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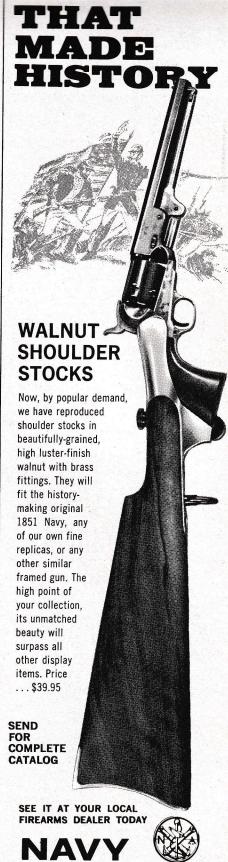
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ON THE COVER: Pictured this month is about as wide an array of guns as one could come by. At the top of the page is the new AR-16; in fact, the prototype and the only one of its kind. The .45 New Service with cut-back cylinder is one of the guns redesigned by Lloyd Carlson and discussed at length, while the partially finished miniature Luger is one that will sell at higher prices than gold, when completed. Photo by Jim Sullivan.







NAVY WARMS CO.

689 BERGEN BLVD., RIDGEFIELD, N. J.



THESE UNDER-SIZED REPLICAS ARE WORTH FIVE TIMES THE VALUE OF GOLD BY WEIGHT!

By Tommy L. Bish



THE art of miniature-making has been practiced for thousands of years but it was not until approximately the Fifteenth Century that the under-sized creation of all types of arms and armor came into being. At this time it became necessary for armorers to reproduce their wares in dimunitive size in order to transport them from one customer to the next and from one country to the other. These miniatures may be referred to as "salesman's samples," as this was exactly what they were.

Each arm, be it a firearm, broad sword or complete suit of combat armor for the soldier, was re-created in miniature in such exacting likeness that every rivet, each screw and steel plate were faithfully reproduced so that the prospective customer could envision exactly what he was buying by closely inspecting the small prototype. By viewing this small model, he could order changes in design of helmet or chestplate, or call for alterations much as does the modern man in ordering a suit of clothes.

The few of these miniatures that still exist today, are highly prized as museum pieces, and for the most part, are seldom found in even the most extensive private collections. These tiny, exacting pieces of under-sized armament often have price tags running into five figures if they are found for sale at all.

The artisans of old Europe are fast becoming a myth, but the mak-

ing - almost entirely by hand of exquisite, perfectly scaled and working miniatures still is practiced by a very few men who possess the skill of hand and the knowledge to create these small items that are so faithfully reproduced that it is impossible to distinguish the real from the scaled down ver-

sions in a photograph.

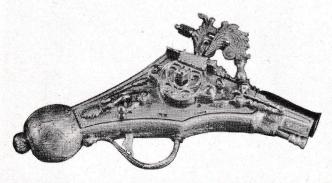
One such artisan, operating on a small scale is Edmond de la Garrigue of Newport Beach, California. Such an operation, in which the parts are so small that one must use a powerful magnifying glass to inspect and appreciate them, cannot be hurried by machinery. Instead, each piece must be completely finished by careful handwork. Gun parts which are not much larger than a pin head are so faithfully reproduced by de la Garrigue that they are exact miniaturized counterparts of the originals.

Some months back, de la Garrigue and Ben Nysewander, an ardent gun collector, began the slow. painstaking job of manufacturing miniature firearms. Under their contract, Nysewander was to furnish the necessary funds for the machinery and tools, and to handle the distribution and sales of the guns when finished. De la Garrigue's contribution has been to turn out, almost entirely by hand, gunsin-miniature, so precisely made that each and every working part of the guns' mechanisms will perform the proper functions.

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SMALL-TIME GUNSMITHS



The 15th Century wheel-lock miniature above is shown in exact size. At \$2500 per cased pair, it is exact in every detail. Below: The intricate lock mechanism is not unlike that of a fine watch. Also shown is spanner wrench used before firing.



The first arm selected by the pair for reproduction was a 15th Century wheel-lock pistol with engraved brass grip. This ancient arm, in its original form, was approximately six inches in length. its mechanism so intricate that even in this size it was a masterpiece of workmanship. To reproduce this gun at one-half scale meant that the finished model would only be three inches in length.

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During the manufacturing of the initial specimen of this pistol, it sometimes was necessary to remake a single part as many as a dozen times before a perfect one was at-

tained. This was especially true in the manufacture of the frizzen spring, which is so tiny and so ornately carved and shaped that a slip with a small needle file in the final contouring would completely ruin it. The powder pan and sliding cover were hand carved from solid steel by using special chisels designed and made for this one operation just as it was done five hundred years ago, since no machine tool could do the job correctly.

The brass grip or stock of the pistol was so small that it required the manufacture of special milling tools to rough contour this one part.

This grip, after being rough contoured and inletted, then was finished almost entirely by hand. The screws are so small in the lock mechanism that de la Garrigue turned to the jewelry trade for .009-inch optical screws and taps. The latter are so tiny that they necessitate the use of a powerful magnifying glass in order to tap a perfect hole

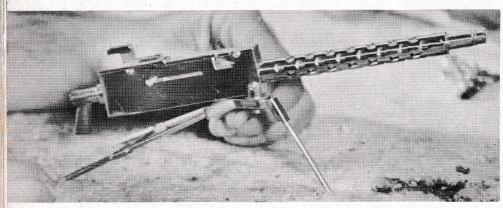
glass in order to tap a perfect hole. In turning out the various models now under process which include the wheel-lock pistol, Luger automatic pistol, 1928 Thompson sub-machine gun and a 1919 Model A-4 Browning air-cooled machine gun on an M-2 tripod, it was found that certain parts of these guns, when scaled down, required "beefing up." For instance, the slide rails on the Luger pistol were found to be too fragile when reduced to one-third scale, so it was necessary to enlarge them slightly in order to avoid breakage in this area. This was necessary in view of handling by prospective customers unfamiliar with the intricacies of the gun's construction. This enlargement of the Luger's rails has a tendency to throw measurements off at other points in the gun, and these, in turn, had to be beefed up for durability's sake.

In spite of the mountainous problems encountered in the manufacture of the Luger pistol and the wheel-lock, they were worked out to near perfection and the finished products are so faithfully done that if ammunition of the correct size were available, each of these guns would fire with no difficulty.

During his tour of duty with the Seabees, de la Garrigue used to cuss the Browning Automatic Rifle (BAR) and its seventy-one parts so immediately began the development of his own ideas of what a BAR should be like. This gun, in full size, had only nine working parts and according to de la Garrigue, "worked fine." Later he was to reproduce a few miniatures of this same gun which measured only seven inches over all.

One will wonder just what the price tag will read on these pintsize arms. To gain a clearer picture of just how tiny guns of this type are evaluated, one must go back to the work bench and count the hours of sweat and patient labor that go into each of these arms. For example, it requires approximately 625 hours of skilled labor and infinite patience to complete one perfect, working miniature Luger. Eighteen Luger frames alone were scrapped on the initial model before one frame turned out perfect. All holes must be drilled in their precise location while the frame is still in block steel form;





This 1919A4 Browning air-cooled machine gun, actually a cigarette lighter, is faithfully scaled at 1/4 size. It takes 15 hours to make, and is priced at \$45.

Hundreds of parts were scrapped due to imperfections during construction of miniature shown on these pages.

the metal then undergoes the tedious process of being milled out to accommodate all working parts. After the frame is semi-completed, working parts then are hand-made to fit each individual frame, as interchangeable parts production on these tiny guns are less than a reality. The barrel of the Luger is .128 caliber and rifled. The established price has not yet been set on this gun but it is estimated that \$1500 per Luger — complete with attractive presentation casing — will be the tab.

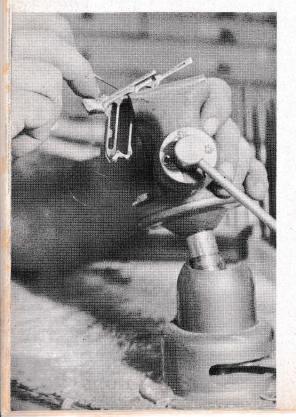
Price-wise the wheel-lock will run in the neighborhood of \$2500 a cased pair, including the spanner wrenches. This gun contains five springs so small that sometimes it is necessary to manufacture a dozen or more of each before getting one complete perfect set — a total of sixty springs to finally get one set of five that meet de la Garrigue's approval.

rigue's approval.

The Model 1919 AR Browning air-cooled machine gun on its M-2 tripod is a cigarette lighter and will sell for the sum of around forty-five dollars, but de la Garrigue insists that at this price he is just breaking even. This gun is an exact one-quarter scaled model of this famous machine gun but has no internal parts other than the cigarette lighter which is exposed when

the cover is raised.

The combination of de la Garrigue and Nysewander began some months ago when it was discovered they had mutual interests in guns. Ben collects and loves miniature firearms in any form while Ed's first love is in creating them from scratch. But due to the amount of



Left: Luger frame undergoes final finishing and fitting by de la Garrigue. Below: Major components of the Luger-carbine are compared to a quarter.



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money necessary to realize his dream, he had been unable to do this on any respectable scale.

To date, the manufacture of these diminutive replicas by de la Garrigue and Nysewander is still in the production stage, meaning that they still are ironing out the manufacturing process, trying to perfect means of turning out these fine, tiny guns on a more productive basis, yet maintain the quality to their high standards. As de la Garrigue sees it, "There must be a quicker way to make these guns, eliminating so much of the fine handwork" but to my knowledge, there is no machine yet made that will do the extra fine spider webby type of work so necessary in the completion of one of these tiny, undersized guns; it is work that must be done by skilled hands and a large assortment of specially made hand tools.

When all parts are semi-finished, (and providing the original sized arm is adorned with it,) the parts are sent to Ed Lishka of Orange, California, where the engraving is reproduced to scale. This engraving is an exact reproduction of styling of the old masters of Europe. Lishka is one of the young upand-coming engravers whose work has been lauded by many of the older professionals as among the finest in the country. His work on the de la Garrigue-Nysewander miniatures well bares this out.

After the selected parts have been finished, engraved and polished, those that are to be blued are sent to John McCormick, an artist in gun bluing whose work is so much in demand that jobs are done "by appointment only." Here the gun or part receives a blue that is comparable to the finest of the old masters. Great care is taken with all sharp angles of the gun's conformation in order to have no sickly rounded edges. This work completed, the gun then is returned to the de la Garrigue shop where it receives its final fitting and assembling and is ready for the prospective customer.

The de la Garrigue-Nysewander company, small as it is, will reproduce any firearm of any type in miniature on special order with a waiting period of from two to three months before delivery. But they operate on the theory that all good things are worth waiting for.

And if it were possible to buy guns by weight, these examples would no doubt go down as some kind of alltime record. Considering the fact that the one-third size Luger weighs only ten ounces or so, and is priced at \$15000, this brings it in at some \$150 per ounce — or some five times the value of raw gold!

In the photos below, miniature Thompson sub-machine gun is shown against array of tools used in its building. At center, all lettering on receiver is faithfully reproduced by engraving. At bottom, major parts of this miniature are compared with a fifty cent piece. Each part is to the exact scale.

