

No. 658,231.

H. BICKEL.
SHELL.

Patented Sept. 18, 1900.

(Application filed June 23, 1900.)

(No Model.)

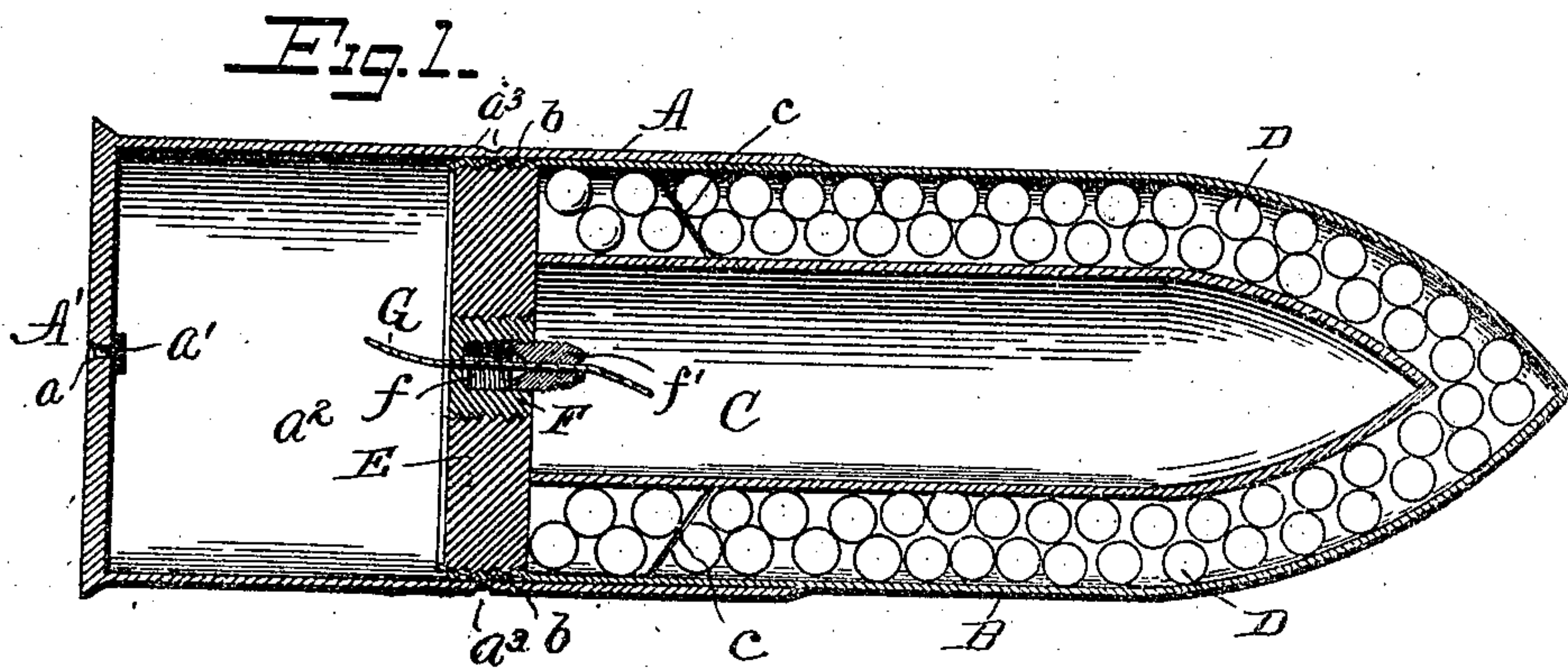
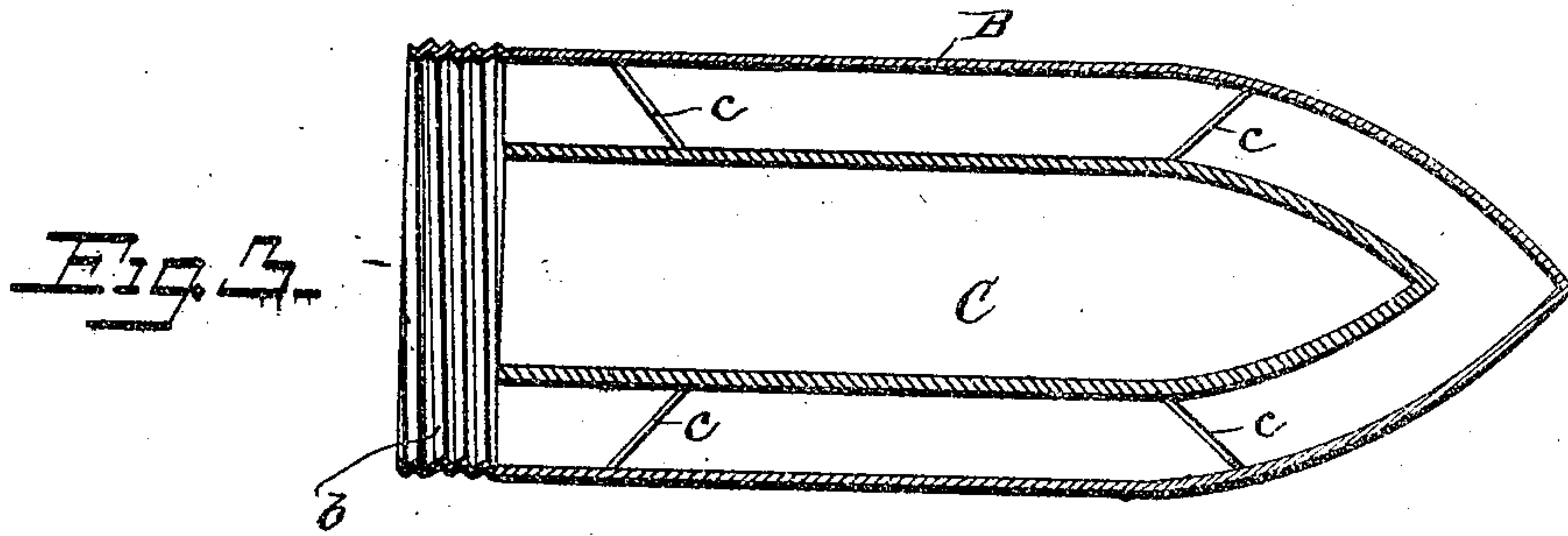
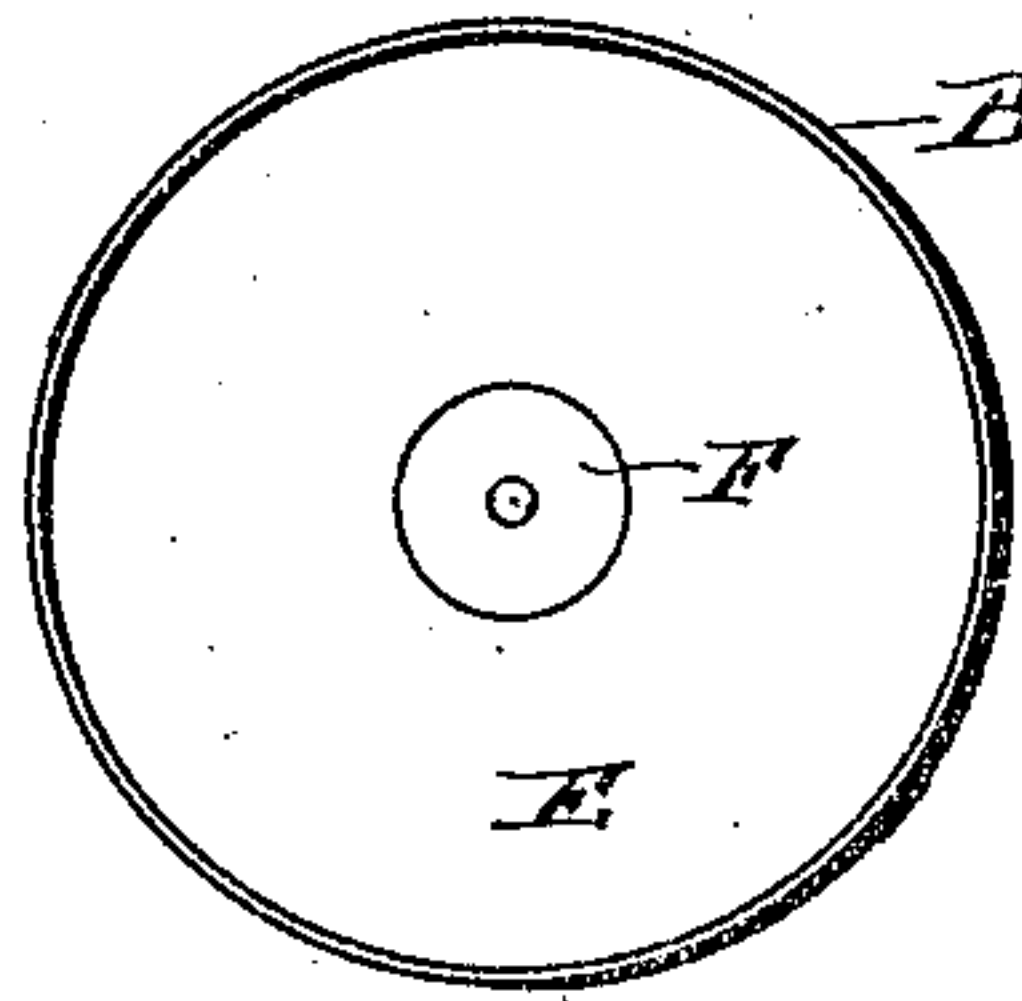


Fig. 2.



WITNESSES:
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SHELL.

SPECIFICATION forming part of Letters Patent No. 658,231, dated September 18, 1900.

Application filed June 23, 1900. Serial No. 21,350. (No model.)

To all whom it may concern:

Be it known that I, HIRAM BICKEL, a citizen of the United States of America, residing at Guffey, in the county of McKean and State of Pennsylvania, have invented new and useful Improvements in Shells, of which the following is a specification.

This invention relates to improvements in explosive shells or cartridges for rifles or guns of large caliber; and the object of said invention is to provide a shell of this character which is of peculiar construction and designed to be exploded by a time-fuse and hurl a large number of balls in every direction to afford a maximum degree of destructiveness.

The invention contemplates the production of a shell or cartridge in which the projectile carries a time-fuse for exploding the same, the said projectile comprising an outer shell or casing, an inner shell or canister containing the explosive, and means for connecting the outer and inner shells and to provide for the reception of an adjustable time-fuse, the said inner and outer shells being of such relative size as to leave a space between them to receive the balls.

The invention consists in the peculiar construction and combination of the parts which make up the shell or cartridge, all as is hereinafter fully described, and specifically pointed out in the claims.

In the accompanying drawings, forming a part of this specification, and in which like letters of reference indicate similar parts throughout the several views, Figure 1 is a vertical sectional view through a cartridge or explosive shell constructed in accordance with my invention. Fig. 2 is a transverse sectional view on the line 2 2 of Fig. 1. Fig. 3 is an enlarged detail view.

In carrying out my invention I employ a cartridge-shell A, comprising the head A', which is provided centrally with an opening a to receive the firing cap or primer a' , the said cartridge-shell being adapted to hold the projectile, hereinafter described, and form a chamber a^2 for the powder charge which is to send the projectile from the rifle or gun.

The projectile is made up of an outer shell or casing B, pointed at its forward end and at its rear open end provided with threads b , swaged thereon, as shown in the detail view, Fig. 3.

Within said shell or casing B is placed an inner shell or canister C, having its forward end correspondingly pointed, while its rear open end terminates a slight distance from the rear end of the outer shell or casing. These shells B and C are of such relative size as to leave a space between them, and the inner shell is held in proper position within the outer shell by means of outwardly-projecting rods c , as shown. The said intermediate space contains the balls D, while the inner shell or canister contains the explosive of the projectile.

Screwed into the rear end of the shell or casing B is an annular nut or head E, threaded at its outer and inner edges, and when in place this nut or head covers the chamber which contains the balls and provides a central opening to receive the device which carries the time-fuse. Said device consists of a round nut F, having an opening f there-through threaded at its inner end to receive a nipple f' , and through this opening and nipple is passed a time-fuse G, regulated by screwing the nipple into the round nut. The outer shell is also provided with an indentation a^3 , swaged therein to engage the threads at the end of the projectile and hold the parts firmly together.

In assembling the parts the shell C is placed within the shell B, and the cylindrical balls D are dropped into the space provided therefor between said shells, after which the annular nut or section E of the head of the projectile is screwed into the end of the shell or casing B against the canister C. The explosive is then placed into the canister through the opening in said nut, and the fuse-carrying nut F, after adjusting said fuse therein, is screwed into the aforesaid opening, completing the projectile. The projectile is now inserted into the cartridge-shell and attached thereto, said cartridge-shell having been previously loaded with the required amount of powder.

An explosive shell or cartridge made up in the manner hereinbefore described can be produced at comparatively small cost, and the parts are so arranged as to give simplicity of construction and provide for readily assembling said parts, also making provision for the required adjustments. The effective-

ness or destructive power of such a cartridge will be readily apparent, for it will be understood that when the projectile is fired from the rifle or gun the powder charge of the cartridge will ignite the fuse, and the latter being properly timed the spark will not reach the explosive of the projectile until said projectile arrives at its destination, predetermined by the powder charge of the cartridge. The explosion of the projectile will hurl the balls in every direction and prove considerably more destructive than the flying pieces of an ordinary solid shell.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In an explosive shell or cartridge, the combination with the cartridge-shell A, of a projectile comprising an outer shell or casing threaded at its inner end, an inner shell or canister disposed within said casing and providing an intermediate space to receive balls or the like, an annular nut screwed into the

end of the outer casing, a nut screwed into the opening of said annular nut, said smaller nut having an opening threaded at one end, and a nipple screwed into said opening and adapted to carry the time-fuse, substantially as shown and for the purpose set forth.

2. A projectile for rifles or guns of large caliber, comprising an outer shell or casing threaded at its rear end, an inner shell or canister disposed in said outer shell or casing, an annular nut screwed into the outer shell or casing against the end of the canister, a nut screwed into said annular nut and provided with an opening threaded at one end, a nipple adjustable in said opening, and a time-fuse carried by said nipple, substantially as shown and for the purpose set forth.

In testimony whereof I affix my signature in presence of two witnesses.

HIRAM BICKEL.

Witnesses:

EDNA BICKEL,
ALFRED T. EVANS.