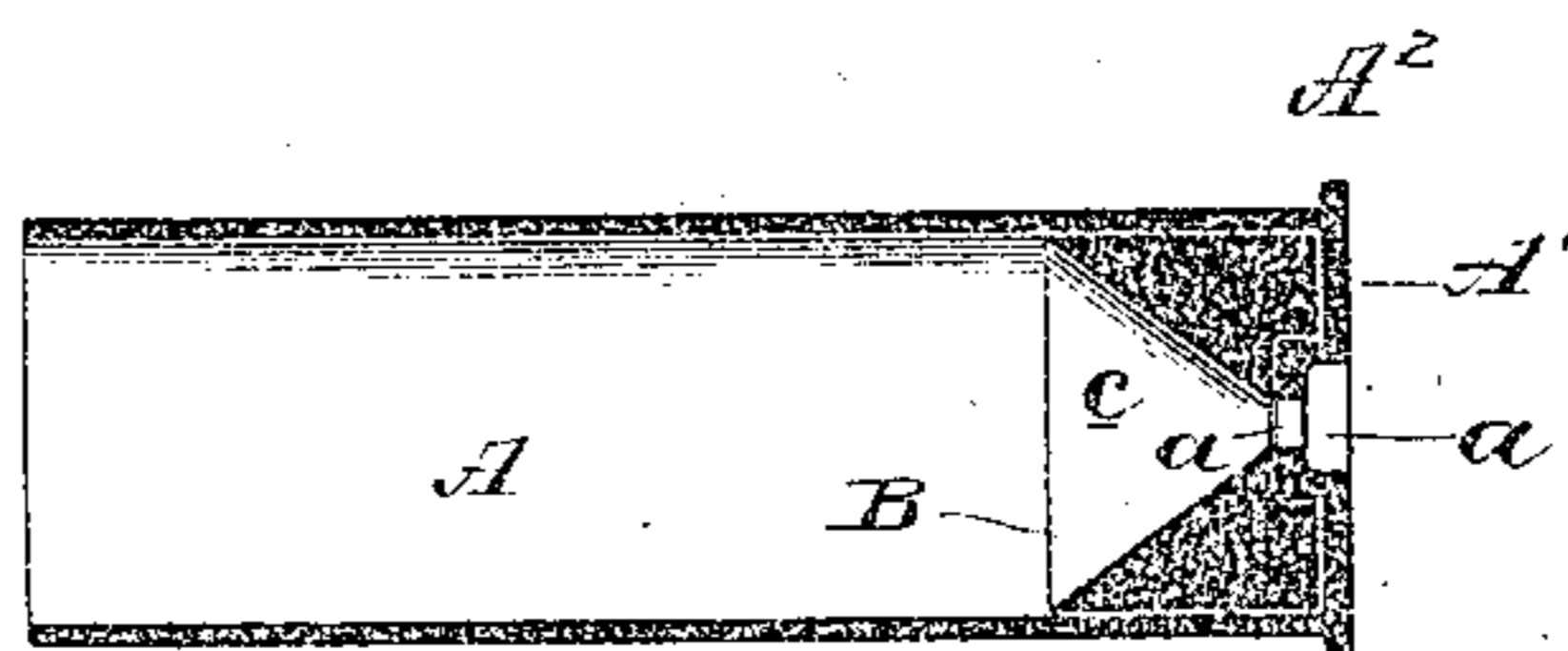


(No Model.)

W. R. LINDSEY.
CARTRIDGE SHELL.

No. 408,246.

Patented Aug. 6, 1889.



Witnesses
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Albert Popham

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UNITED STATES PATENT OFFICE.

WILLIAM R. LINDSEY, OF ARCATA, CALIFORNIA.

CARTRIDGE-SHELL.

SPECIFICATION forming part of Letters Patent No. 408,246, dated August 6, 1889.

Application filed December 27, 1888. Serial No. 294,792. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM R. LINDSEY, a resident of Arcata, in the county of Humboldt and State of California, have invented certain new and useful Improvements in Cartridge-Shells; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to cartridge-shells for fixed ammunition, and particularly those used to hold the prepared ammunition for rifles or shotguns.

It has been found that the shells ordinarily employed to contain a fixed charge for a rifle or shotgun, and which are stamped or drawn entirely from sheet metal, have not the proper strength to resist the impact of the explosive gases evolved in the combustion of the powder used, and in consequence the shells become so expanded both laterally and rearwardly as to be too large for the chamber of the gun, and consequently are worthless. It has further been ascertained by practical experiment that the recoil usual to some guns is due in a large measure to the improper shape of the rear end of the cartridge-shell, whereby the expansive force of the powder is so suddenly developed as to react violently while overcoming the inertia of the bullet or charge of shot, and in consequence the gun is caused to rebound or kick the shoulder of the user.

With a view to overcome the defects above mentioned, my invention consists in certain features of construction and combinations of parts, that will be hereinafter described, and pointed out in the claim.

Referring to the illustration of my device, the view given represents a longitudinal section of the cartridge-shell through its axial center.

A represents the cylindrical wall of the cartridge-shell. This is preferably struck or drawn from sheet-brass and is rendered seamless by the methods of manufacture usual to the construction of seamless shells, the rear wall A' being closed, with the exception of a central perforation *a*, that will be again alluded to, said rear wall being also provided with a guard-rim A², that limits the insertion

of the shell. The center of the rear wall A' is recessed inwardly to produce a shallow chamber *a'*, in which the detonating material is secured in the usual manner.

Within the caliber of the cylindrical shell A the breech-block B is seated on the rear wall A' of the shell A, said breech-block being made of suitable metal, brass being preferred. It is of such a proportionate length to that of the shell that a true conical cup *c* may be produced by reaming the same out with a suitable drill or reamer.

The apex of the conical cavity *c* made in the breech-block B coincides with the small firing-orifice *a* in the center of the chamber *a'*, so that a continuation of this orifice is formed at the apex of the conical rear end of the shell A, produced by the insertion of the breech-block in the manner stated.

Any suitable means of fastening the breech-block B in place within the shell A may be employed, such as brazing of the parts together, or a sweating-joint of solder may be made to fasten the block in close contact with the rear wall of the shell A, into which it should be fitted to drive tightly in process of manufacture.

I prefer to insert a separate block of solid metal within the thin sheet-metal shell of a cartridge for fixed ammunition, on account of the facility of manufacture of the shell in this manner, and thus embody my improvement at a moderate cost for production.

The advantages in use of my improvement consist in the increased durability afforded the rear end of the shell, as by the insertion within the seamless shell of a re-enforcing block B and securing it therein to its rear side and end wall the thin wall of the shell is strengthened and rendered proof against the expansive force of the explosive gases of the powder, so that the durability of the device is largely increased, and is rendered available for reuse for an indefinite number of times.

The construction of a cartridge-shell as hereinbefore described is further of great advantage in the prevention of objectionable recoil of the rifle or shotgun with which it is conjunctively employed, as the conical form of the rear end of the shell A provides for the ignition of a small quantity of powder pri-

marily, which is sufficient to overcome the inertia of the ball or shot. Then there is a progressive ignition of the charge instead of an instantaneous generation of expansive force by the simultaneous ignition of a large area of powder, as is effected in the ordinary cartridge-shell having a flat rear wall.

The graduation of the initial combustion of the explosive agent, as afforded in the conical breech of the cartridge-shell which is the subject of the present invention, obviates the severe recoil of the gun that is due to the reaction of the explosive force in overcoming the inertia and frictional resistance of the ball or shot charge at the instant of ignition, thus rendering the arm more serviceable and comfortable for continuous use.

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

As a new article of manufacture, a cartridge-shell made wholly of metal, the base thereof having a recess in its outer face and a projection on its inner face, and a block located within the shell and provided on its rear face with a recess adapted to receive the projection on the inner face of the base, and provided with a conical cavity in its front face, the said block being rigidly secured to the shell, substantially as set forth.

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

WILLIAM R. LINDSEY.

Witnesses:

STEPHEN SHERWOOD,
O. P. SHERWOOD.