

PATENT SPECIFICATION

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COMPLETE SPECIFICATION

Improvements in or relating to Grips for Fire-arms, especially Pistols, and Method for their Production

I, JOHANNES SCHWARZ, a German Citizen, of 41/43, Griegstrasse, Berlin-Dahlem, Germany, do hereby declare the nature of this invention and in what manner the same is to be performed, to be particularly described and ascertained in and by the following statement:—

This invention relates to methods for producing the grips of fire-arms, especially pistols, revolvers and shooting apparatus for signals.

Hitherto the grips and breech-slides, magazine-guides, drum-holders and the like integrally connected therewith in the usual manner have been machined, with tools for removing chips, from wrought pieces or solid material, obviously with the assumption that the grip is in places very much strained and consequently must be especially hard. This method is very lengthy and expensive. Light-metal grips produced by sand-casting and heavily machined have not stood the test in consequence of too little surface-hardness and strength.

The invention consists in the grip, and the housing-parts integrally connected therewith, such as slides, magazine-guides, drum-holders and the like being produced by a die-casting method, preferably with the employment of easily fusible heavy metals such as zinc alloys with small addition of aluminium and copper (e.g. 91 to 94% Zn., 3.5 to 5% Al. and 2.5 to 4% Cu.) separate polished cores being inserted in the mould or pieces made of difficultly fusible metal embedded in the casting at the places at which the casting is to have sliding surfaces. By this method the production of the grip is exceptionally accelerated and simplified, as external subsequent machining of the cast grip is almost wholly dispensed with. The above described zinc alloys show themselves to be of especial value for the new casting, because they are cheap and easily fusible and have therewith a tenacity value of about 33-36 Kg/mm² and furthermore at the surface a high Brinell-hardness (112 Kg/mm²) and a favourable capacity for sliding relative to steel. Grips of such or similar heavy metal castings have the further advantage that

their weight scarcely differs from that of iron-grips and consequently, when firing, the weapon lies in the hand quite as well as a weapon with an iron-grip. In certain cases also easily fusible gunmetal or even under certain circumstances white cast-iron are applicable, which can be converted later into forgeable iron with the employment of appropriate additions of carbon, manganese, and silicon by a simple heat-treatment known *per se*.

The pieces of difficultly fusible metal are embedded in the cast metal and may either have the final shape before casting, e.g. a U-cross-section, or they may have a full cross-section and be machined in the finished casting.

The Figure in the accompanying drawing illustrates in perspective view one form of grip made in accordance with this invention namely a grip for an automatic pistol.

In the Figure the grip consists of a butt 1, which comprises the magazine guide 2 and the holes 3 for spring and trigger parts and the guard 4 for the trigger. In the upper part of the grip is provided a slide 5, together with an attached arcuate slide piece 6, for the reception of the breach and barrel sliding therein.

In making such a grip of metal the whole grip including the sliding surfaces can be cast in a completely finished state without a machining at the sliding surfaces being necessary for the removal of chips. Suitably, however, a protective layer is applied at all places, which do not serve as sliding surfaces, e.g. by electrolytic oxydation or by applying a lacquer and burning it in.

Instead of zinc-alloys there can be employed for example an easily fusible yellow- or red-metal, e.g. a hard-solder alloy. Both alloys have a weight similar to iron, so that the weapon remains in its total weight practically unchanged as compared with iron.

When light metal is employed suitably the slides 5 and 6 are embedded in the casting, the slides being made as special work-pieces in final form or a form subsequently to be machined.

Having now particularly described and

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ascertained the nature of my said invention and in what manner the same is to be performed, I declare that what I claim is:—

5 1. Method for the production of grips
for fire-arms by casting easily fusible
metal, especially for pistols, wherein
simultaneously with the grip, and in-
tegrally with this, housing-parts such as
10 slides, magazine-guides, drum-holders
and the like, are produced by the die-cast-
ing process essentially in its final form
without tooling its inner and outer sur-
faces, preferably with the employment of
15 easily fusible heavy metals such as zinc
alloys with small addition of aluminium
and copper (e.g. 91 to 94% Zn., 3.5. to
5% Al. and 2.5 to 4% Cu.), whereby
20 separate polished cores being inserted in
the mould or pieces made of difficultly
fusible metal embedded in the casting at
the places at which the casting is to have
sliding surfaces.

2. Grip of easily fusible cast-metal for
25 fire-arms especially pistols, wherein the
grip, and housing-parts, such as slides,
magazine-guides, drum-holders and the
like, consist of an essentially non-tooled

integral die-cast piece retaining its inner
and outer cast surfaces, of easily fusible
heavy metal, especially alloys, that con-
sist predominantly of zinc. (e.g. 91-94
Zn., 3.5-5% Al. and 2.5-4% Cu.), the
sliding surfaces, e.g. slides, being cast
finished by means of separate polished
cores. 30

3. Grip according to claim 2 which
comprises pieces made of hard difficultly
fusible material embedded in the casting
at places, at which it is to have sliding
surfaces. 35

4. Method for the production of grips
for fire-arms by casting easily fusible
heavy metal, especially for pistols, sub-
stantially as described and illustrated. 40

5. Grips of easily fusible cast-metal for
fire-arms especially pistols, constructed
arranged and adapted for use substan-
tially as described. 45

Dated this 11th day of May, 1938.

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[This Drawing is a full-size reproduction of the Original.]

