

(No Model.)

A. MARTIN.
PROJECTILE.

No. 462,570.

Patented Nov. 3, 1891.

FIG. 4.

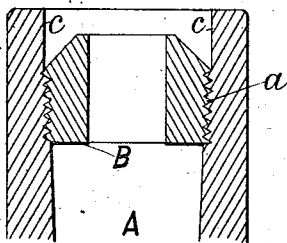


FIG. 5.

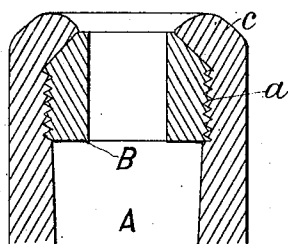


FIG. 6.

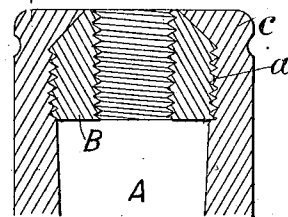


FIG. 1.

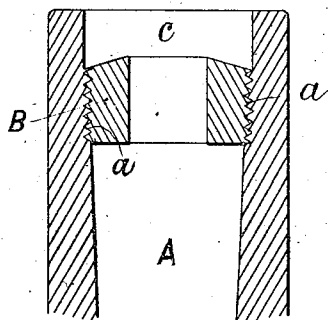


FIG. 2.

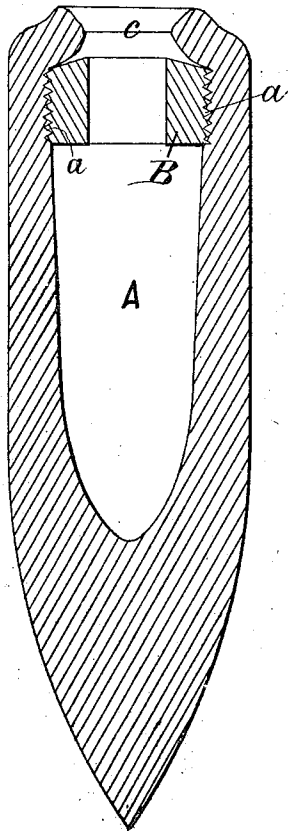


FIG. 3.

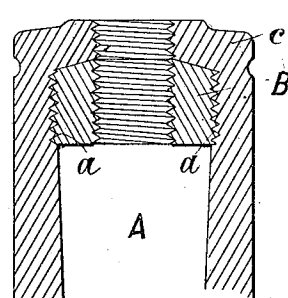


FIG. 7.

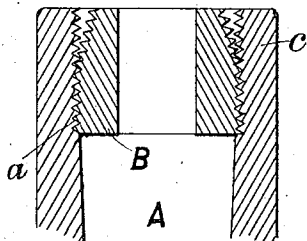
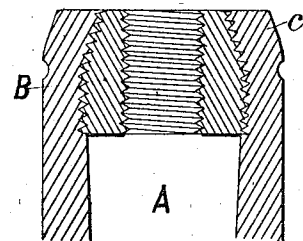


FIG. 8.



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ABRAHAM MARTIN, OF BIRMINGHAM, ENGLAND.

PROJECTILE.

SPECIFICATION forming part of Letters Patent No. 462,570, dated November 3, 1891.

Application filed July 25, 1891. Serial No. 400,752. (No model.)

To all whom it may concern:

Be it known that I, ABRAHAM MARTIN, engineer, at present residing at 192 Birchfield Road, Birmingham, in the county of Warwick, England, have invented new and useful Improvements in the Manufacture of Explosive Projectiles, of which the following is a full, clear, and exact description.

My invention relates to the manufacture of explosive projectiles or shells; and the invention has for its object to provide in the base of the shell a screwed socket for the fuse of sufficient length to prevent the blowing out of the fuse and the consequent failure of the shell to burst under the force of the explosion. According to my invention, the base of the shell is formed by first screwing into the body of the shell a ring or bush and then closing in or contracting the rear end of the shell behind or around the said ring or bush, which is thus imprisoned by the contracted end of the shell, the closed-in base of the shell and the internal ring or bush together, or the bush alone, as the case may be, affording the necessary length of socket for the fuse.

Reference is to be had to the accompanying drawings, forming part of this specification, wherein—

Figures 1, 2, and 3 illustrate by central transverse sections successive stages of closing in the base wholly behind the internal ring or bush, the fuse-socket being formed both in the turned-in portion and in the ring or bush. Figs. 4, 5, and 6 show the stages of closing in the shell behind a partially-coned ring or bush in which alone the fuse-socket is formed. Figs. 7 and 8 show a somewhat similar form, the conical and closed-in portions being threaded.

The same letters of reference denote like parts in all the figures.

In either case the open cylindrical rear end of the shell A is cut with an internal screw-thread *a*, in which the externally-threaded steel ring or bush B is to be screwed.

In the example shown in Figs. 1 to 3 the base end of the shell is screw-threaded internally for a sufficient distance, as shown at *a*, to receive the ring or bush B and leave projecting sufficiently beyond said ring or bush the part *c*, which is to be closed in or contracted, as hereinafter described. This part may either be first bored out sufficiently to

avoid the necessity of screw-threading it, or it may be screw-threaded along with *a* and the screw-thread be afterward turned off. The ring or bush B, having its external cylindrical portion screw-threaded and the hole for the fuse left plain, is then screwed home, and the part *c* of the shell having been sufficiently heated is placed, point downward, in a bed-die and subjected to the pressure of a closing-in die or succession of dies, by which the part *c* is brought to the form shown in Fig. 2 and finally to that shown in Fig. 3, a central hole being preserved in the inwardly-turned end *c* by a central mandrel or core carried by the die. This hole extending through the turned-in end of the shell and also through the ring is afterward tapped, as shown in Fig. 3, to receive the fuse, the total length of screw-threaded socket thus formed conjointly by the ring and turned-in portion of the shell being sufficient to prevent stripping of the screw-thread of the fuse.

In the case of a bushing B of the form shown in Figs. 4, 5, and 6 its cylindrical part is screw-threaded, as before, but it is extended in the form of a cone, so that the fuse-socket shall be formed in the bushing only. It is screwed into the shell, as before, and the part *c* of the latter is then heated and closed in around the conical part of the bushing by dies, so as to imprison on the bushing, as shown in Fig. 5, after which the excess of the closed-in portion is turned off and the fuse-socket tapped to receive the fuse, as shown in Fig. 6.

In Figs. 7 and 8 the bushing is coned to a lesser degree and the conical as well as the cylindrical portion is screw-threaded, the whole of the part of the shell which incloses the bushing being screw-threaded to correspond, so that the thread of the part *c*, when closed in, will engage with that of the conical part of the bushing, as shown in Fig. 8.

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

1. A shell or explosive projectile having the base formed by closing in or contracting the rear end of the body of the shell behind and around an externally-threaded ring or bushing screwed into the internally-threaded body

of the shell, substantially as and for the purpose specified.

2. In an explosive projectile or shell, the combination of an internal ring or bushing
5 and a base formed by the inwardly-turned body portion in rear of the ring, and a screw-threaded socket extending through both to receive the fuse, substantially as specified.

3. In an explosive projectile or shell, the
10 combination of the internally-threaded body portion with an externally-screwed bushing, of partly-cylindrical and partly-conical form, screwed therein, the rear end of the body por-

tion being contracted around the conical part of the bushing, as described. 15

The foregoing specification of my improvements in the manufacture of explosive projectiles signed by me this 10th day of July, 1891.

ABRAHAM MARTIN.

Witnesses.

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