

N° 27,409



A.D. 1912

*(Under International Convention.)*

Date claimed for Patent under Patents and Designs Act, 1907, being date of first Foreign Application (in Austria), } 7th Dec., 1911

Date of Application (in the United Kingdom), 28th Nov., 1912

At the expiration of twelve months from the date of the first Foreign Application, the provision of Section 91 (3) (a) of the Patents and Designs Act, 1907, as to inspection of Specification, became operative

Accepted, 2nd Oct, 1913

#### COMPLETE SPECIFICATION

#### Improvements in connection with Cartridges.

We, CHEMISCHE PRODUCTEN- UND ZÜNDKAPSELFABRIK VICTOR ALDER, of 42, Humboldtgasse, Vienna X, in the Empire of Austria, 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:—

- 5 In machine guns and automatic firearms, each cartridge before being fired is lubricated (which is done by an automatic lubricator) so as to render possible the ejection of the empty cartridge case. Without such lubrication the empty cartridge cases cannot be ejected after a few shots have been fired as the friction of the cases on the cartridge chamber becomes very great.
- 10 Lubricators are difficult to apply, are unreliable in working, and complicate the weapons; many constructions of weapons which would otherwise offer great advantages have not been adopted in practice, their use being rendered impossible, or of no value, on account of the aforesaid objections.
- 15 Various materials have been suggested for waterproofing paper cartridge cases, one such material being applied by immersing the cartridge case in a bath of melted paraffin wax and subsequently applying celluloid varnish to the case. A mixture for lubricating metallic cartridge cases has also been suggested, such mixture consisting of beeswax and india-rubber; a mixture of wax, stearine, paraffin or other like substance dissolved in coal tar or other
- 20 suitable spirit, the proportions of the ingredients of this mixture being such that the resulting compound is fluid or semi-fluid when cold, which mixture has been suggested for use with paper cartridge cases.
- According to our invention we employ a coating mass for the lubrication of metal cartridge cases, and if desired of the projectile, the said coating mass
- 25 being solid and lacquered-like at ordinary temperatures and capable of readily melting under the heat of the explosion and supplying an oily fluid, which facilitates the ejection of the said cartridge cases, the coating mass consisting of any of the following, namely, asphaltum, hard products of asphaltum, carnauba wax or hard tar products such as hard coal-tar-pitches of high melting

[Price 8d.]



*Improvements in connection with Cartridges.*

point. Any one or all of the aforesaid materials mixed with stearine, bees-wax or suitable liquid oils in order to lower the melting point can also be used as the lubricating compound.

The objection which occurs in machine guns and automatic firearms owing to the lubricant as hitherto used with cartridges beginning to smoke a short time after the weapons have been in use, on account of the high temperature, is completely avoided when the cartridge coating is made of the aforesaid materials which are solid at ordinary temperatures, but which melt at high temperatures and do not evolve smoke during the ordinary use of the weapon. A composition eminently suitable for such coating is a mixture of 70 parts by weight of the constituent of carnauba wax melting at 75° Centigrade with 20 parts by weight of ceresine and 10 parts by weight of beeswax. This has proved most advantageous in practice.

The aforesaid coating is applied over the case or over part of the case and also over the projectile when desired. This coating has the additional advantage of replacing the material frequently applied by dipping and consisting of equal parts of beeswax and vaseline and having for its object to render cartridges impervious to water. The aforesaid dipping mixture hitherto used has also for its object to coat the projectile with fat so that it can be more readily introduced into the gun barrel, keep the barrel lubricated, and protect it against wear, but in consequence of the sticky consistency of such composition, dirt accumulates thereon.

The coating according to this invention renders the cartridges impervious to water, produces a smooth lacquered-like surface which does not take up any dirt, resists to a high degree frictional action, and greatly improves the qualities of the cartridges as regards their storage.

In these respects the cartridge coating according to this invention has also great advantages, as it keeps the cartridges clean and effects in consequence of the high degree of viscosity due to the high melting point, the lubricating of the gun barrel much better than does the old cartridge dipping mixture.

Having now particularly described and ascertained the nature of our said invention and in what manner the same is to be performed, we declare that what we claim is:—

1. For the lubrication of metal cartridge cases, and if desired of the projectile, the application of a coating mass solid and lacquer-like at ordinary temperatures, the said coating mass, consisting of any one of the following materials namely asphaltum, hard products of asphaltum, carnauba wax, or hard tar products such as hard coal-tar-pitches of high melting point, substantially as described.

2. For the lubrication of metal cartridge cases and if desired of the projectile, the application of a coating mass, solid and lacquer-like at ordinary temperatures, the said coating mass consisting of either asphaltum, hard products of asphaltum or carnauba wax or hard tar products such as hard coal-tar-pitches mixed with softer materials in order to lower the melting point of the aforesaid coating mass, such softer materials including stearine, bees-wax, or suitable liquid oils.

3. The herein described compound consisting of carnauba wax, ceresine, and bees-wax, mixed substantially in the proportions stated and for the purpose explained.

Dated this 28th day of November, 1912.

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