

R. M. THOMPSON.
AUTOMATIC STEERING DEVICE FOR FLYING MACHINES.
APPLICATION FILED JUNE 29, 1910.

1,026,415.

Patented May 14, 1912.

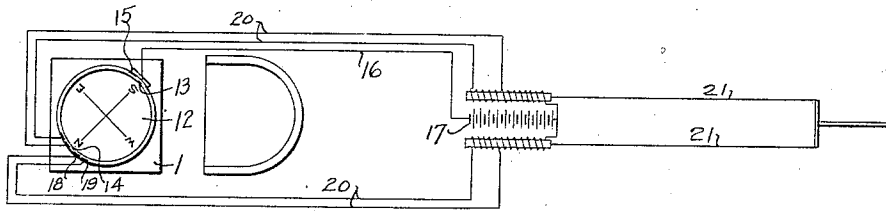


Fig. 1.

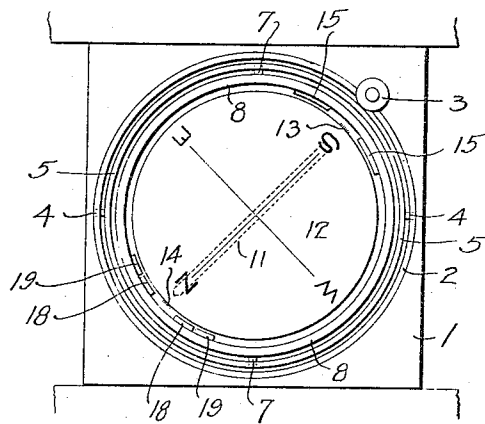


Fig. 2

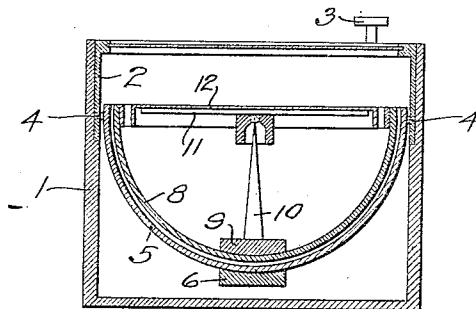


Fig. 3

WITNESSES:

V. Hamberg
D. D. A. Outcalt

INVENTOR

Robert M. Thompson
BY *J. P. Elliott*
ATTORNEY

UNITED STATES PATENT OFFICE.

WILLIAM H. BUELL, OF NEW HAVEN, CONNECTICUT, ASSIGNOR TO WINCHESTER
REPEATING ARMS CO., OF NEW HAVEN, CONNECTICUT, A CORPORATION.

PRIMING MIXTURE.

1,027,814.

Specification of Letters Patent.

Patented May 28, 1912.

No Drawing.

Application filed March 14, 1912. Serial No. 683,877.

To all whom it may concern:

Be it known that I, WILLIAM H. BUELL, a citizen of the United States, residing at New Haven, in the county of New Haven and State of Connecticut, have invented a new and useful Improvement in Priming Mixtures; and I do hereby declare the following to be a full, clear, and exact description of the same.

My invention relates to an improvement in that class of priming mixtures which are known as non-fulminate or non-mercuric mixtures for the reason that they are compounded without the use of fulminate of mercury which is the characteristic ingredient of all fulminate mixtures, the object of my present invention being to produce a non-fulminate mixture of superior character in so far as it insures the rapid and even ignition of the entire priming mass and the production of a hot and uniform flame for the immediate and uniform ignition of the powder so that the same will be entirely ignited and consumed at the breech end of the barrel rather than progressively throughout the barrel as is often the case.

With these ends in view my invention consists in a non-fulminate mixture composed and compounded as hereinafter described.

In carrying out my invention, I mix together about 20% of antimony sulfid, 25% of lead sulfocyanid, 50% of potassium chlorate, and 5% of trinitrotoluol. These several ingredients are preferably employed in substantially the proportions indicated, but the proportions may be varied as may be found necessary to secure the best results, and to take into account the ordinary trade variations in the strength of the ingredients. Furthermore variations in the character of the powders with which my improved priming mixture is employed may require some corresponding adjustment of the mixture in order to secure the best results. I do not, therefore, limit myself to the exact proportions given for the several ingredients.

The compounding of the above ingredients produce a fine, grayish-brown powder which by preference is introduced dry into the primer cups in which it is seated by

heavy pressure which results in the reduction of the powder into the form of a thin hard cake in the bottom of the cup. This cake is preferably sealed in place by the application to it of a thin film of collodion which extends over it and up into the side walls of the cup, enough of the collodion entering the cake to bind it thereto. An anvil of any approved construction is then introduced into the primer-cup in the ordinary manner as indicated in my prior Patent No. 962,888 of June 28, 1910.

In the use of my improved primer mixture in rim-fire ammunition, it is preferably wet with a suitable moistening fluid and driven by centrifugal force into the outwardly projecting annular hollow rim of the cartridge shell. By preference it is then covered with collodion applied so as to cover it and extend up upon the side walls of the shell as shown in my prior Patent No. 966,163 of August 2, 1910.

My improved non-fulminate priming mixture is so homogeneous in its character and so easy of ignition that the whole mass ignites practically at the same time and produces a hot and uniform flame leaving the minimum of residue. The flame produced by it penetrates the powder and so diffuses itself therein that the whole mass or body thereof is simultaneously ignited and burned at the breech end of the gun whereby the effect of the slow or progressive burning of the powder upon the barrel and upon the accuracy and efficiency of the ammunition is avoided. My improved non-fulminate priming mixture moreover, contains nothing to amalgamate with the brass of primers and cartridge shells, and therefore avoids the very serious objection attached to the use of all priming mixtures containing mercury in any form.

I do not limit myself, as already stated, to the exact proportions herein given, and further wish it understood that some of the elements may be replaced by their chemical equivalents in such mixtures. Thus, I may see fit to employ sulfocyanid of other metals besides lead, such as the sulfocyanid of copper. Furthermore, instead of employing

potassium chlorate solely as an oxidizing agent, I may employ other oxidizing agents such as barium peroxid.

I claim:—

- 5 A non-fulminate priming mixture composed of antimony sulfid, lead sulfocyanid, potassium chlorate and trinitrotoluol.

In testimony whereof, I have signed this specification in the presence of two subscribing witnesses.

WILLIAM H. BUELL.

Witnesses:

CLARA L. WEED,
GEORGE D. SEYMOUR.