

T. M. DOWN.
BULLET FOR KINEMA TARGETS.
APPLICATION FILED APR. 6, 1914.

1,107,593.

Patented Aug. 18, 1914.

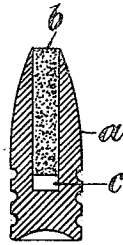


Fig. 1.

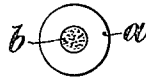


Fig. 2.

WITNESSES:

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INVENTOR:

Thomas Macready Down
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ATTY

UNITED STATES PATENT OFFICE.

THOMAS MACREADY DOWN, OF LONDON, ENGLAND.

BULLET FOR KINEMA-TARGETS.

1,107,593.

Specification of Letters Patent.

Patented Aug. 18, 1914.

Application filed April 6, 1914. Serial No. 829,827.

To all whom it may concern:

Be it known that I, THOMAS MACREADY DOWN, subject of the King of Great Britain, residing at No. 25 Oxford street, London, England, have invented new and useful Improvements in Bullets for Kinema-Targets, of which the following is a specification.

This invention relates to means for indicating hits made by bullets on kinematograph targets and its object is to provide a bullet which, while affording an indication of the place struck on the target, will not sully the surface of the screen which constitutes the target and upon which the kinematograph picture is projected.

It has already been proposed to employ, for giving an indication of the place of impact on a kinematograph target, the well known flash bullets, such as are used for shooting game in the dark and which give a flash of light on impact.

Now when ordinary explosive flash bullets are fired at a kinematograph target, the firing must be frequently interrupted as such bullets soil the surface of the screen and after a limited number of bullets have been fired it becomes necessary to obliterate the marks made on the screen by the bullets, as these marks seriously interfere with the definition of the moving picture.

According to the present invention, while a bullet which gives a flash of light on impact is employed to indicate the spot on the screen hit by the bullet, the flashing substance with which the bullet is charged is of a nature to leave a deposit approximately of the same color as the screen, which latter consequently does not become sullied by the impact of the bullets, and, being a kinematograph screen, is necessarily of a light color.

Although the flash may be of any color it is preferable to charge the bullets with a substance which gives a normally white flash.

A suitable flashing charge for the bullets, which gives a brilliant flash and leaves a white deposit, comprises a mixture of powdered aluminium or magnesium or an alloy thereof and a nitrate or chlorate, for instance nitrate or chlorate of baryta. The composition found most suitable is:—Nitrate of baryta $8\frac{1}{2}$ parts, fine coal $\frac{1}{4}$ part, aluminium 5 parts, and this produces a white flash and leaves a white deposit.

As the flash alone is relied upon to indicate a hit, it is obvious that the projection

of the picture need not be interrupted by stopping the film.

The screen is constructed of iron or steel having a suitable surface for the presentation of the picture.

The accompanying drawing illustrates a bullet suitable for charging with a flashing composition, in which:—

Figure 1 is a longitudinal section, and Fig. 2 a view of the front end of the bullet.

In these figures, *a* is the bullet which is hollow-nosed, being formed with a recess extending toward the base and charged with flashing composition *b*.

It has been found that a better flash is obtained when the flashing charge *b* does not extend quite to the base of the recess in the bullet, but terminates short thereof leaving an air space *c*, as shown.

The flashing charge should be of a nature not to deteriorate when the bullets are kept charged for a reasonable period and is non-dangerous in the sense of being liable to explode under the shock of firing. The latter feature renders the bullets available for being fired from pistols or revolvers.

The duration of the flash can be "detained" or prolonged, for example from $1/120$ to $1/10$ of a second.

The speed of the flash can be slowed by adding to most flash mixtures a negative catalyzing agent such as calcium plumbate, or a substance which serves on one hand to increase the friction, and on the other to retard the explosion, such as zinc oxid, Venetian red, brown umber, powdered quartz, kieselguhr, pulverized asbestos, sand, pumice-stone or powdered glass and the like.

It is obvious that the intensity of the flash can be varied by using larger or smaller charges of the flashing composition.

The bullets can be fired from powerful air or spring guns or pistols as well as from fire arms.

I claim:

1. A bullet for indicating hits on a kinematograph target screen, charged with a composition emitting a flash of light on impact of said bullet and leaving a deposit of the normal light color of said kinematograph target screen.

2. A bullet for indicating hits on a kinematograph target screen, charged with a composition emitting a flash of light on impact of said bullet and leaving a white deposit.

3. A bullet for indicating hits on a kinematograph target screen, charged with a composition containing powdered aluminium and a small proportion of an oxidizing agent.

4. A bullet for indicating hits on a kinematograph target screen, charged with a composition containing powdered aluminium and a small proportion of nitrate of baryta.

5. A hollow nosed bullet for indicating hits on a kinematograph target screen, charged in said hollow nose with a composition emitting a flash of light on impact of said bullet and leaving a deposit of the normal light color of said kinematograph target screen.

6. A hollow nosed bullet for indicating hits on a kinematograph target screen, charged in said hollow nose with a composition emitting a flash of light on impact of said bullet and leaving a white deposit.

7. A hollow nosed bullet for indicating hits on a kinematograph target screen, charged in said hollow nose with a composition containing powdered aluminium and a small proportion of an oxidizing agent.

8. A hollow nosed bullet for indicating hits on a kinematograph target screen, charged in said hollow nose with a composition containing powdered aluminium and a small proportion of nitrate of baryta.

9. A hollow nosed bullet for indicating hits on a kinematograph target screen, charged in the outer portion of said hollow nose with a composition containing powdered

aluminium and a small proportion of an oxidizing agent, and having an air space at the base of said hollow nose.

10. A hollow nosed bullet for indicating hits on a kinematograph target screen, charged in the outer portion of said hollow nose with a composition containing powdered aluminium and a small proportion of nitrate of baryta and having an air space at the base of said hollow nose.

11. A bullet for indicating hits on a kinematograph target screen, charged with a composition consisting approximately of powdered aluminium 5 parts, nitrate of baryta $8\frac{1}{2}$ parts and fine coal $\frac{1}{2}$ part.

12. A hollow nosed bullet for indicating hits on a kinematograph target screen, charged in said hollow nose with a composition consisting approximately of powdered aluminium 5 parts, nitrate of baryta $8\frac{1}{2}$ parts and fine coal $\frac{1}{2}$ part.

13. A hollow nosed bullet for indicating hits on a kinematograph target screen, charged in the outer portion of said hollow nose with a composition consisting approximately of powdered aluminium 5 parts, nitrate of baryta $8\frac{1}{2}$ parts and fine coal $\frac{1}{2}$ part and having an air space at the base of said hollow nose.

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

THOMAS MACREADY DOWN.

Witnesses:

R. A. SMITH,

H. D. JAMISON.

DISCLAIMER.

1,107,593.—*Thomas Macready Down*, London, England. BULLET FOR KINEMA-TARGETS. Patent dated August 18, 1914. Disclaimer filed September 13, 1917, by the assignee, *Winchester Repeating Arms Co.*

Enters its disclaimer to claims 3 and 7, which are in the following words:

"3. A bullet for indicating hits on a kinematograph target screen, charged with a composition containing powdered aluminium and a small proportion of an oxidizing agent.

"7. A hollow nosed bullet for indicating hits on a kinematograph target screen, charged in said hollow nose with a composition containing powdered aluminium and a small proportion of an oxidizing agent."

[*Official Gazette* September 18, 1917.)