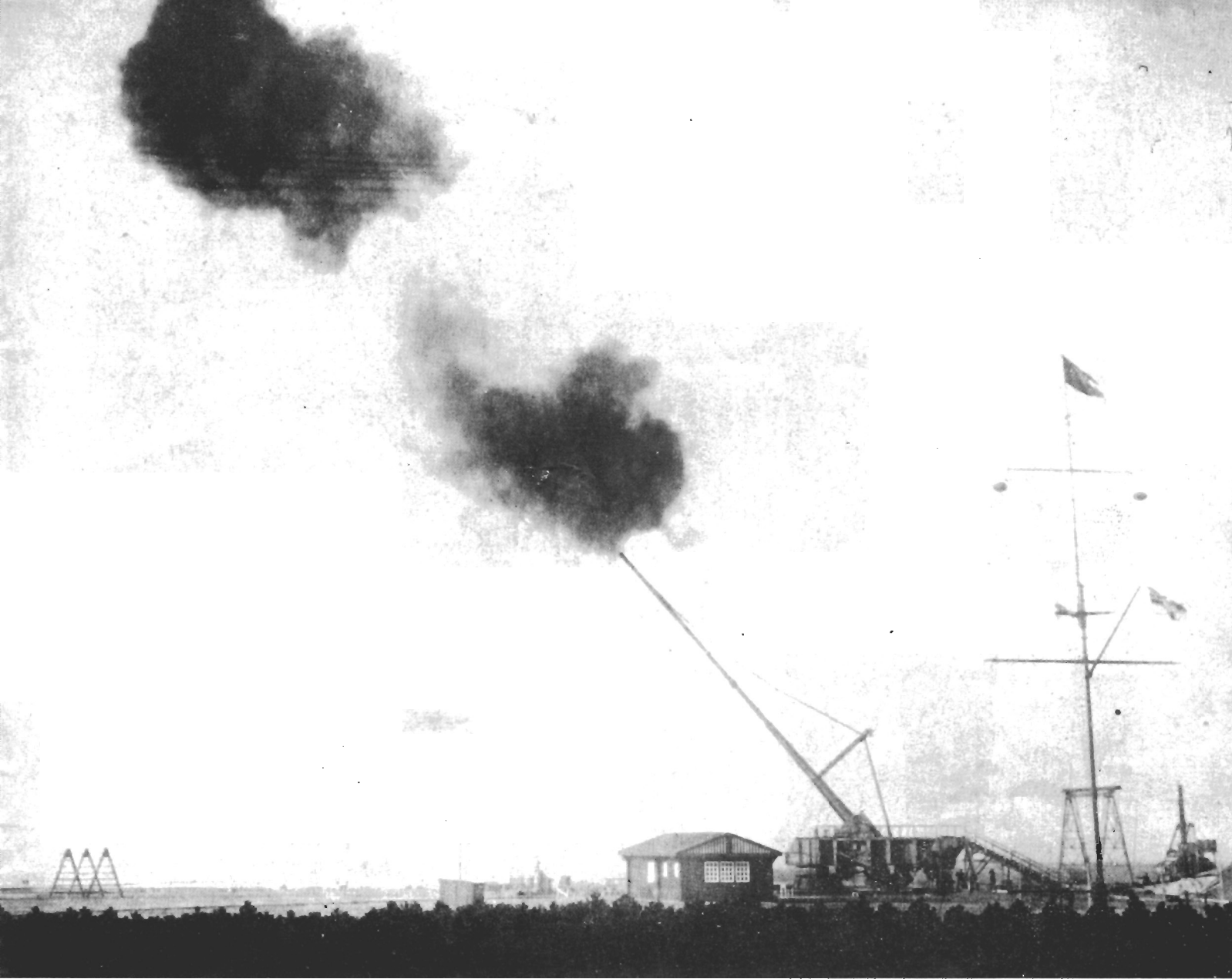
In his story "From the Earth to the Moon," fantasy-fiction writer Verne was confronted with a problem in ballistics to which there was no solution. Nobody before had worked out the mathematics of firing a shot at sufficient velocity to escape from the earth's gravitational pull, but Verne went to work.

His fanciful association named "The Baltimore Gun Club" proposed to shoot a projectile of 108" diameter from a gun sunk in the Florida sands, to the surface of the moon. An initial velocity of 12,000 yards a second was to be attained by the explosion of 400,000 pounds of nitro-cotton at the bottom of a 900-foot-long gun tube. His velocity of 7 miles a second is the "velocity of escape" as figured by engineers today!

Assuming that the explosive would give to the shot an acceleration sufficient to reach that velocity at the muzzle, the prodigious range of over a quarter million miles would have been possible.

"Big Bertha" was actually a 42cm howitzer Krupp built for short range fortification shelling. Its high-angle fire pierced bunker tops.





One of the original Paris guns fires test shots at the Krupp proving grounds. Double smoke puffs may indicate that two different powders were used to get sustained push with low peak pressures for high velocity.

There are some coincidences between Verne's gun and the Paris gun which may not have been entirely accidental. With a bore diameter of nine feet, Verne's gun was exactly 100 calibers long. Sir Alfred Nobel in 1892 had made a high-velocity gun of 6" bore, with a barrel 100 calibers long. Also in 1892, French ordnancemen had constructed a 10cm. gun of 80 calibers, while the actual gun which bombarded Paris was of a ratio of 100 calibers, though the total tube length was somewhat longer. Evidently a ratio of about 100 calibers proved to be the correct length of barrel for extreme range, years after Verne's calculations had been published! It remained for the Germans to put these figures into effect. Oddly enough the German gun that shelled Paris was used in their offensive

that began at Amiens, the small French town where author Jules Verne died 13 years earlier!

The gun—or really “guns,” for there were seven used in the war, with three more under construction at Skoda—was built from ordinary worn-out 38cm (15-inch) 54-caliber (56 feet long) naval guns. The converted Paris gun type was in two parts. The main section was 30 meters or 98.5 feet long, while the forward section increased this by 6 meters or about 20 feet—a total tube length of 118.2 feet. About fifty feet of this at the breech was the original 38cm gun.

The actual gun tube was of 21cm caliber, although successive firings and re-riflings in some of the weapons increased this to 24cm (9.3 in.) and then 26cm (9.93 in.). The front 6-meter sec-

tion was smooth bore, and was fastened on by a bolted collar when the gun was erected in the field. The total weight of the original gun was 152,550 lbs., and that of the reconstructed gun, 318,000 lbs. The powder chamber alone was about ten feet long, holding about 350 pounds of powder.

Since 1914, Paris had been subjected to sporadic Zeppelin and bombing plane raids. The 100 and 300 kilo aircraft bombs were effective, though the vast fleets of planes used during World War II for pattern-bombing a city were undreamed of then. War in the air had hardly progressed from the primitive stages of dropping a primed hand-grenade from one plane into the cockpit of another. When the big German shells started dropping on Paris, there was an ominous regu- *(Continued on page 42)*



HUNTING IN THE HEAT

Canteen and Savage 99 are indispensable items for California's 100-in-the-shade deer season.

EASTERNERS HUNT DEER WHEN SNOW IS ON GROUND, BUT IN SUNNY CALIFORNIA, HUNTING'S AT ITS BEST ON HOTTEST DAYS OF LATE AUGUST

By WILLIAM CURTIS

THE barrel of my unfired .300 Savage burned like it had been through a hundred rounds of rapid fire. Already the heat was mounting and the steel soaked up the sun. In another hour the canyon would be like an oven. The steep brushy canyon walls with their shale slides would serve as reflectors, concentrating and focusing the heat. Something gleamed in the brush through the heat waves, across the great canyon—it could be the coat of a deer.

I took a long gander with my 6 x 30 glasses. "It's a deer, a buck, I think."

My "pardner," Bob, suggested we get a little closer. "I can't see horns yet, and if I have to hike across that ditch, I want to know definitely it's after a legal buck!"

We worked down the ridge below us. Reaching a point 200 yards below our original stand, we once more glassed the deer.

"It's a pretty good buck," said Bob. "But we'll never get close enough for a decent shot. He's looking right at us now."

"I know a trick that's put venison in the pot before," I replied. "We'll give it a whirl with this one."

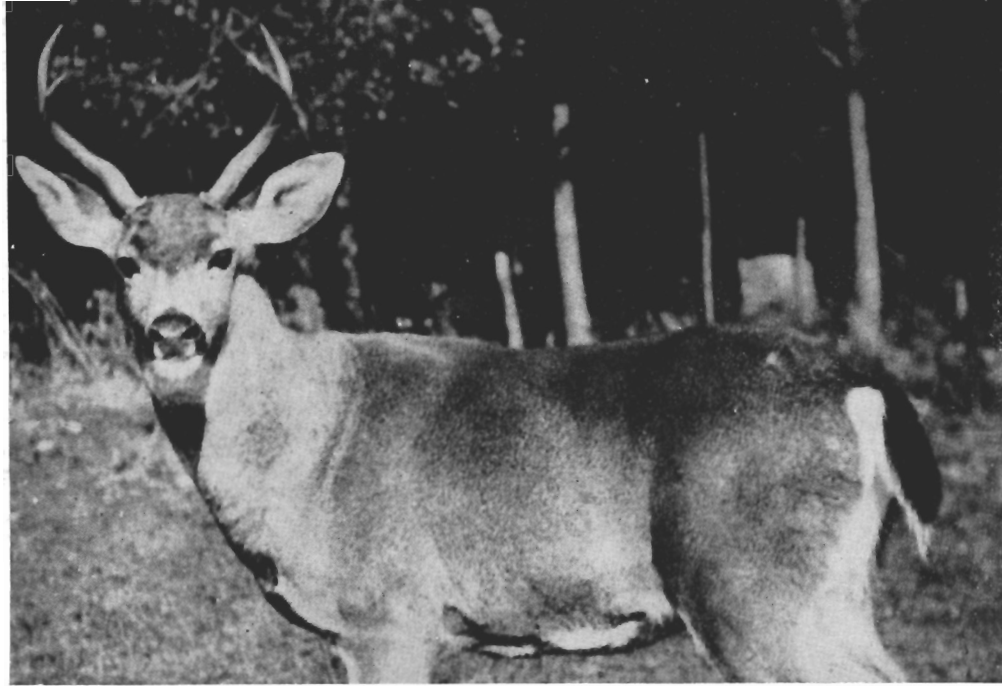
The buck was standing motionless in a heavy patch of chimiso brush. A rocky bench stretched out below the deer, and before we could get much closer the critter would be blotted out from our view. We moved down as low as we dared without losing sight of the black-tailed buck.

The buck was still far out of range, and I'd hunted long enough to know that our quarry would vanish as soon as we both passed from his view. There was no other angle from which we could approach any closer.

"This may not work," I said, mopping sweat and itchy, dry chimiso blossoms from my neck and face. "It's our only chance, though. I'll sit here in plain sight. The buck will watch me and maybe you can cross that hogback splicing these canyon walls, and work up that gully just to the right of the deer. Then bench will keep the old boy from seeing you until you're about 100 yards away."

"Wish me luck," whispered Bob, as he took a couple swallows from his canteen, and started on the stalk.

I watched the deer through the binoculars. A good 3-pointer (western count) I guessed. His coat was turning slate blue; by the end of August it would have been a solid gray-blue. His gaze was riveted unwaveringly on me, but, so far, he showed no sign of vamoosing.



Columbian black-tail deer hunted during late Summer dresses out to an average of 85 pounds. Anything over 100 is a good one, tops is 175 pounds.

Bob was soon climbing up the opposite side of the canyon, pausing frequently to catch his wind and wipe the perspiration out of his eyes. He was almost up to the bench, crawling along a rocky wash. Suddenly, the deer twitched his ears and stomped the ground with a front foot. I knew those signals well! Our quarry had either heard or winded my companion, and was about to spook. I waved my arm slowly, hoping the buck wouldn't bolt.

Bob caught my warning and eased up to a standing position. I had a ringside seat. The buck made one jump when a .30-40 Silvertip slug ripped into his chest cavity and stacked him up. Now the work began. Bob had the critter gutted by the time I arrived on the scene, but I know it was going to be a long haul back to the pickup with the mercury hovering at 100 degrees or more. And I also knew that we never would have killed the deer if one of us

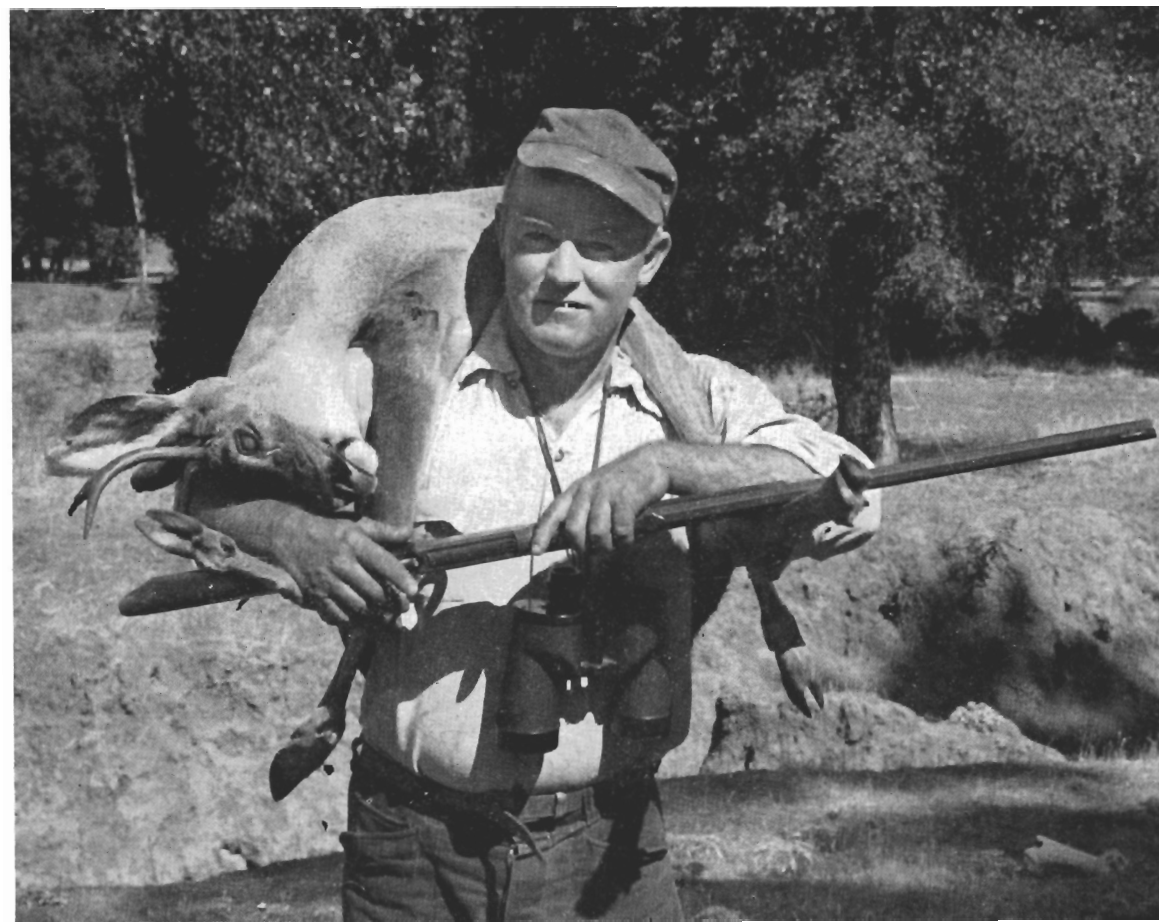
had failed to remain in the open for a decoy.

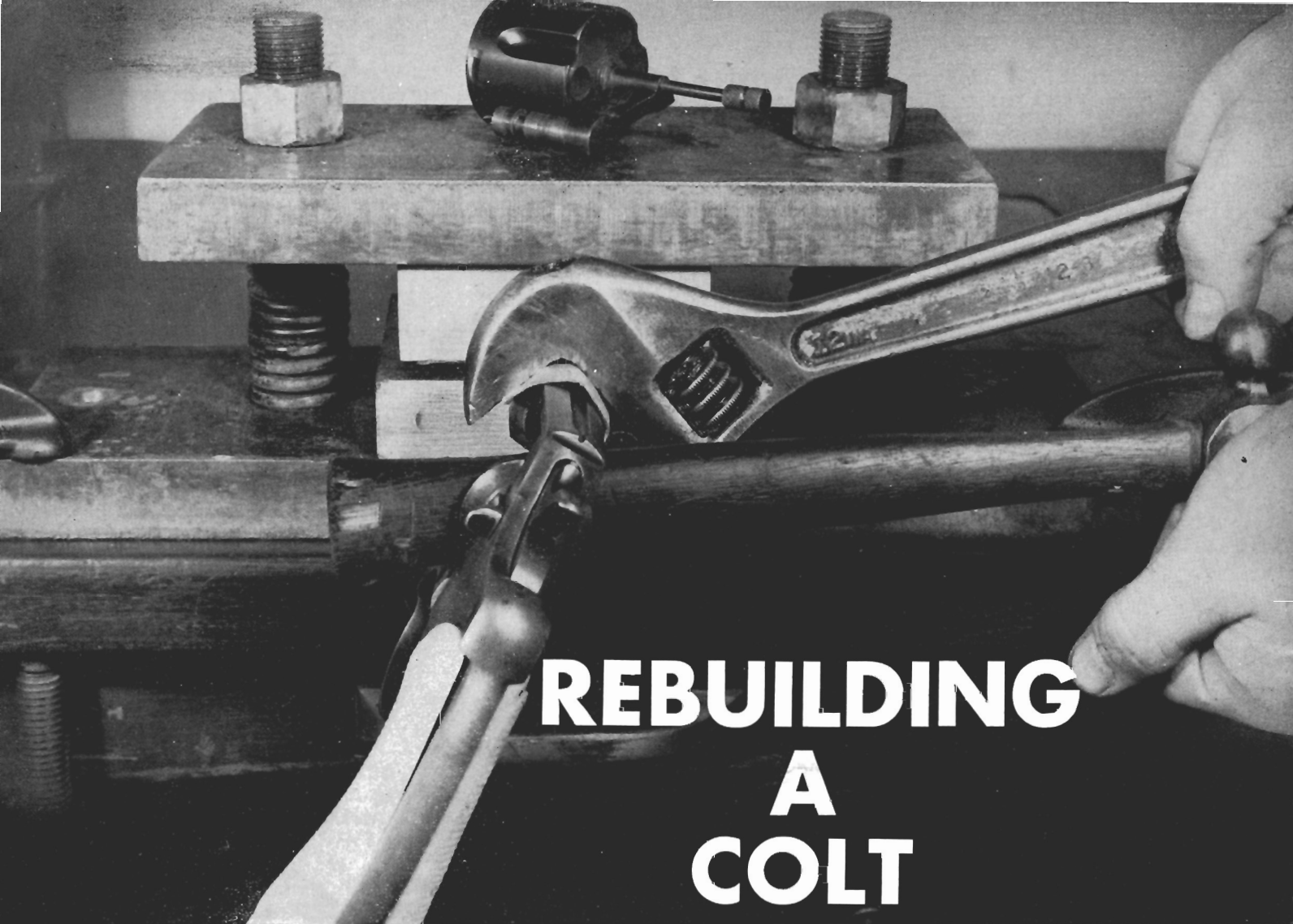
What a difference from most deer hunting! We were in the foothills of the coast range of California. The season opens during the first week of August and extends until mid-September. This is the hot season of the year. I've sweated out some Augusts in this section when the temperature averaged close to 95 degrees for the entire month, and I've seen it 90 degrees at 6 o'clock in the morning.

Why is the California season so early, you wonder? It has to be, if the hunter wants good meat. The bucks usually start to "run" by the first of September, and are falling off badly by the end of the month. Climate has a lot to do with it. The season in Colorado, for instance, is several months later, while the colder the climate, the later the season. November-December periods are usual for eastern and northern states.

Columbian black-tailed deer roam in the northern section of the area which is opened for early hunting, and Southern black-tails range in the southern portion. These black-tails, hunted during August, are generally small and few trophy racks are taken. Nearly twice as many deer, including the Rocky Mountain and California mule deer, are taken in the September or Sierra season in Cali- (Continued on page 44)

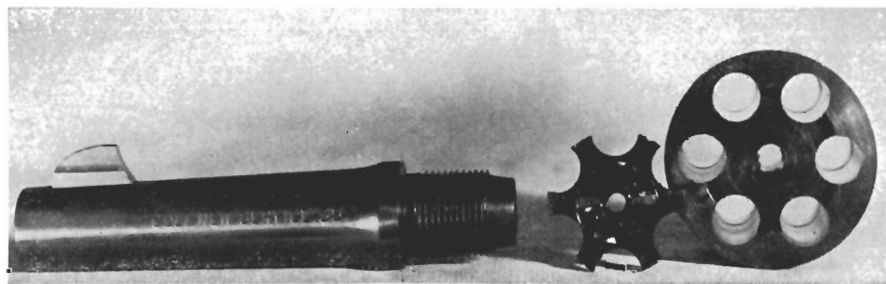
Author William Curtis shows vest carry with deer's legs interlocked. Comfortable carry for hot weather, this method can be dangerous unless red cloth is used to cover carcass and warn other hunters not to blaze away.





REBUILDING A COLT

**AMATEUR GUNSMITH
CAN REBARREL PISTOL
USING SIMPLE TOOLS**



New barrel, ratchet, cylinder restore Colt to fine shooting order.

By CLAUDE SONDAY

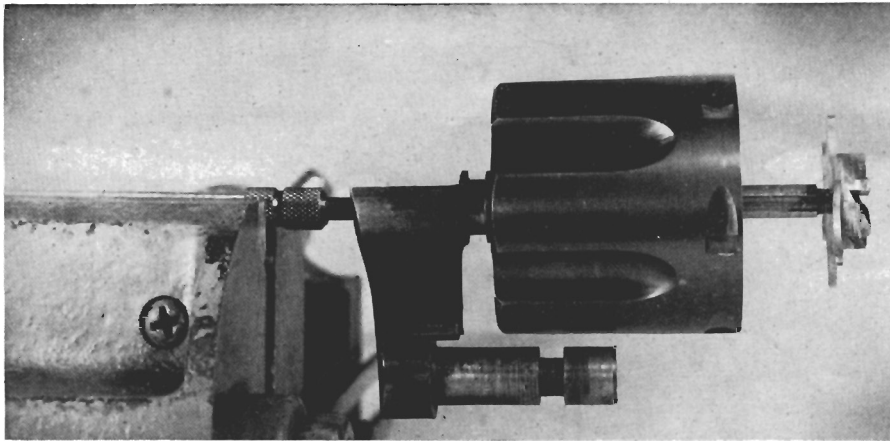
MODERN REVOLVERS are so strongly built that in normal service, about the only parts which can be permanently damaged are those involved in actual firing: the barrel and the cylinder. A rusted barrel will lead and shoot inaccurately, while a chamber which is pitted will cause hard extraction, and may be dangerous in a tight spot, or at least, inconvenient when on the range. Rebuilding a pistol when it gets into this condition is not as difficult as it might seem.

Because the Colt series of revolvers are alike, following instructions for rebarreling is relatively easy. If used

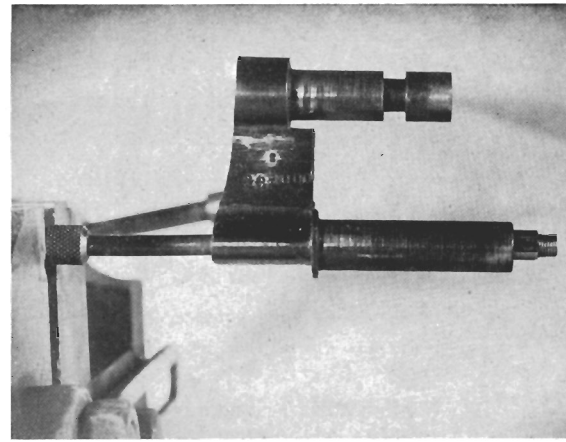
with good sense and caution, these instructions will return to use an otherwise unserviceable but basically sound gun.

The screw on the Colt frame right side releases the crane lock. After unscrewing, be sure it pulls out the crane lock, or if of the later type, that the cap screw, spring and plunger are not lost. Then by swinging the cylinder out, the whole assembly can be pulled free. Next step is removing the barrel.

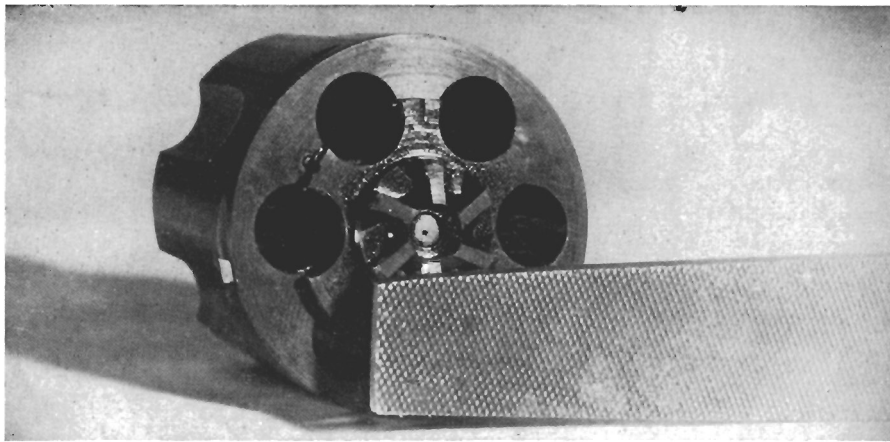
Special wrenches are used at the factory to avoid straining the frame, or scarring the barrel's finish. Tools easily



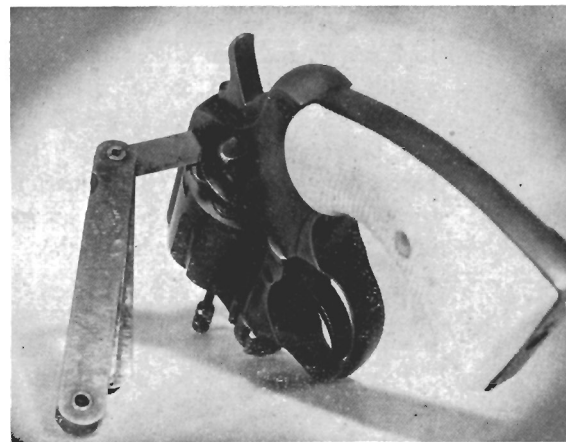
Ejector (far right) unscrews from rod, allows cylinder to slide off crane.



Colt crane is stripped for new cylinder.



Filing ratchet is sometimes necessary to get correct cylinder headspacing.



Check headspace with feeler gauge.

Barrel end must be filed carefully (to avoid rounding edge). creating proper cylinder front clearance of about .003".

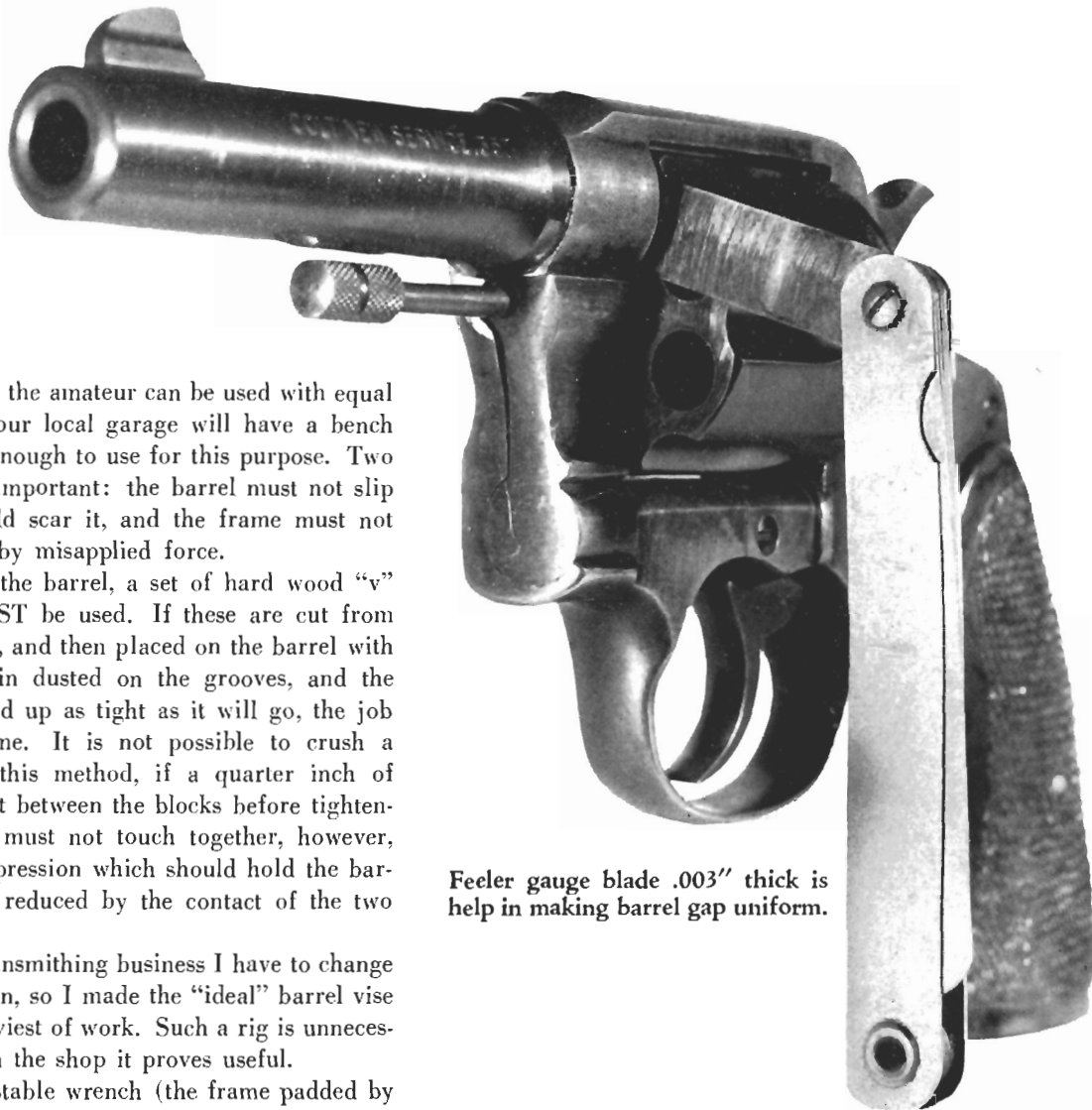


available to the amateur can be used with equal success. Your local garage will have a bench vise large enough to use for this purpose. Two things are important: the barrel must not slip which would scar it, and the frame must not be sprung by misapplied force.

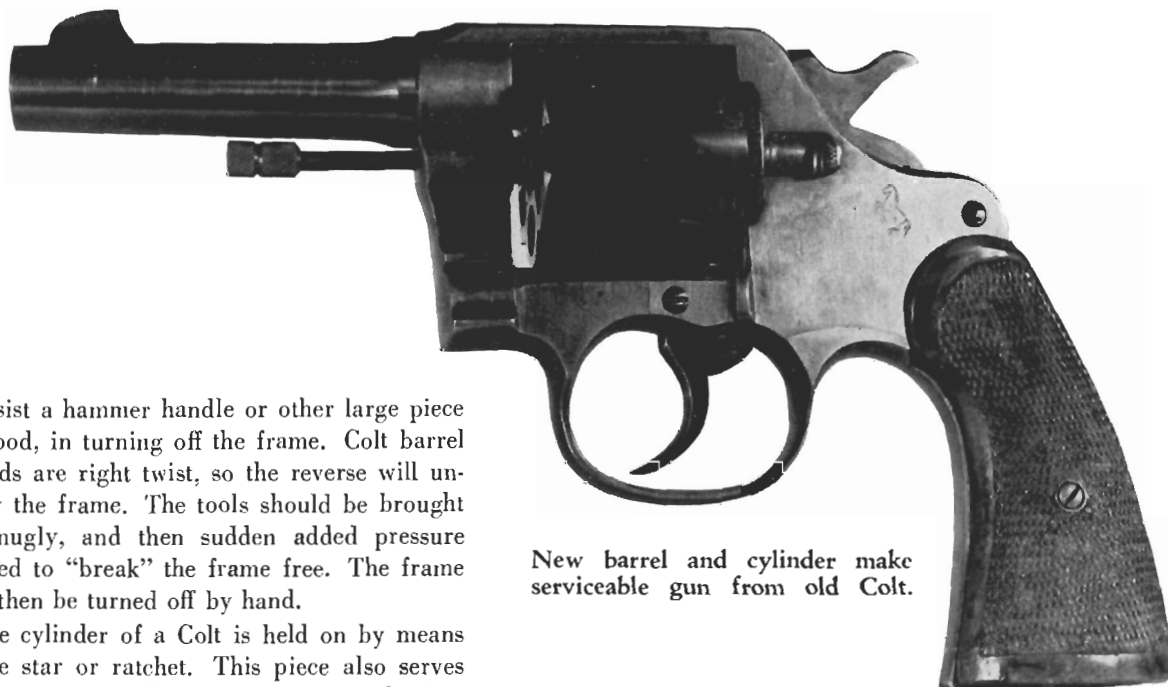
To hold the barrel, a set of hard wood "v" blocks MUST be used. If these are cut from rock maple, and then placed on the barrel with a little rosin dusted on the grooves, and the vise snugged up as tight as it will go, the job will be done. It is not possible to crush a barrel by this method, if a quarter inch of space is left between the blocks before tightening. They must not touch together, however, or the compression which should hold the barrel will be reduced by the contact of the two blocks.

In my gunsmithing business I have to change barrels often, so I made the "ideal" barrel vise for the heaviest of work. Such a rig is unnecessary, but in the shop it proves useful.

An adjustable wrench (the frame padded by a strip of leather or soft lead) should be used



Feeler gauge blade .003" thick is help in making barrel gap uniform.



New barrel and cylinder make serviceable gun from old Colt.

to assist a hammer handle or other large piece of wood, in turning off the frame. Colt barrel threads are right twist, so the reverse will unscrew the frame. The tools should be brought up snugly, and then sudden added pressure applied to "break" the frame free. The frame may then be turned off by hand.

The cylinder of a Colt is held on by means of the star or ratchet. This piece also serves as the extractor. New cylinders from the factory have ratchets (Continued on page 49)



By STUART MILLER

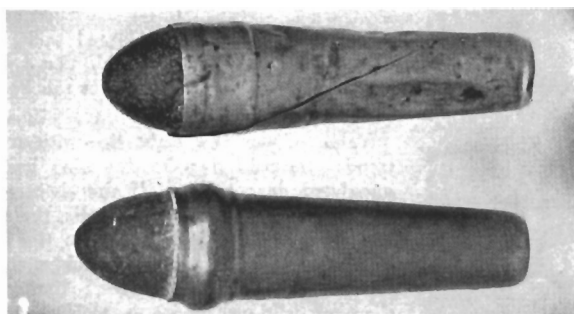
Powder Load For BAT Rifle

IN DEVELOPING the army's new .50 caliber BAT rifle, the conventional .50 caliber Browning MG cartridge was used with a lighter powder load that was necessary for the gun. When the proper ballistics were finally developed, the cartridge case was shortened for the lighter load. The final result—and the current cartridge—was actually the .50 Browning case but shortened about $\frac{7}{8}$ of an inch. This has two advantages: it simplifies the manufacture of ammunition and at the same time eliminates the possibility of some GI stuffing a heavy loaded .50 caliber machine gun cartridge into the weapon.

Because most of their use is for spotting, I understand that almost all of these cartridges contain a tracer element. However, instead of the traditional red tip tracer marking, these tracers have an olive drab painted tip. They are interesting cartridges and I look forward to the time when they start showing up in the collecting field.

Rare Foil Burnside

The coiled brass Burnside is the best cartridge that I have been able to add to my collection this past year. Poultney's Patent cartridge for the Burnside carbine is



mentioned in the Frankford Arsenal collection catalog. Their specimen was described as a foil inside paper case, with 40 grains powder and a 370 grain bullet. As you will see in the photo, my cartridge seems to be an earlier type with just the brass foil case. There is no belt around the case mouth containing the lubrication, as is found in the traditional Burnside. This should place the date of manufacture before 1860, when the patent on that feature was issued.

Poultney foil and paper wrapped cartridges are in several calibers for Civil War carbines. The most common seems to be the .50 Gallagher carbine, the .50 Smith carbine, the .50 Maynard, and finally the .54 Burnside, supposed to be the rarest of the lot of Poultney's.

That Frankford arsenal collection really must have been something. Shown at the Centennial Exhibition at Philadelphia in 1876, it was part of the ordnance department exhibit. There were 467 cartridges listed, mostly military and experimentals—such gems as: a set of Hazzard compressed powder cartridges ranging from the .69 caliber

musket down through the Requa battery gun to the .36 Colt Navy. There were tin cartridges, soldered foil cartridges, and guncotton cartridges; .36 and .44 caliber teat fires; .50 round ball combustible for Savage pistols; and Greene, Shaler, Gardner and Charwich musket cartridges.

New Name For T-44 Cartridge

I see they have tacked another name onto the Army's cartridge for the new T-44 rifle: "Cartridge, Ball, NATO rifle caliber 7.62." Nomenclature on this set of cartridges has been confusing for a long time. Back in the middle '40s when the cartridge was first worked on, it was the



short case, shown on the right. This was the original T-65. Then a couple of years later they lengthened the neck of the case, and the ball cartridge became the T-104. A couple of years more, and the neck stretched out a little farther to the longest and current length, and it became ball cartridge T-65 again, but with the T-65 E 3 case . . . more confusion. This last means that the final case was the third modification of the T-65 case. Before this 7.62 NATO designation was assigned, the ball cartridge was generally referred to as the ".30 Caliber Light Rifle T-65".

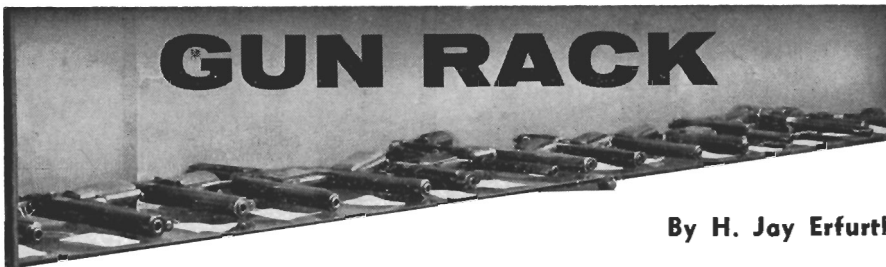
These cartridges are going to turn up for collectors, and it's nice to be able to recognize them. You will note from the photo that all three (shown with a 30-06 for comparison) are the same overall length, despite the three different case lengths. The short case cartridges are usually marked FA 45 or 45, the medium length case FA 48 or 49, and the long case, or current cartridge FA 49 on to date. A sporting version of this cartridge is called the "308 Winchester," and the latest NATO name is "M61, 7.62 mm (Cal. 30)!"

Toothpick Stevens

One of the most colorful sets of U.S. sporting rifle cartridges — especially to the beginning collector — is the "Toothpick Stevens." These long, slender, straight tapered shells enjoyed a short period of popularity around the turn of the century.

(Continued on page 43)

GUN RACK



By H. Jay Erfurth

No Feeding Problems

REMINGTON'S newest slide action .22, the Model 572 Fieldmaster, is designed in the streamlined patterns of the rest of the Remington line, but this little pop gun is smaller in the breech and with a man-sized stock all 'round. Of course, the butt can be shortened for young shooters.

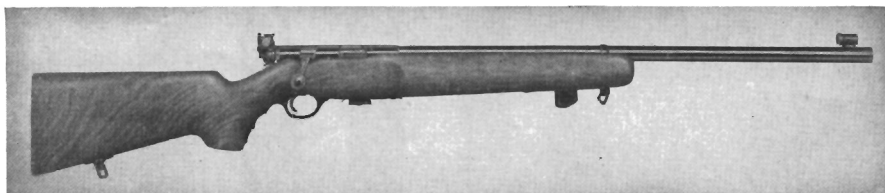
Feeding problems inherent with older types of slide .22's have been eliminated by the use of a breech block and extractor system of new design. The breech block, instead of being a rugged, square piece of metal which involves complicated slide ways in the frame and danger of misalignment

This allows rapid action with complete safety.

By mistake, Remington sent me an experimental gun instead of the usual test gun from a production run. Frantically they wired to get the experimental gun back. I returned it, of course, but not before I had run about four boxes of Kleanbores through it. They all went through the back and came out the front nicely. After banging at tin cans for a while, I decided to shoot offhand at a pistol target. I used a .45 bullet hole at 50 feet as a point of aim. My first few shots struck low and left, and then as I fired shot after shot, I realized that



Remington's Model 572 Fieldmaster



Mossberg's Model 144LS .22 Rifle



Mossberg's No. 195 Shotgun

causing a failure to feed, is now a slim piece of rod, the area of which is about the same as the .22 cartridge case. The small .22 cartridges, instead of being tipped up more or less in line with the breech bolt, now are picked up directly from a curved trough which is the breech end of the magazine tube. The sum of these changes is a jam-proof straight line feed.

With the magazine empty, the construction permits single loading. Ordinarily a cartridge dropped into the side port of a pump .22 manages to get caught in the maze of mechanism. Remington's design prevents this, avoiding the need to load the magazine repeatedly in target practice or when instructing beginners. The short, smooth slide action is linked to a disconnector, which prevents the gun from firing unless the bolt is entirely closed. In fact, the slide must be pushed $\frac{1}{4}$ of an inch beyond "bolt closed" position, before the trigger can be pressed.

they were simply making one hole a little bigger, but that was all! Not up to the shooting possible with Remington's match rifle, the M37 Rangemaster, but still very nice.

The production gun received and shot subsequently upheld the promise of the experimental piece. With a scope fitted—the receiver has the "tip-off" top grooves—it should be a fine woods companion or crow and chuck getter. Weight is negligible, about $5\frac{1}{2}$ pounds. Price, standard grade, \$49.95.

Mossberg Beginner Rifle

MOSSBERG's new Model 144LS .22 rifle offers beginning shooting enthusiasts a target-grade rifle at a moderate price. Sights are the special Lyman 57MS with the 17A for the front. Together with the heavy 26" semi-floating barrel and full walnut stock with cheekpiece, they make a good, inexpensive target shooting combination. At

eight pounds, the 144LS is not too heavy for carrying afield, either, for plinking and squirrels. Price, including the Lyman sights, is \$39.95.

New 12 Gauge Shotgun

MOSSBERG's No. 195 bolt action shotgun is the first 12-gauge gun put out by them. Now the line includes 12, 16, 20 and 410 gauges. Clip magazine holds 2 shots, which with one in the chamber makes it a 3 shot repeater. Mossberg's exclusive C-Lect-Choke, factory installed, gives instant selection of any choke desired. New design of receiver avoids the bulky look of many bolt action shotguns. Price including choke and recoil pad is \$32.95.

Lyman Shotgun Sight

LYMAN'S NEWEST SIGHT is the Model 53 Shotgun Sight, available for Marlin M90; Winchester Models 12, 25, 42 and 50; Remington Models 48 and 870; Savage Models 24, 219, 220, 240, 420, 520, 620, 820, 77; and Ithaca Model 37. While no sight has been announced specifically for the newest Browning two-shot autoloader, one of the



Model 53 Shotgun Sight

others probably can be adapted to it with slight fitting, and it is probable that Lyman will soon have one especially for the Browning.

Value of the new sight lies with recent trends toward slug-shooting in heavily-populated deer country. If the shooter desires to change back to shot shells, the sight slide can be easily removed from the fixed base, as with other Lyman receiver sights, and the base does not obstruct aiming for skeet or wildfowl. Price is \$3.75.

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A SIX-SHOOTER FOR TV COWBOYS

(Continued from page 21)

time, only a few hundred shots from "new," the cylinder bolt limb also broke, freezing the gun. New parts were obtained and installed. The sear broke again. The gun was shipped back for a refund.

In an attempt to get a really good gun, another one was ordered. This was also .45 caliber. The frame inside had a bump which scarred the cylinder blueing, while the cylinder bevel at the front edge actually cut into one of the chambers. This gun, too, was sent back.

Having shot up all my .45 ammunition, I next ordered a .22, serial #2064, with the popular 5½" barrel length and case-hardened frame. A distinct improvement was noticed in this gun, so far as finish went. The grip straps and frame had been polished assembled, which makes for proper frame contours where the grips tie one. The front sight was not simply a plate of sheet metal stuck on to look pretty, but was actually filed down and shaped to allow good shooting at 20 yards with .22LR ammo.

The ejection of fired cases was easy, and by rolling the cylinder past the click and then backing it up a trifle against the pawl, the chambers lined up to permit the ejector rod to enter and push out empties. This little trick, once made a habit, speeds up the operation of this type of gun.

Trigger pull was heavy—probably seven or eight pounds. But it was pretty regular and with a good let-off. Finish on barrel and cylinder was good—the polish of these two parts has always been pretty clean and "crisp." The bad part continued to be the grip straps themselves. They were not forged with the same roundness of original Colt straps—thus the grips appear sloppy in fitting and "effect."

After the first solid firing pin Colt hammers had been used up in Great Western frames, an improved floating firing pin made by the Christy Gun Works was used. This meant that the hammer had to be notched like the popular Christy SAA modifications.

In my .22, the pin bushing became burred from poor fitting of the hammer, and the firing pin blow became weakened, resulting in misfires. The bushing was easily removed by a split screwdriver; a file stroke or two knocked off the burrs and cleaned up the hammer. Several hundred shots were then fired, fanning and aimed shooting, without trouble, and with a lot of fun.

Wilson now makes his own floating firing pin fitted to GW's above #3100, of essentially the same design but to dimensions which now prevent it from shaking loose. Grip straps also have been improved above serial #3000. New dies give the rounded appearance of the original Colt, instead of the "flat" look. This oddly parallels Sam Colt's own designs of a century ago: the Walker and early Dragoon revolvers had a "flat" appearance to the backstrap, while the later No. 2 and No. 3 Model Dragoons showed a rounded improvement.

Since the GW is a rod ejector gun, BB Caps can be used and at 22 feet indoors you can make them touch on the target—if you're steady. Offered in 5½" length only, the .22 being the lowest priced of the series will make it probably the most popular. It goes

"bang," yet can be used almost anywhere. But if you've got to play "Wild Bill" in your garage, shoot into a big sandbag and away from any houses or people . . . better yet, wait till you can get out into the country to play "cowboy."

There have been several stumbling blocks in the production of the new Frontier. Beryllium alloys proved superior than steels in tests. But the gunsmiths and buying public didn't know that, and complaints were loud. Echoed, there seemed to be more to the defect than really was present. Electric motors running links to cock and fire guns were used by Wilson in fatigue testing. He states that "steel parts after 5,000 movements of the action were badly worn, the trigger showing considerably more wear than the beryllium copper. The bolt broke on several occasions before the full 5,000 movements were complete. Under ordinary usage we have found by tests that after 5,000 movements of the action our beryllium-hand, bolt and trigger are all in reasonably good shape. There have been broken triggers, but we have also broken quite a number of Colt triggers trying them in our guns."

Manufacturing methods have also improved. Barrel blanks are bought from Roy Weatherby ready for outside finishing. Weatherby's experience in making high velocity rifle barrels accounts for the fine quality of the GW barrels, even though to give that extra look of quality, GW barrels are individually lapped with lead slugs and polishing compound.

L. E. Linder, a highly competent engineer who is learning more about guns every day, has been responsible for many subtle improvements which show up in a better product. Frames had been left almost as they came from the moulds, except for polishing and case-hardening, but Linder and Wilson have finally installed an expensive vertical broaching machine to end cylinder fitting difficulties. The broach is dragged through the cylinder hole and shaves the frame inside edges clean and true.

The GW guns have an appearance of having "never been fired" as they come from the box. This is not true. Every gun is test fired at a target with proof and regular loads, from a two-handed rest position. The target is shipped with the gun. But, the cylinders are not blued. Since each part bears the gun number, it is easy to route the cylinders, after cleaning, into the blueing tanks where a hot nitrate process colors them. Then they are returned to the finished guns and wrapped for shipping.

Polishing and blueing are two of the most important of all operations. The finish of any product is important, but the finish on a GW Frontier is especially critical. Inevitably the customer will compare it with the peace-time, depression, solid-gold-dollar-built Colt. At first, the barrels and cylinders were spun well and buffed nicely, but the frames looked terrible. A glossy polish was used, resulting in a gun which had all the appearance of being a genuine Colt after leaving the hands of some butcher rebluer. Polishing was in the wrong direction on grip straps and the whole appearance was bad.

A steady improvement was noticed. The

first step was polishing the frame and straps in an assembled condition, then stripping for further work. This meant that the edges where they met were sharp, not rounded and ugly. All the frames are hardened in a molten cyanide salt bath, which carburizes the surface without embrittling the tough chrome-moly interior of the steel. Since they are polished they take the delicate mottled colors, so prized by Single Action fans, when quenched in water which has air bubbling through it. Following the old Colt style of finish, the combination of blued parts and colored frame makes a very pleasing appearance.

Final inspection and assembly go hand in hand, and the men had to learn from scratch. As a result, many of the guns are fitted so that undue stress is focussed on the cylinder pawl and on the bolt, which makes these parts fail. A groove fillet between the spring leaves of the bolts would prevent fatigue failures here. Filing the backstrap to act as a hammer stop, and then fitting the other parts to time exactly right would be a significant improvement. Wilson is aware of all these things. Recently he obtained a copy of Ordnance Memorandum No. 22 which gives full details of the inspection during the 1870's of the Single Action Army revolver. His own new Frontiers should continue to show improvement.

Wilson is something of an enigma as a person. Quiet and soft-spoken, he is the antithesis of the usual flamboyant California character. Yet with a quiet determination he has pitched in and brought the Single Action to life in his new Frontier. Although Wilson has a private backer, gun entrepreneur Hy Hunter was also of help and encouragement during the early days of the Great Western company. Hunter's own sales firm, American Weapons Corp., is a distributor of the Great Western and Hy has been more than anxious about production, quality, and getting guns out to the market. Gradually gaining momentum, though limiting production to about 250 guns per week, Great Western has been building up an enviable backlog of orders. The temptation to overproduce and have a large amount of money tied up in machines has been resisted. Frontiers are run through the shop in batches, and all frames are numbered consecutively from "1."

Even Colt's is glad to have someone else making these guns, relieving them of the questions which collectors and Single Action fans have raised. Frequently, when Wilson's own suppliers have been short and he needed small parts in a hurry, Colt's has been glad to help him out.

For all the scoffing which has been done about the basic Single Action design, one fact remains above all others. This gun, whether made by Colt or Great Western or others, has "oomph!" Not easily defined, you can only say that the gun looks like a gun, handles and hangs like a gun . . .

Great Western is not content to rest on the curio market which Wilson has captured with the Frontier. A new edition of Frontier lockwork is in the offing. Redesign of small parts will eliminate the minor breakages inherent in the Frontier design. The grip of the Frontier, which has been many times copied but never surpassed, will soon appear on a double action, modern service version of the old design. ©

THE GUN THAT FIRED 80 MILES

(Continued from page 33)

larity with which these "outer space" weapons were arriving and many people left by trains for the south and west. The idea that the Germans were actually shelling the city was a little too much for them.

In 44 days of bombardment, 303 shells fell in the vicinity of Paris, 183 within the city walls.

On the first day, the dispersion along the line of arrival was not too great. Since cannon fire is more or less direct, and except in the barrage is used at predetermined targets, Allied observers were a little puzzled at the German choice of places to shell. Eighteen shells had fallen within the walls, and three outside. Fifteen people were killed and 36 wounded. Since bullets costing few francs would have done equally well what it evidently took a cannon shell to accomplish for the Germans, the economical French were understandably puzzled. One 300-pound cannon shell per person is waging an expensive war. Then the truth dawned: the best accuracy to be expected from the long range gun was to be able to hit the whole city of Paris, not any individual factories or communications centers! Successive days of shelling bore this out.

The bombardment could be divided into three main periods, which seemed to reflect the plans of the large offensives being waged by the Germans. During the first few days, the shelling began between seven and eight in the morning, and continued throughout the day at 15-minute intervals. Later, the shooting did not begin till promptly at 12:40 P.M. Stretching over a period of six months, the guns fired 183 shells which landed within the walls. There were 120 near-misses. A total of 256 people were killed, and 620 wounded during this period. The greatest number killed was on March 29, when one shell hit the keystone of an arch in the Church of St. Gervais and the roof fell in. Many of the shells fell in open streets, and while fragments injured passers-by, the effect was negligible. Some of the projectiles passed through the roofs and exploded inside buildings, causing little damage other than wrecking a floor and putting holes in the ceilings.

The Paris gun ammunition was different from ordinary artillery shells. The ballistic nose, which gave the HE shell an overall length of about 40", has a contour very similar to that of a high velocity spitzer rifle bullet—a ratio of about 7 calibers for the Paris shell.

The terrific acceleration in the bore, necessary to attain a muzzle velocity between 1500 to 1600 meters per second, or approximately 4,800 feet per second, prevented the use of copper rotating bands to spin the shell. Instead, the casing was machined with two belts about it, the maximum outer diameter being the groove diameter of the gun tube. Sixty-four slots were cut in each rotating belt, to accept the rifling and give a steel-on-steel contact in driving the projectile through the bore. Behind each belt was a copper rotating band which only sealed the bore, and did not take any stresses of rotation.

The bursting charge was separated into two compartments, with a base fuse and an extra fuse fitted inside on the separating wall. With

these surefire fuses, not one of the 303 shells fired at Paris failed to detonate.

However, the steel-on-steel contact resulted in some real problems for the ammunition handlers. Each shell bore punch marks which are believed to have been a sort of serial marking, indicating the succession in which each set of shells for each gun was to be fired. Not only were there three basic caliber changes: 21 cms, 24 cms, and 26 cms, but the bore became enlarged from shot to shot, and each projectile was made a little larger to take up the wear and erosion. Army Intelligence reported that one of the guns burst in action, and some believed this might have been caused by firing a projectile too large for the gun tube out of its proper sequence, creating too-high pressures. However, the report of the burst gun has not been substantiated.

The exact type of powder used in the guns was not determined. Burning rate is extremely important, and this can be controlled chemically, by varying the composition of the powder, or mechanically. The burning rate is proportional to the exposed area of the powder "grain." Some types, known as "progressive burning powder," have holes drilled in the "grains" so that the total area exposed to the flame as burning continues will be no less than the original surface, and will sometimes be increased, depending on the type of weapon. This produces lower breech pressures and an average higher pressure along the barrel, caused by the uniformly-accelerated burning speed from the increasing area of the "grain."

Oddly, a powder designed by one of our Allies for an experimental long-range gun used powder in the form of flat strips, like cardboard. This powder, so shaped, would be "degressive burning," with a lowered rate of generation of gases due to the decreased area of the "grain" burning only from its surface. It is possible that the chemistry of the powder resulted in an increased rate of burning proportional to the pressures, so that the degressive tendency was equalized.

The Paris gun powder was not uniform; velocities varied by as much as 300 feet per second. The forces tending to make the shot "ballot" in the rifled bore also created a novel design . . . the 19' smoothbore muzzle section.

As a projectile spins along a rifled bore, it has a tendency to tip sideways. As the shot leaves the muzzle, this tipping or "balloting" immediately makes the shot fly at an angle to the trajectory, an accident known as "yaw." Cannon projectiles may be yawing more than 100 yards from the muzzle, but the spin of the shell about its center gradually reduces this yaw to permit it to fly true. The Paris gun had the smoothbore section to reduce the yawing effect. By being unrifled, the rotational forces which resolved themselves into the yaw were reduced, and the shot left the muzzle more stabilized. For a projectile which was to rise into the stratosphere about 24 miles and travel a horizontal range of 76 miles, the utmost in stability was necessary. Ordinary matters of external ballistics were magnified by the extreme nature of the Paris gun.

A .30/06 bullet fired at about 30° (maxi-

mum small-arms elevation) will travel 4500 yards. This is not the calculated range; it is the actual measured range determined by picking up fired bullets at Daytona Beach and other open testing ranges. But the theoretical range is something else again: nearly 90,000 yards. Of course, little things like gravity, the curvature of the earth, air resistance, and so on, are omitted. But in the mathematics of the Paris gun, such things were important!

The information, which led to the construction of the Paris Guns was accidental, derived from omission of air pressure figures! Some years before the war, Krupp had designed a 240mm long range gun intended to attain about 35,000 yards. When the gun was tested, a surprise was in store for Krupp—and also for an unsuspecting clergyman many miles away. The shell vanished, and a search between muzzle and target failed to discover it, so the test crew just gave up. Soon a policeman in the nearby village reported with indignation that a practice shell (solid projectile, no explosive) had torn down several apple and walnut trees in the parson's backyard . . . a distance of about 53,000 yards, instead of the calculated 35,000. The error had been in the air resistance, which was figured at sea-level pressure in the calculations. Instead as the shell rose in the air to its peak trajectory air resistance significantly diminished.

Krupp's highly-trained brainbusters rejected the suggestion that someone had muffed on a perfectly simple problem in ballistics, but the evidence is there. Nothing else so adequately accounts for the differences in range, and it was evident they had learned the lesson, for the Paris gun was the result.

Because so much of the flight of the projectile was through the rarified upper air, the elevation of the gun was 54°, and it was not designed to fire at any other elevation. As it was necessary to lower the tube to the horizontal for loading, and then raise it again for each shot, an improved type of elevating mechanism was used. Instead of the simple screw elevating devices of ordinary guns, a rack-and-pinion affair was worked out. The rack was moved and the breech of the gun pulled downwards with two heavy connecting rods fixed at the breech rearwards of the trunnions. With several large handles suitable for two men each, it was probable that the eight men needed for elevating could handle the monster gun pretty easily.

German High Command secrecy surrounding the big gun led to one of the great mistakes of the war. Newspaper accounts, usually inaccurate in weapons details, reached new heights of error by running pictures of large rifles titled "Big Bertha," supposed to have been so named after Krupp's daughter, Frau Bertha von Krupp. Actually, the artillery piece described as "Big Bertha" was a 42cm howitzer, firing a high-angle 1800 pound shell 10,250 yards, or about 2 miles. The origin of the name "Big Bertha," applied by British newspapermen first after the war, is obscure. One authority has suggested it was derived from a German expression for "artilleryman" which liberally translated is "one who has served his time with Master Berthold." This harks back to the legend of the medieval monk, Berthold Schwarz, who is credited by the Germans with discovering gunpowder. Supposedly, "Big Bertha" is the

feminine of "Berthold" and means "Master Berthold's biggest daughter."

While this is possible, it is also interesting to note that one of the code designations of the early great howitzers from Krupp was "Beta." If "Bertha" is given the hard "t" of German pronunciation, it sounds much like "Beta"—and vice versa. However the term originated, it was not used to describe the gun which shelled Paris, until eager newspapermen seized on the colorful name and misused it. They had some justification probably, for the official name of the gun was merely "Die lange 22.2 Zentimeter Kanone im Schiessgerüst" (the long 22.2 centimeter cannon in the shooting cradle).

The effect of the Paris gun was lauded by German General Ludendorff, who in his book, "My Thoughts and Actions," said: "The bombardment made a great impression on Paris, and on all of France. Part of the population left the capital and so increased the alarm caused by our successes."

He was only partially right; an exodus from the capital did occur, but not on any great scale. Nightly Zeppelin raids had accustomed the Parisians to bombing, and the greatest result was to unite solidly French opinion against Germany. No mass evacuation occurred, but instead, a wave of popular feeling supported the activities of French arms at the front.

Germany had apparently felt this aim to be of paramount importance: strike at the enemy's capital, and he is disabled. Yet the facts disprove the theory. In World War II, Germany again constructed long-range guns, as well as developed the V1 and V2 rockets for raiding London from the Continent.

The raids certainly did damage. No one who has seen the scars of wartime London can deny that. Yet the feeling aroused by these indiscriminate attacks strengthened Britain's resolve to end the war as soon as possible, and created an environment of courage unexceeded by any citizens under fire. Germany, innovator of all-out war, practitioner of destruction behind the enemy's lines as well as attack at the front, wasted much effort on the Paris gun to create a legend, a detective story for ordnance and intelligence officers, and 303 big holes in the streets of Paris. ●

CARTRIDGES

(Continued from page 39)

First came the 25-25 Stevens, developed by Capt. W. L. Carpenter, USA, during 1895. The next year it was followed by the 22-15-60 Stevens, designed by Charles Herrick of Winchester, Mass., who also developed the 28-30 Stevens. The purpose of the 25-21 Stevens, which came out around 1897, was to duplicate the powder and bullet load of the then-popular 25-20 Stevens Single Shot, but to have it in a straight case cartridge. Last and biggest of this series, the 28-30-120 Stevens, appeared in the fall of 1900. This was one of the favorite target cartridges of the famous Harry M. Pope.

These cartridges were considered accurate, but the extraction problem of those long cases soon caused them to drop out of the shooters' picture. From the collectors' standpoint, they are as popular as ever! ●

Matter of Fact

BY EDWARD A. JOSEPH



AT THE START OF WORLD WAR II, THE U.S. ARMY APPROACHED THE ITHACA GUN COMPANY, MAKERS OF SHOTGUNS AND SUPPLIES — FOR THE PRODUCTION OF **COLT AUTOMATIC PISTOLS** WHICH WERE BADLY NEEDED AND AFTER A SURVEY THE ARMY FIGURED IT MIGHT BE ABLE TO PUT OUT

8,500 UNITS PER MONTH
THE GUNMAKER NOT ONLY DID THAT BUT WAS SET TO PUT OUT **20,000** PISTOLS PER MONTH SOON AFTER

THE GREEKS CALLED IT "**BALLEIN**" MEANING TO THROW
AN EARLY ROMAN WAR MACHINE WHICH HURLED LARGE OBJECTS WAS CALLED THE "**BALLISTA**"
FROM THESE ANCIENT WORDS, THE MODERN TERM, **BALLISTICS** WAS DERIVED TO INDICATE THE SCIENCE OF MOVING PROJECTILES



JOHN KOCH — ROCK ISLAND, ILL.
BORN IN SWITZERLAND — AT THE AGE OF 21, MADE A COMPLETE TARGET RIFLE — BORING THE BARREL BY **HAND**
CAME TO AMERICA IN 1851 — THEN MADE ANOTHER RIFLE ENTIRELY BY HAND

AT THE AGE OF 91 HE STILL CONFINED HIMSELF TO HIS BENCH REPAIRING PISTOLS, RIFLES AND SHOT GUNS

JOE HIESTAND
OF HILLSBORO, OHIO, SET A WORLD RECORD THAT STILL STANDS AND IT IS UNLIKELY THAT IT WILL BE EQUALED
USING AN ITHACA SINGLE BARREL TRAP GUN, JOE HIT



THE SCOTCH PISTOL MYSTERY

(Continued from page 17)

attempts at producing a ram's-horn pistol of steel are awkward. The hardness of the new material does not wholly explain the change from elegance and sophistication to the crudity of the early ram's-horn pistols. Were the fishtail pistols perhaps the work of experienced craftsmen imported into Scotland from Flanders, and the steel pistols the first essays of the native Scot? Early steel ram's-horns date from the 1660's, when the restored Stewart king, Charles II, looked for a good deal of his support to the Highland clansmen, and it is always possible they were made in a hurry. They, too, are fitted with snap-aunce locks. They have the look of a utility job, and the only concession to appearance is the ram's-horn feature itself.

In those days Scotland had very little iron of its own, and the metal had to be brought in from England and Sweden. Old horseshoe-nails seem to have been a usual source. The job was done by bending the nails into the links of a rough chain, and this the craftsman consolidated by hammering into a lump. This lump he hammered into a ribbon of metal and bent spirally round a mandril or core to shape it as a barrel. The joints were then welded and the metal heated up again, after which the mandril could be knocked out.

By the end of the 17th century gunmakers were working in several of the bigger towns, but the main center was the village of Doune in Perthshire. It has a strategic position on the edge of the Highlands. Here the pistol-

smiths worked in families, passing on knowledge and tricks of the trade from father to son over several generations. Doune's reputation grew throughout the 18th century, and the town's name on the lock-plate of a weapon can usually be accepted as a stamp of excellence.

The demand for arms in the Highlands was of course at its peak in the troubled years following the union of the parliaments of England and Scotland in 1707, since it was from the Highlands that the exiled Stewart family expected their main support in their attempts to regain the throne from the House of Hanover. Prince Charlie's adventure of 1745-6—the 'Forty Five—was the biggest and boldest of these attempts. He passed through Doune on his way to Edinburgh, and his gallantry to certain ladies in the village is on record. Very likely he had a pair of Doune pistols at his belt.

Those Doune ram's-horns show the Highland pistol at its brilliant best. The choicest of them must be reckoned among the finest things of their kind in the world, fit to compare with the masterpieces of the Cominazzo workshop at Brescia. The art is said to have come to Doune from the county of Fife, on the east coast—likely enough, as Fife had close contacts with the Low Countries—and the man who brought it was a craftsman of the name of Thomas Caddell, whose descendants produced some of the best work made in Doune. ●

A pistol by Caddell, made about 1700, represents the weapon emerging into its typical form. While the decoration is still crude, consisting mainly of bands and plaques of silver inlaid and engraved, trigger and pricker ball-terminals have taken their ultimate form of a beautifully engraved silver button, a feature of all the best Doune pistols. Another feature is the belt-hook, invariably present on Highland pistols, on the side opposite to the lock.

Lock, stock and barrel—literally!—in nearly all cases are covered with fine engraving, an intricate mesh of flowing forms. An oval or elliptical silver plaque, slightly convex, is commonly set on both sides of the butt, and is sometimes engraved with initials or coat-of-arms, while butt and stock are partially inlaid with an intertwining pattern in silver, done by chiselling out the pattern in shallow channels into which the silver wire is beaten.

The effect of the silver inlay was much enhanced by bluing the entire surface of the steel, which also helped to preserve the weapon against rust. Rarely today does one find a pistol with original bluing. The foremost inch or two of the muzzle is faceted and slightly flared, with a sudden turn-out at the tip—one of the features by which an early piece can usually be distinguished from later imitations. Normally the name of the maker is inscribed on the lock-plate, either in flowing script or in roman letters, and sometimes the name of the place of origin is added.

In only one or two known cases is the inlay-work done in gold instead of silver. The Queen possesses a pair of such pistols, preserved at Windsor Castle. The only other pair by John Campbell of Doune were the pistols stolen from the Colville Collection in Edinburgh Castle!

To my mind, John Campbell's pistols are the most beautiful of all Highland pistols, although the late Charles Whitelaw, once the greatest authority on Highland weapons, rated the work of Alexander Campbell and John Christie higher. The gentle, subtle flow of stock into butt, which is a mark of a John Campbell piece, was never quite matched by other makers of the third quarter of the 18th century, who tended to make the butt drop too suddenly for perfect grace.

M. Georges Stalin, a Frenchman who was the first connoisseur to take serious notice of the Highland pistol, fifty years ago wrote that it was "a little masterpiece of precision and good taste." It did, so far as we can gather, shoot accurately at short distances. The Highlander of 1745 could no more afford to carry guns that were mere showpieces than could a cowboy in Indian country in 1845.

The interior mechanism of the pistols looks rough-and-ready. There is still no bridle, which makes the tumbler work unevenly and causes unnecessary friction, and the springs are not well tempered. Externally, however, the lock is a lovely piece of work, and Whitelaw quoted a modern gunmaker as saying that the filing-up of the parts was beautifully done and would tax the skill of the best men in the trade today. On the subject of accuracy, in some cases the butt actually "casts off" delicately to the right to correct a pull to the left when the trigger releases the tumbler.

The 'pacification' of the Highlands after the 'Forty-Five—Highlanders had another name for it!—affected the gun trade in two

ways. There was no demand any more for working pistols in big quantities. On the initiative of Prime Minister Pitt, the more restless clansmen were persuaded to enlist in Highland regiments in the British Army. They were served out with service weapons roughly modelled on their own ancestral types of weapon, and among these were steel ram's-horn pistols mass-produced mainly by a maker called Bissell, who worked not in Scotland but in Birmingham, England. They look just what they are. There is no attempt at decoration. Some of the old armories in Scotland possess them by the dozen. It would be interesting to learn what proportion of the 'Highland' pistols picked on old American battlefields are of this type, and whether any of those relics of the War of Independence happen to be of the true old Highland type.

The other effect of the pacification was the coming of the costume pistol. The novels of Sir Walter Scott romanticized the Highlander—no longer a threat to the comfortable merchants of the Scottish Lowlands and of England. The Highland type of pistol was produced in more and more elaborate versions. The London or Birmingham proof-marks give away the barrels as English products, although their solid, cannon-like shape would betray that anyway. The enamel-work and gilding which takes the place of the old engraved silverwork is flashy stuff, and the enamels certainly were not done in Scotland any more than the barrels. It is hard to say if there is anything really Scottish about those gaudy pistols, although the name of T. Murdoch is on some of the locks, and the "Old Statistical Account of Scotland" of 1798 relates how Mr. Murdoch was still at work in Doune, the last of the old gunsmiths.

The best of those late costume pieces are, one must admit, colorful: for example, the Clanranald pistols in the National Museum of Antiquities of Scotland and the still-finer similar pair which once belonged to Colonel Alistair Macdonell of Glengarry, the swash-buckling young chieftain who went to see the King wearing his weapons and with a retinue of clansmen behind him, saying "Glengarry goes nowhere without his arms and his tail." But there are many costume or pseudo-Highland pistols of the early 1800's which are much less gaudy than the Macdonell pistols. Several things betray them as late pieces: the rigid, unflowing lines of butt and stock, the rather shallow conventional engraving on the surfaces, often with hatched lines to accentuate it, the clumsy knob that takes the place of the old button trigger, and the poppy or thistle terminal of the pricker showing between the horns. Some of these late pistols are even stocked with silver or white metal, or the terminals are mounted with crystals.

The rise of England as a nation making guns for all the world, and the subordination of the international destinies of Scotland, killed the industry. As a type, the all-metal Scottish pistol ceased to be. But the craftsmanship which once worked in unyielding steel continued. Edinburgh never reached the heights of the London or Birmingham gun trades. Nevertheless, makers like Alexander Henry, Daniel Fraser, and John Dickson produced rifles and pistols of conventional English style of quality and finish which has never been surpassed. They were worthy heirs to the earlier artists who made the Scottish all-metal Highlander pistols. ●

HUNTING IN THE HEAT

(Continued from page 35)

fornia. These are the deer which consistently hit the 200 pound mark, and which have the typical massive antlers of prize mule deer.

Black-tails are locally called brush deer, rabbit deer, chimise deer, Coast Ridge deer and some names not printable after a nimrod has missed one a dozen times. They are very numerous over much of their range, sometimes endangering orchards, grapes and other crops. I once counted 15 bucks and 77 does in a four hour ride.

These deer live in three kinds of terrain, of which the commonest is brushy ridges and canyons. Comparatively open, oak-studded foothills and high country, fir and pine timbered mountains are the other two.

The brush country is tough hunting, but usually harbors the most deer. I've seen does stick so tight a friend batted one with a rock before it would move, and he wasn't over 20 yards away from her at the time. They employ two methods of escape—let the hunter walk past them, or sneak out far ahead of him. Successful hunters know this. They often beat through the brush not over 50 yards apart, and post watchers at the heads of any canyons they intend to drive.

Close shots are the rule here: seldom over 100 yards. However, you never know when you may see a buck (spikes, does and fawns are protected) slipping away anywhere from 200 yards up. Many good guns are being manufactured for such conditions. Because of the dense brush, I wouldn't pick anything lighter than the .250-3000 or .257 or 7 mm. These deer are fairly thin skinned and don't require too much wallop to upset them.

I'd like to mention some other good black-tail calibers for all conditions. The .270, .30-30, .30-40, .30-06, 8mm, .300, .303, .32, and .33 are all okay as are many not listed. What a man owns and is used to, is as important a factor as anything else in the success he'll have with a rifle.

In the brush country, the venison hunter can often profit by the heat. On days that are real sizzlers, the deer will move in the middle of the day. They come down to the creeks to lie in the fairly cool oak and willow thickets. If a certain neck of the woods is creekless, the deer will often move down to some small flat and loaf around under the blue oaks. Sometimes they will bed down on top of an open knoll where a little cooling breeze may be stirring. In fact, I believe the majority of black-tailed bucks that I have killed, I've dropped about noon.

Deer need special care when downed in hot weather or the venison will wind up in the garbage can. Of course, it should be cleaned immediately. As soon as camp is reached, jerk the hide off so the venison will cool out better. Cut away all of the bloodshot meat, and open the carcass from stern to stern. Next slip a meat sack over the kill.

After it is dark, remove the sack and prop the rib cavity open with a stick. Split the carcass the next day and place it in the shade. Pile all of the blankets and sleeping bags you have over the meat. If the nights cool off decently, meat will keep a long time hung out every night and covered during the day. If the nights remain hot, better hunt up some kind of refrigeration by the third day following the kill. ●



CROSSFIRE

LETTERS TO THE EDITOR

That Overrated Hogleg

In reference to your relatively new publication, *GUNS*, I would like to compliment you on having what I feel is a rather descriptive and surprisingly accurate magazine of this type. The article appearing in your February issue under the title of "That Overrated Hog Leg," by George Pearsall, however, I find to be highly misleading and surprisingly inaccurate as compared with the other articles appearing therein.

It has been my personal experience of many years of extensive pistol shooting and use that there is no more reliable, dependable, and accurate a revolver than the Single Action Army Colt, particularly in caliber .45. The article by Mr. Pearsall would seem to follow the lines of a typical "crank" letter, written by one who either is unable to handle one of these pistols, or who has never had experience and occasion to rely upon a single arm that will deliver the utmost that can be desired from any handgun in actual everyday use.

I feel that my opinion in this matter can be no better vouched for than by the fact that the majority of professional hunters, peace officers, guides, trappers, and in short, men who often have to rely upon their pistols for defense of their own lives, choose the Single Action Army Colt above all others on the market today.

In the article, the statement is made that there were better and more satisfactory firearms than the Peacemaker Colt, "30 or 40 years ago"; it might be well to note that the professional gunmen who, during that time, literally "hung their lives on their gunshots," turned down the various multitudes of "more modern, more accurate, double-action revolvers" in favor of the time-tested Single Action Army Colt. Surely, these men who know, and tried every type of arm available, and still chose the Peacemaker Colt, had many good reasons for doing so.

The article, besides being misleading, was written in bad taste, to say the very least. I trust that future items in your up-to-the-point fine magazine will offer more informative and accurate articles as has been the case with past issues, and not veritable "crank" letters.

Ronald Echols
Willcox, Arizona

George Pearsall's article on the "Overrated Hogleg" is a good one. I had one of these things at one time, and from my experience, as a gun to use on a target (the only thing I could use it for) it didn't appeal to me at all. I traded it off and much prefer a Colt Official Police.

J. P. Rehling
Salem, Oregon

Am enclosing a photo of a Peacemaker Colt which might be of interest to you and your readers. This gun is 1½ inches long and made of tool steel—with bone grips. The hammer and cylinder function. Bbl and cylin-



der are drilled completely through.

I have worked about 100 hours in its construction, and I believe it is unique due to its small size. I've never seen or heard of any scale models this small.

William G. Lewis
Elgin, Illinois

Gatling Gun

I have just finished reading your second issue of *GUNS* and have found it to be up to the high standards that was set by its predecessor, your first issue. The story of the Thompson submachine gun was excellent as was the story of the Gatling gun.

I, however wish to ask one question concerning the Gatling gun. From the way it was stated, I received the impression that the writer thought very little of the Browning M3 and its cyclic rate of 1200 rounds per minute. It is true that the Gatling gun fired 1150 rounds per minute and at one time fired 3000 rounds per minute when it was attached to an electric motor. This was with the use of the barrels which would give the cyclic rate of rounds fired per minute of 115 and 300 respectively. In the case of the Browning M3, while the Gatling gun would be firing 115 to 300 rounds, it would be firing 1200 rounds.

I enjoy *GUNS* magazine very much and all that I can say is to keep up the good work.

Dennis J. O'Connor
New York, N. Y.

Thanks for your kind remarks on GUNS. You are correct about the Gatling gun's high rate of fire. The patent covering the electric Gatling indicates a very practical weapon, hardly heavier than the water-cooled Maxim or other MG's of the period. Cyclic rate per gun is, however, the final criterion. To remark that the Gatling used ten barrels is true, but only explanatory. It does not detract from the remarkable fact that after 50 years of work, we are approaching the high cyclic rate of fire attained by the old Gatlings.—ED.

THE LEGEND OF DAVY CROCKETT

(Continued from page 29)

Polly had died and Davy married the widow of a fellow soldier. His new wife had two children to keep Davy's trio company.

By then the exploits of Davy Crockett had been so bruited about the state that he became one of the most famous and popular men in the country. He was persuaded to go into politics and realized a better crop than he had in his farm days. He was elected to the legislature in 1821, then to Congress for three terms.

Even in the relatively peaceful arena of politics, Davy Crockett's Betsey proved herself invaluable. One of the most fascinating incidents of the Crockett career, told in his own words, relates how Davy's statesmanlike use of his rifle got him out of a tough political dilemma. Crockett's old war buddy Andrew Jackson had become the nation's idol and a candidate for President. Crockett, in his own environs, carried the Jackson standard by running for Congress. Davy, now a colonel, stumped among the voters, dressed in his hunting clothes, Betsey on his shoulder and a stream of wit and nostalgia about his adventures serving him well as campaign material.

One day, Crockett arrived in a Tennessee town, bursting with oratory and ready to do political battle. He was momentarily dismayed to find that his opponent was already comfortably installed on a huge log, surrounded by attentive would-be supporters

and giving forth with great eloquence. The colonel's dismay was short-lived, however, for when the fickle crowd learned that Crockett had arrived, they deserted Snelling and gathered around Davy to listen to him.

Mounting his own stump, Crockett plunged into a thunderous speech and went well until a heckler reminded Crockett's listeners that it was unfair for a candidate to expect the voting public to listen to such a dry subject without refreshment—such as rum.

To make the moment even more difficult, Crockett's opponent, deserted by his audience, had made a strategic move. He had walked into a nearby tavern, ordered a quart of the best rum and was offering this stimulant free to all who were so inclined.

Crockett didn't have any money but he had confidence that his name was so well known that he would not be refused credit. He strode into the tavern owned by an individual, Job Snelling, who Davy describes as a "gander-shanked Yankee," his thirsting public at his heels. The Yankee, when Davy ordered a quart of the best, merely pointed to a large, chalk-scrawled sign which read mockingly: "Pay today and trust tomorrow."

It was a terrible position for a man of honor and a candidate for office to be in. The crowd, seeing nothing was to be gained by allegiance to the colonel, surged back to Davy's opponent. Standing off by himself, deserted and crushed, the colonel caressed

his Betsey and in the touch of her there was inspiration. In those days the skin of a coon was fair exchange for a quart of New England rum. The colonel struck off into the woods, his departure unnoticed, and returned in 15 minutes, bearing on his back the hairy jacket of a coon he had shot.

The minute he entered the tavern, a half-dozen men were at his heels. The colonel slung the coonskin on the bar and ordered. A shout of approval went up from the rest of the crowd, all of whom now crowded about Crockett as a quart of rum was placed before him. Refreshed, the voters stood around while the colonel made one of his best speeches. Before the speech was over, however, the rum ran out. Crockett was considering striking out for the woods and bagging another coon when he noticed that the Yankee had carelessly stuck the coonskin between the logs supporting the bar.

"I gave it a sort of quick jerk," Crockett reminisces. "It followed my hand as natural as if I had been the rightful owner. I slapped it on the counter and Job, little dreaming that he was barking up the wrong tree, shoved along another bottle, which my constituents quickly disposed of with great good humor, for some of them saw the trick, and then we withdrew to the rostrum to discuss the affairs of the nation."

Before the day was over, Crockett recalls, he had obtained ten quarts of rum for the one coonskin without the Yankee being any the wiser. The prank aided his election for the story spread of how Crockett had out-smarted the Yankee, who was known as one of the smartest men in the area.

On another occasion, Crockett's craftiness served to save his reputation as a marksman. A visitor in Little Rock, Arkansas, he was uproariously received by the citizenry who flattered him about his reputation for accuracy with a target, then challenged him to demonstrate. Some of the most skilled marksmen in town, who had never been bested, were lined up against him. In the first contest, Crockett came through with flying colors. As he puts it: "I squared myself, raised my beautiful Betsey to my shoulder, took

deliberate aim, and smack I sent the bullet right into the center of the bull's eye."

The crowd was impressed but one man wasn't. He was the champion marksman of Little Rock and threw cold water on the colonel's triumph by sneering: "That was a chance shot." Crockett was all for backing out for he had watched the town champion in operation and was not too certain of beating him a second time. The colonel yielded, however, when the crowd demanded that their champion be given a second chance to explode the Crockett legend. The Little Rock champion fired first—a beauf of a performance, just grazing the center of the target. Crockett fired—and missed.

The colonel knew he had missed. But no one else did. The Little Rock folk became suspicious when they examined the target and found no trace of the bullet. The story goes that when no one was watching, the colonel picked up a fired bullet and stuck it in the target hole made by his first bullet. When the second bullet was found, he trumpeted: "You see." The very idea of finding a fired bullet on the ground, and especially one so conveniently close to the target, of the right size, and ready to be pushed into the first hole in Crockett's target while his political opponent looked on, was enough to strain any but the most gullible listener. Yet, his reputation was saved, and one more story added to it!

While his duties as a legislator afforded him less time to practice the art he loved, Crockett still indulged his passion for hunting. Customarily he wore a fringed hunting shirt, buckskin breeches and a coonskin cap. His hunting dogs, often used to pull down angry bears and treed cougars, were known as the best and meanest of their time. Their names were as grim as the reputation they earned. In fact, one of the dogs was called Grim. Others answered to Whirlwind, Old Rattler, Soundwell, Tiger, Growler, Holdfast, Deathmaul, and Thunderbolt. His real pet, however, it is written, was a gentle full-grown bear of gigantic size, christened Bear Hug.

Early in his political career, the colonel became disillusioned with his old hero, Andrew Jackson, and began to gain a reputation as one of the most carping critics of the government. In his last political stand, he found himself running against an opponent who had the Jackson nod. Davy was defeated. He accepted this reverse bitterly and set his eyes toward Texas where the fight

for the state's independence was raging. His disgust for politics led him to attend a meeting of the high brass in his party who he assailed bitterly for having let him down after the service he had rendered them and his country. His parting observation was that the politicians could go to hell; he was going to Texas.

In February, 1836, Betsey on his shoulder, the colonel arrived on the San Antonio scene to become, less than a month later, one of the martyrs killed in the famed defense of the Alamo. According to the account of an eye-witness brought down from the Battle of San Jacinto, these are the details of Crockett's last stand.

Before daybreak on March 6, the Alamo fortress was assaulted by Santa Anna's Mexican army in full force. Colonel Crockett gave an heroic account of himself in the desperate defense of the garrison. When the fort fell, he was one of six men surviving. Ordered by General Castrillon to surrender, the six had no recourse but to obey. Davy Crockett stood alone in an angle of the fort, the barrel of his shattered rifle in his right hand and his huge Bowie knife, dripping blood, in his left. A monstrous gash was on his forehead and, piled about him, was a barrier of 20 dead and dying Mexicans. The six men were marched to another part of the fort where Santa Anna waited. The spirits of the six survivors were buoyed by Crockett's firm step and fearless calm. General Castrillon had promised the survivors protection. Facing Santa Anna, the general asked what he should do with his prisoners.

The brutal Mexican conqueror flew into a rage, reminding his subordinate that he had ordered all prisoners slain. Mexican underlings flanking Santa Anna, plunged swords into the bosoms of the prisoners.

According to the eyewitness: "Colonel Crockett, seeing the act of treachery, instantly sprang like a tiger at the ruffian chief, but before he could reach him a dozen swords were sheathed in his indomitable heart; and he fell, and died without a groan, a frown on his brow, and a smile of scorn and defiance on his lips."

Even in death, Davy Crockett, the lovable braggart, peerless marksman, washbuckling politician, remained unconquered. Possibly his only regret was that he was dying without his faithful Betsey in his arms. Often he had expressed the hope that when the end came, his rifle would be close to him. So it was, but with the stock shattered and lying useless in the rubble that was the battered ruin of the Alamo. His rifle has never been recovered, though another rifle, evidently made for the Indian trade by Jacob Dickert of Lancaster, Pa., has been preserved in the Alamo Museum in San Antonio, Texas, as a relic from that battle.

Standing alone in the museum, in a glass case for all to see, the "Alamo Rifle" brings once again to mind the heroic defenders under Colonel Crockett. "Thermopylae had its messenger of defeat: the Alamo had none. Remember the Alamo." was the battle cry of the Texas Revolution. One hundred eighty Texans died there, some good men, some bandits and renegades who had once fled the law of the United States. But they had one thing in common—they were the sort of men Colonel Crockett was talking about when he told a youngster, "If you can't live as a good man, die as a brave one." ●

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BELLY GUNS

(Continued from page 12)

gun by reason of its ancestry is not intended for carry in an outside holster, openly displayed. The belly gun, essentially, is a hide-out. It is the ace in the hole aimed to be sprung when time is of the essence and as a surprise packet. For these reasons it ought to be toted under a coat or jacket, or if the weather is hot under the shirt.

The cross-draw holster is a mighty practical rig for the iron; so is a hip-pocket holster but a mite slower. Both Myres and Lawrence sew handsome rigs for either position. The conventional shoulder or half-breed is a good spot for the weapon. Unquestionably along these lines, Jack Martin has an outfit that is best. This is a scabbard that drapes the gun below the left shoulder and just ahead of the arm pit. It is good only for 2 or 3 inch models. The six-gun hangs upside down and is retained in the holster by spring tension. This holster may be the fastest in the world. If it isn't the most speedy, it misses the honor by a split thousandth. This Martin upside-down jobs works best under coat or jacket. It isn't too hot under a shirt. I highly recommend it for the discerning.

Of all handguns probably none of them are harder to master than the belly model. To begin with it is short and it is light. This coupled with a walloping big caliber spells a punishing recoil. Only a plenitude of firing will accustom the user to the buck and rear of the saved-off.

A hard-kicking gun can be controlled in only one way: it must be gripped with a powerful hand pressure. Practice a grip on the belly gun that will crush granite. Such a heavy hand will bring the weapon under control and keep it there. Practice on man-targets and do not fire at them more than 30 feet. Do not fire single shots, trigger off bursts of 2 or 3. Extend the arm full length in the beginning and simply look over the barrel. Later on commence to break the elbow and hold the gun below eye level. Shots come faster. Accuracy is just as good from this lower position—it is just a matter of practice. ●

RUSSIAN WOLF HUNT

(Continued from page 24)

hazard to villagers in remote settlements. Government hunters are then called out to exterminate the pack, sometimes shooting from airplanes and often using air sledges to make their way over the snowy wastes. A season's "take" for a plane hunter may be as high as 250 wolves.

Wolves are not limited to the hinterland, however. Even in as urban an area as the suburbs of Moscow, wolves may be found.

Hunters often call up the wolves, imitating the yell of a wolf bay. Using buckshot or an occasional rifle-caliber gun, Soviet hunters keep in training for all sorts of game. Their hunting is in keeping with the Soviet goal of making every Russian know how to handle a gun. Training starts with school kids, who have rifle handling as part of the classroom curricula. Some of the youngsters go on to become members of the Red Army while others switch over to sporting guns and hunt wolves in the Far North. ●

THE GREAT RIFLE CONTROVERSY

(Continued from page 8)

adjusted by the soldier to meet combat conditions. But on a cold day, the combat conditions constantly change. With a cold gun and cold ammunition, the gas force is low. This means the adjusting plug must be opened all the way to get reliable functioning.

As the gun heats up in full automatic fire, the gas port must be reduced. If the shooter fails to adjust this properly, damage may occur to the mechanism. On the Tokarev rifle, this adjustment consisted of five different changes. Instead of a plug easily moved by the soldier, an odd five-sided wrench had to be used, requiring the services of a skilled armorer.

These weaknesses of both guns were shown up in tests at Fort Benning, Ga., infantry school. Reporting on these tests, New York Times military analyst Hanson W. Baldwin noted: "The FN performed well though in some respects—particularly in malfunctions—the T-44 has been superior. In cold weather tests, the T-44 has functioned considerably better than the FN."

Five hundred rifles of the T-48 pattern are currently being manufactured at the Harrington and Richardson plant at Worcester, Mass. Bolt parts on these guns, according to one informant, are virtually identical with the Russian Tokarev.

At the Springfield, Mass., Armory, five hundred T-44's are also in the process of production. The cost of the T-44 is not yet disclosed. Pilot contracts always run high for unit costs, and it is only over a long period of time that costs are reduced through amortization of tooling investment and improvements in manufacture.

The cost of the T-48 is also not revealed. However, the actual labor and materials to produce the gun will be a constant, no matter where constructed. The British-adopted version now being produced in England costs about £ 30. While this is less than \$100, the actual value in terms of the British economy is higher. The cost is three times the weekly wage of a minor executive, and about four times the weekly wage of a London bus driver. This can easily be translated to a U.S. figure of \$250 or more, which is a considerable price for a military rifle of plain finish.

Variations of the FN have appeared in other European nations since its original introduction 25 years ago. The year 1942, apparently the beginning of the end for the Tokarev, brought in the Swedish Ljungman, which was another rifle with a great but unacknowledged debt to the original Saive design. Made by Aktiebolaget J. C. Ljungman, the M/42 used a bolt and carrier like the Saive-Tokarev, with some slight modifications in the manual operation of the carrier. The original Ljungman even used the gas piston rod above the barrel, but the 1942 model had a long gas pipe extending from the gas port in the barrel to a gas nozzle in the receiver bridge above the chamber. The gas nozzle directed the gases against the front end of the bolt carrier without any intermediate piston or rod. Apparently Ljungman found some difficulties in secure functioning and modified the method of applying force to the breech-block in this manner to correct them.

The reception given by the Swedish army to the Ljungman is interesting, compared with the actions of the Russians. The Swedes adopted the M/42 and had it in operation as late as 1949. But, a North American Newspaper Alliance dispatch reported on Jan. 3, 1954: "The Swedes have discarded the rifle and are using an automatic weapon of 36 rounds, invented by the Finns, and later improved in Sweden. It is a handy weapon, cheap to make, easy to take apart, and every village smithy can replace a damaged part. Weighing little more than eight pounds, it can be fired from the hip or shoulder, and is remarkably accurate."

This submachine carbine is the Kspistol M/45, a folding stock 9mm Parabellum weapon with a box magazine, which is the modified, reliable Suomi. It was the Finnish-designed Suomi which opened Russian eyes to the significance of a burp gun in winter fighting. At below-zero temperatures encountered in arctic fighting, a slight wound is a fatal injury. Bullet shock statistics and controversies of caliber against caliber pale into insignificance when the smallest wound at 60° below zero can kill.

In 1945 in Denmark the Dansk Industri Syndikat, Compagnie Madsen, picked up the Ljungman M/42 and brought it out as their Model 1945. In 1949 the design was altered again in the gas force system, the M/49 having a tube which took gas from about the midpoint of the barrel and wound around the barrel four times before reaching the discharge nozzle in the receiver bridge.

Though the Danish Madsen firm had high hopes for the (Saive) Madsen-Ljungman semi-automatic rifle, Model 1949, it was finally the reliable U.S. M1 Garand, which became the Danish official "Pattern 1950" rifle.

The original Saive has had no opportunity to build up a service record of its own. Limited quantities of Saive-FN rifles bought by Egypt after World War II have not performed well enough to get any favorable publicity. The FN manual for the gun may

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have been inspired by the Israel-Egypt border episodes and the Suez Canal operations. It states; "Working parts ought to be slightly oiled. It is however important not to over-lubricate when the rifle is used in a sandy country. It is then better to keep the gun nearly dry."

Just as the basic Saive-FN is the ancestor of the T-48, another brother of the FN is the FN Assault Carbine. Germany pioneered these types of arms by the "intermediate automatics" of World War II. The Machine-Pistole 43 and 44 and the Sturm Gewehr-44 are probably the best known. While Hugo Schmeisser was a leading German designer in this field, the Walther plant at the end of the war had also tooled up for an experimental run of a similar type of weapon. Characterized by optional selective-fire trigger design, pressed-metal and cheapened construction, and large "burp gun" magazine capacity, it is this type which has evolved into the T-48 design. Using the Saive breech, with machine-carbine pistol grip and light machine rifle carrying handle, the T-48 resembles externally several of these familiar types.

Mechanically the same as the FN rifle, the T-48 following the assault-carbine concept is designed for low-cost manufacture, easy field maintenance, and considerable volume of fire. Originally produced for the German MP43 cartridge, a shortened 8mm Mauser cartridge, it was later modified for the British .280 caliber, since abandoned. An FN caliber was next tried. Finally the Saive-FN was redesigned to take the American short .30, then known as the T-65 cartridge. And as the T-65 cartridge has become the .30 NATO, so the Saive rifle is on the way to being the NATO rifle.

The story of the NATO rifle is one of constant bickering among allies. Up to the end of 1953, the FN assault rifle was still an outsider. Whatever competition existed was between the T-44 and T-47. When the British publicly adopted the Belgian weapon, U.S. officials were dismayed. A United Press report from Washington noted:

"U.S. Army ordnance experts were surprised and distressed at Great Britain's sudden decision to settle on a new lightweight Belgian rifle as the standard weapon for the British infantryman. Army officials thought the decision might upset long-standing plans for a standard rifle among western armies. They had been assuming that a decision on a standard rifle for western armies would be postponed until completion of the competitive trials this spring."

There was opposition in Britain, too, but the Conservatives in Parliament voted the measure through, 266 to 232, and a minute majority of 34 members made the Belgian rifle Britain's official weapon.

The New York Times of Feb. 4, 1954 carried an article by Hanson W. Baldwin, war correspondent and noted military analyst, who asserted that there appeared to be an informal agreement which coupled standardization of the U.S. T-65 cartridge and the Belgian FN rifle as NATO arms. Britain's adoption has been the springboard for heavy pressure on the U.S. to follow suit. Said Baldwin: "General Matthew B. Ridgway, Army Chief of Staff, apparently likes the Belgian rifle and has praised it before Congress. About 3,000 have been ordered for field tests."

Three months later Baldwin indicated that under adverse pressure of differing viewpoints, "The Department of Defense appears to be inclined to restudy the whole rifle problem at the highest levels. It is probable that studies (from the technical, tactical, design, production and cost points of view) will be made, and at the same time, industry may be asked to compete in designing entirely new rifles, instead of limiting the competition to the three present competitors, the M1, T-44 and FN. The standardization of a new rifle seems some distance off."

Official views coincide with Baldwin's predictions that private inventors and manufacturers will be encouraged to enter their own designs in future competitions. Colonel A. W. Betts executive in the Office of Research and Development set forth this viewpoint as concerns small-arms: "It is and will continue to be army policy to encourage invention in the small-arms field. The Army has never departed from the policy of en-

THE FAST-SHOOTING 50's
Gunfire nowadays kills and wounds more people than during the heyday of Jesse James and Wild Bill Hickok. Every 24 hours four men, one woman and two children are shot somewhere in the U.S.

couraging individual inventors. The present rifles under consideration have been under test since 1950 and some 10 to 20 rifles have been evaluated and tested. There is no likelihood that open competitions will be held before the evaluation of present rifles is completed."

American gun manufacturers do not hide their bitterness as regards the great rifle controversy. John M. Olin, chairman of the board of the Winchester Repeating Arms Company, mentioned "the possibility that a Belgian-designed firearm may be adopted as standard for the armed forces. The government's policy in considering such a firearm is shortsighted since neither Winchester nor any other American manufacturer was invited to participate in the design of that firearm."

An off-the-record observation by a top-level executive of one of our largest and oldest gun making firms indicated his attitude towards the FN rifle. "Damning with faint praise" about sums up his remarks. Perhaps significant in such matters is the fact that the Remington Arms Company recently produced for commercial sale a military-caliber auto-loading rifle costing at the factory hardly *one eighth* the FN cost!

The Remington, of course, retails at \$125.95, but if the actual cost, on which a large army contract would be figured, exceeds \$35 to \$40, the company is losing money. Since 1940, Winchester has had a variety of more or less successful semi-automatic military rifles in their experimental racks. The facts are that while Army designers have initiated weapons, many of our service arms have come from private manufacturers. The Browning rifles, machine guns and pistols are typical of the contributions made by domestic manufacturers and commercial inventors to the nation's security.

Currently the rifle tests are at a crossroads. Today American soldiers are trying out pilot models of rifles on the roof of the world, where average temperatures range 30° below zero, where the frost pulls at the nostrils and

a deep breath is a pain, where eggs freeze too solid to be smashed with an axe. They have T-44's and T-48's, some of Belgian manufacture, some made at Harrington and Richardson on the educational contract. They will be maneuvering in the Arctic circle, where frost congeals instantly into iron-like ice on metal parts. There will be no problems with barrels overheating in rapid fire, but the long frame tracks, the light bolt carrier, the many contact surfaces of the gas cylinder and piston groups of the T-44 and T-48 will be more than ordinarily susceptible to malfunction.

A rifle warmed by being pulled into a sleeping bag at night will become frosted instantly on being exposed to the air. Moisture from breathing will even constitute a frost hazard on rifles. Guns carried into the warm, moist interiors of barracks or snow huts will pick up moisture . . . and if a speck of oil get on the guns, they are done for! Motor oils equivalent to SAE 30 have been already developed which will flow freely at 65° below zero, but lubrication of a running gasoline engine which generates its own heat is a different thing entirely from sporadic firing of as small an engine as a rifle. It will not be practical to lubricate the T-48's at all.

Remember the Fort Benning report. Even in the "cold" of a Georgia winter, the FN malfunctioned. Remember the Ljungman, the M/49, the Saive-Tokarev—all using the breech principle of a tipping bolt with a bolt carrier and a punch from a gas force to operate it. And all different in the methods of applying that force . . . one with a piston, the other with a nozzle and cup, and yet another with more or less a direct action of rear-diverted gas against the bolt carrier.

It is possible that the Russians, the Danes, the Swedes are right? It is possible that the Saive breech does not have the reliability to operate under bad weather conditions? That ice and cold delay the sensitive inertia balances of the bolt and carrier, and cause it to fail in extracting, or creating a jam of succeeding rounds? The Arctic tests now being made, with simulated fighting under winter conditions, may prove very interesting.

They will lug around a rifle awkward to carry, only two inches shorter than the Garand, possibly as little as a half a pound lighter, with an extremely long receiver which is nearly one-half the length of the 20" barrel.

Light weight has been a dogma in Washington when small-arms are mentioned. The new cartridge, shorter and lighter, was considered an improvement in terms of metal, shipping, and storage per billion rounds. A 25 percent reduction in size and weight is significant when war quantities are considered. But the FN rifle certainly does not meet that requirement, and in the enervating cold of the north, the answers will come out. Fortunately we have time still for field exercises, for testing. How much longer will we have this time?

On the sidelines will stand the best brains, engineering talent, and production genius of America's arms makers. They are the core of national defense, but nobody asked them their opinions. Nobody asked them to provide models for test. Instead, too many dollars have been spent, and too much irreplaceable time wasted, on a rifle which is basically more ancient than our battle-tried Garand. Who goofed? ●

REBUILDING A COLT

(Continued from page 38)

fitted to them, and usually an ejector rod. However, the new rod may not be needed. Punch marks stake the ratchet to the rod end in final factory assembly. These can be removed by careful use of an end mill in a drill press. But I have the small grinding heads in a portable grinder to cut into these punch impressions, without damaging anything.

Now remove the ratchet. A leather strip, gripped carefully in the jaws of pliers, will do the trick without damage. At the factory, a small hex box wrench is used. If the ratchet is to be scrapped, don't worry about a little damage. The cylinder may then be slipped off of the crane arbor, and the new cylinder put in place. Screwing down the new ratchet all the way, until it is properly placed in the cylinder end, and then staking, almost completes this part of the job. But not quite.

Try the crane in the frame. If the cylinder closes, with the crane lock in place, the ratchet clearance may be right. See if the cylinder revolves easily, and if there is any fore-and-aft shake. If the ratchet is tight, and binds the cylinder, file across it a few strokes with a mill file and try again. Then check for headspace, by placing several empty cases in the chambers and measure with a feeler gauge. In large caliber revolvers, headspace should be about .003" to .004". This is especially important in re-barreling to .357 Magnum or other powerful calibers.

With the cylinder fitted, and rotating correctly with each click of the trigger, the next step is barrel replacement.

The barrel should be installed in the same way that the old one was removed. Turning it in by hand will show the sight about 20 degrees off from vertical. Then, using the cylinder-crane assembly, it might be well to check the clearance. Using a feeler gauge, determine that the space between the back of the barrel shoulder and the frame is not any greater than the space between cylinder front and barrel rear. If it is, or if the cylinder will not even assemble into the frame, it means that the barrel is too long at the breech and must be shortened.

This can be done precisely by careful measuring and cutting the end back on a lathe an exact amount. A serviceable "amateur" method again involves the use of the file.

Lean on the hammer handle and wrench and bring the barrel up snug, with the front sight vertical, aligned with the frame sighting notch. Then file across the flat end until the cylinder will close. Great care should be taken in filing, that the file be held flat. The file should not be tipped, thereby taking more off of one side than the other. Changing the position of the file several times, and keeping it clean, will make this easy. If a slight fuzz burr is left on the inside edge of the barrel, this can be removed by pressing a piece of 00 emery cloth on the end of the barrel, with the ball of a finger. This will knock off the burr but not damage the bore. The emery dust should be carefully wiped out afterwards. Clearance at the cylinder face and barrel breech is pretty much a rule of thumb. A thin line of light should be seen when the gun is held side-

ways, and the cylinder should not scrape at all. Actual clearance will be about .003".

Safety is important in doing any work on guns. Lockwork should be in good order, the firing pin should not protrude too much, and the pin hole in the recoil plate should not be too big. Signs of battering around the pin hole mean trouble there, and possible replacement of the pin or recoil plate or both. The Colt Company recommends replacement of the recoil plate in the New Service guns when they are changed to .357 Magnum. This is largely an excess of caution, dictated by the fact that many of the .455 British Colts and other war relics may be in pretty rough condition. But if the firing pin is shaped okay, and fills the plate hole properly, no trouble need be expected.

Other Colts may be practically converted. The old Army Special in 32-20 caliber is often changed to the more popular 38 Special, while long-barreled Police Positives are easily changed to the snub 2" barrel for hideaway use. I have seen an old Police Positive .38 which was changed completely to .22 rimfire, by installing a new cylinder, barrel and firing pin and slotting the recoil plate. The frame also had been filed with a small groove to allow clearance.

The Colts were built by practical men who were long on efficiency and simplicity and short on unnecessary complications. Any "home-mechanic," if he uses sense and follows the rules, can easily restore a worn-out gun to fine working order at minimum expense.

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TRIGGER TALK

A SIZZLING shooting match with words was stirred up by George Pearsall in his recent article on "That Overrated Old Hogleg." The results are seen in our "Crossfire" department on Page 45 in this issue. Pearsall's disparaging remarks on the Single Action Colt brought a flurry of letters in defense of the gun. Perhaps most outraged of the Colt defenders was famed crooner Mel Torme, who owns one of the most complete collection of Colt Single Action revolvers in the country. The singer, who is sometimes billed as "The Velvet Fog" demanded to be heard and GUNS invited him to state his bill of particulars in an article which will appear in the June issue.

Torme has amassed more than 125 Single Actions in the past ten years and pridefully states that "not one of them has ever been re-blued, re-nickled or tampered with in any way." Among the rare items in his collection are two factory .22's (one a flat-top Target model), a .32 S&W (only 34 of these were made), a .44 S&W (only 24 were made) and seven engraved (factory) S.A.A.'s ranging from "A" or sparsely engraved to a presentation-engraved gold-paneled .45 valued at \$750. Certainly he is qualified to come to the defense of the "Peacemaker." His article should be an authoritative statement of the pro-Colt camp.

Authoritative is also the word to describe the article in this issue of Scotch pistols on Page 14. Its author, Ian Finlay, is assistant keeper of the Royal Scottish Museum in Edinburgh and has done years of research on Scottish weapons. He has written a book, "Scottish Crafts," which has a lengthy section on weapons.

Authoritative, too, is the way to describe the highly provocative story in this issue called "The Great Rifle Controversy." When GUNS got on the trail on this story, it became a staff project which included contacting many key people high in industry, government and the army. Most of these officials could not be quoted because of their positions, but they agreed with the substance of the story done by staff writer William C. L. Thompson. Certainly his disclosures will be hotly debated and perhaps might well be the subject for congressional investigating.

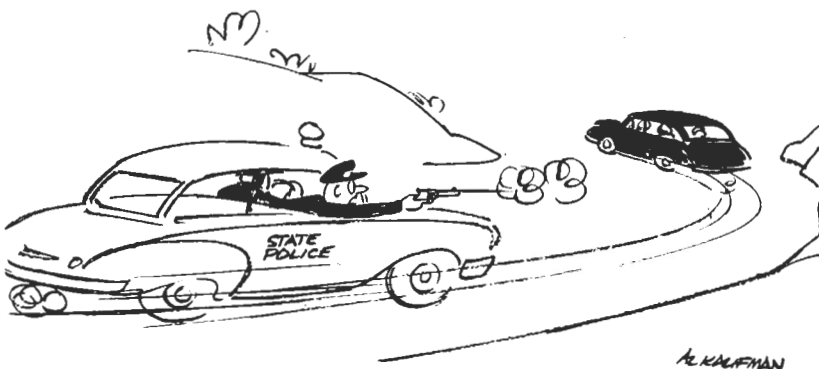
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"I'll ship you 2 of these guns to hang on your wall for \$17.00 or three for \$23.00 together with a notarized personal letter from me verifying their origin. If you don't like 'em you can ship 'em back and I will refund your money."

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Here's the standard long action that is used to build sporting rifles in the following calibers: 30-06 Springfield, .270 Winchester, .300 Savage, .308 Winchester, 7 MM Mauser and many other popular calibers. With this complete action, all you need is a chambered barrel in the caliber you desire and a good stock to assemble your own custom sporter. Send \$50 for each action ordered to cover postage. \$14.95

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THE REMARKABLE SEVEN-SHOOTER

When England's beloved Admiral Nelson (left), the hero of Trafalgar, was slain by a French sniper's bullet in a naval battle, British gunmakers set about finding a new weapon to combat Gallic sharpshooters. The result was one of the strangest military shoulder arms ever made—a gun that fired seven bullets at once!



Gunmaker Henry Nock found an answer for French snipers in naval engagements—a multi-barreled goose gun in large calibre with which a sailor could fire a volley of seven shots at a time. Some sailors even went so far as to load three bullets in each barrel and then fire 21 shots at once. Read William C. Dowell's engrossing account of the history of the volley gun and how it operated.



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