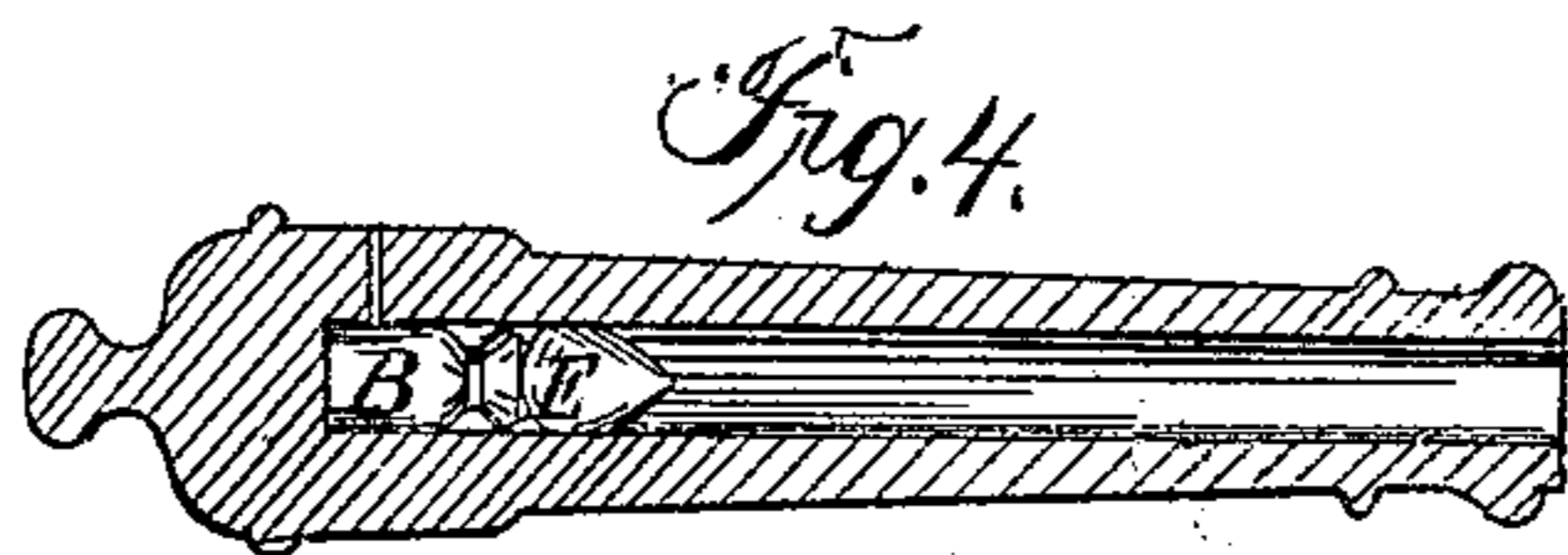
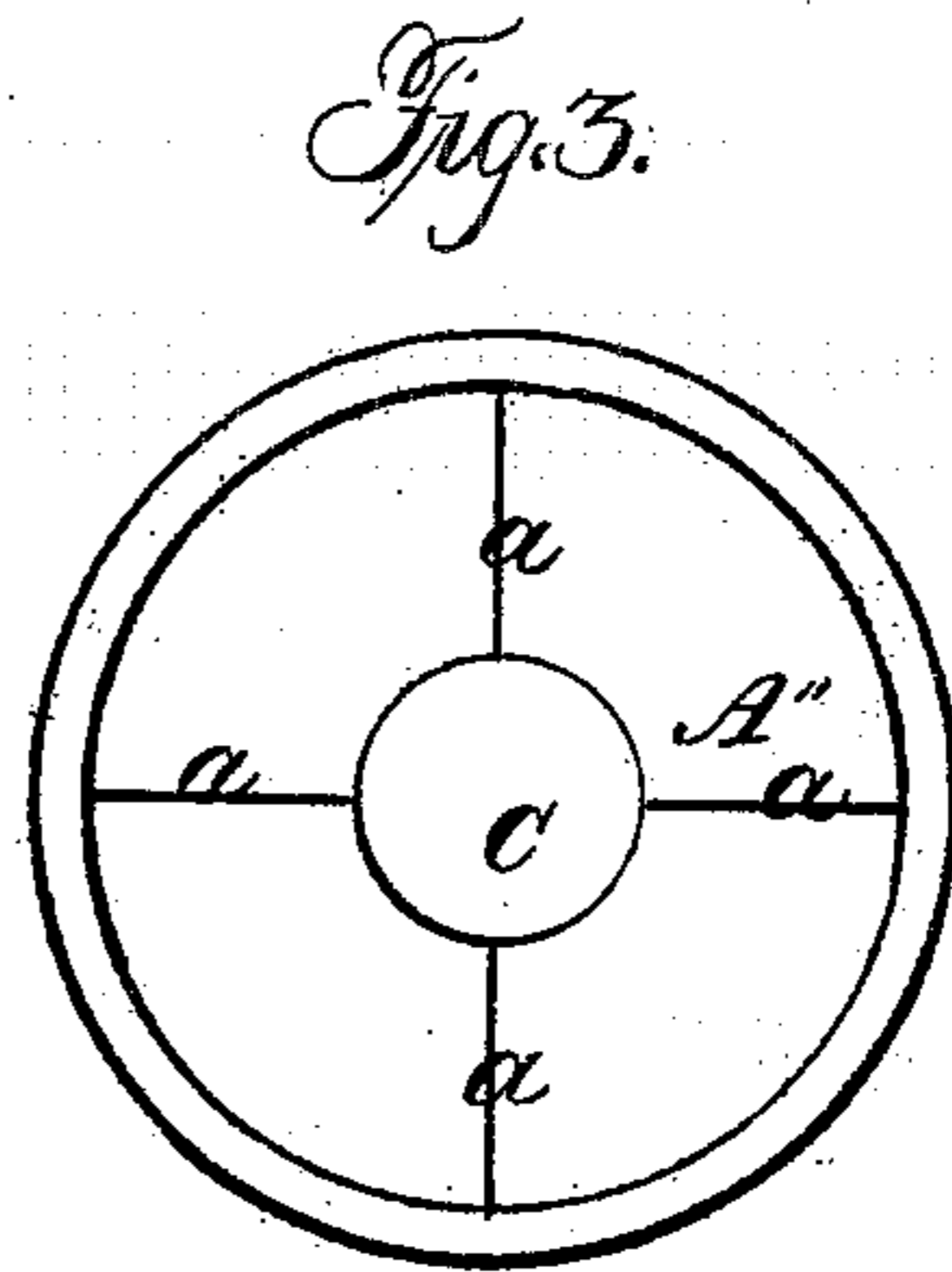
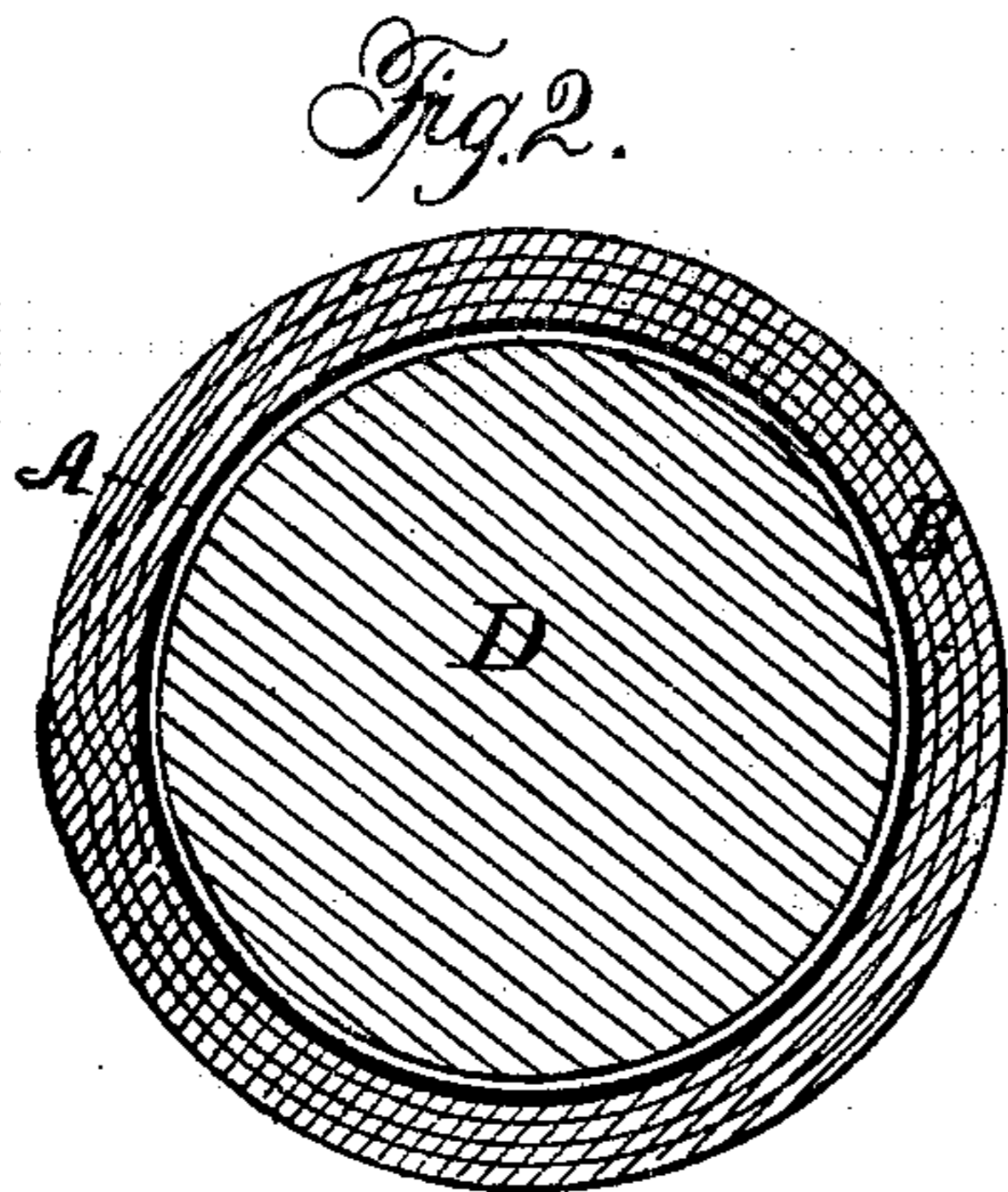
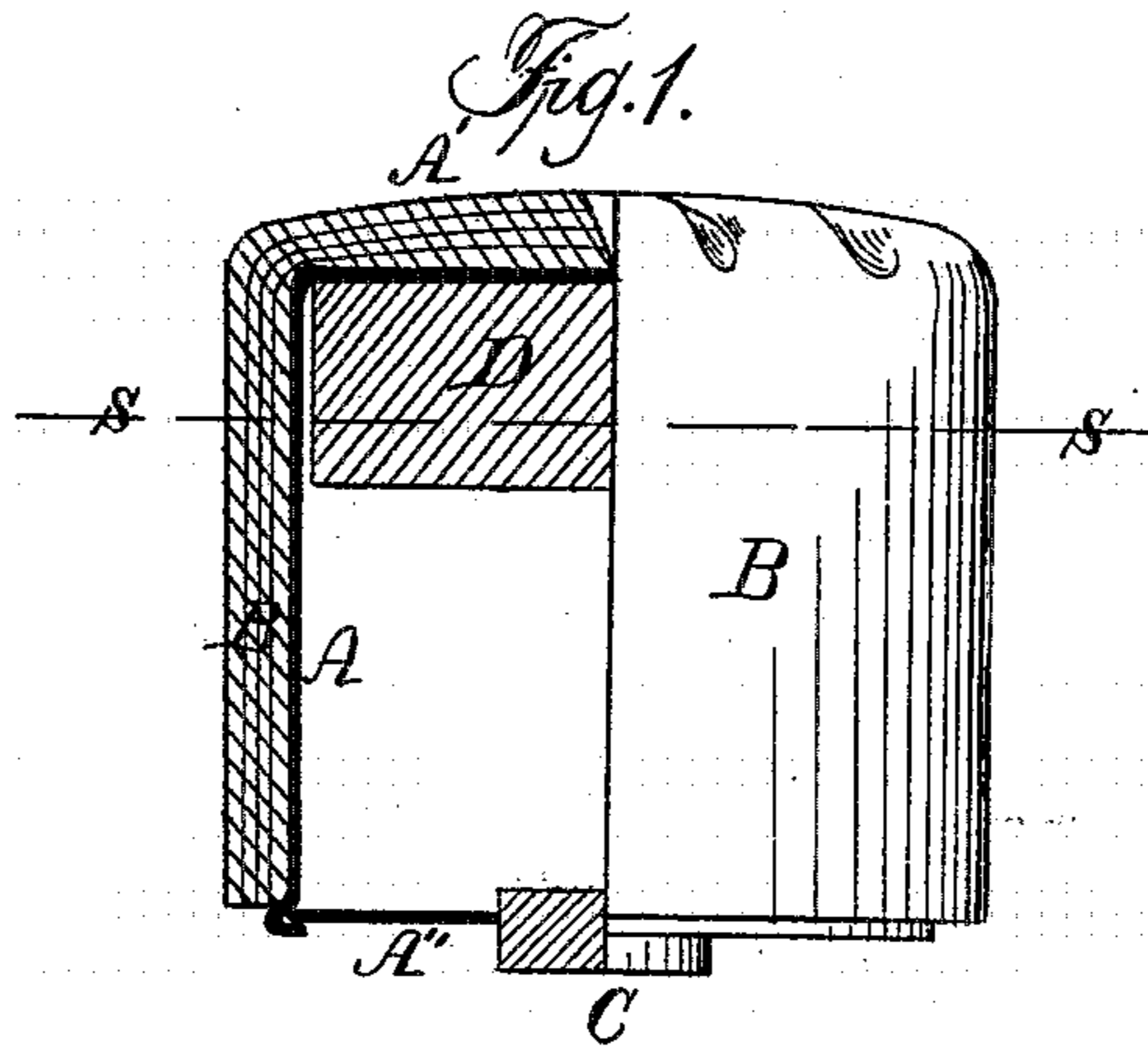


B. B. HOTCHKISS.

Cartridge.

No. 29,080.

Patented July 10, 1860.



WITNESSES

Wm. James D. Jeter
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UNITED STATES PATENT OFFICE.

B. B. HOTCHKISS, OF SHARON, CONNECTICUT.

IMPROVEMENT IN CARTRIDGES.

Specification forming part of Letters Patent No. 29,080, dated July 10, 1860.

To all whom it may concern:

Be it known that I, B. B. HOTCHKISS, of Sharon, in the county of Litchfield and State of Connecticut, have invented a new and Improved Cartridge, which discharges itself from the gun, and also cleans the bore of the gun, keeping it free from dirt, whereby the rapidity and safety of firing are much increased; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings.

The nature of my invention consists in a compound cartridge-case, the interior of metal and the exterior cloth or equivalent soft substance, so constructed that as the case expands by reason of the explosion within it, the covering is forced into close contact with the bore of the gun, and in its passage out it tends to clean or sponge the bore, leaving it in condition for another charge. Also, in a metallic cartridge-case, the forward end of sufficient strength to withstand the explosion of the powder, while the rear end is so weak that it readily gives way to the force of the explosion and causes the case to be discharged from the gun by the action of the powder. Also, in dividing the metal at the rear end of the case along two or more radial lines, and again joining the edges by a weak solder, for the purpose of causing the metal easily to part along those lines and of allowing the force of the explosion acting upon the front of the case to discharge the entire case from the gun. Also, in a block of wood, plate of metal, or other suitable substance, standing in the forward end of the cartridge for the purpose of better sustaining the force of the explosion, and of giving the cartridge-case momentum for the purposes hereinafter explained. Also, in extending the soft covering over the end of the metal case, so that it shall be pinched between the metal case and the base of the ball, and thereby be more effectually prevented from slipping off from the case by the friction in the bore of the gun.

To enable others skilled in the art to make and use my improved cartridge I will proceed to describe its construction and operation by the aid of the drawings, in which—

Figure 1 is a half section and half elevation of my improved cartridge. Fig. 2 is a trans-

verse section of the same through the line S S in Fig. 1. Fig. 3 is a rear view of the same, and Fig. 4 is a section of a cannon containing my improved cartridge and a ball.

Similar letters of reference indicate like parts in all the figures.

A is a cylindrical case made of sheet metal, closed entirely at the front end A', where it is made thicker and stronger. At the other end A'' it is nearly closed, a hole being left in the center for introducing the powder, which hole is stopped by a cork, C. The metal of which this end is composed is slitted radially from the center outward in several places, as shown by *a*, in Fig. 3, and these slits are united with soft solder in such a manner that while they are impervious to fire or dampness they readily give way to any considerable force which tends to tear them apart. I make this case somewhat smaller than the bore of the gun, and wrap around the exterior a covering of cloth, B, which is turned over and fastened upon the front end A' of the case by stitching or other suitable means, as represented. A block of wood or other suitable substance, D, is placed within the case A, and in contact with the end A', so that when the powder is ignited its force is transmitted through the nearly inflexible block D to the end A'. By this the liability of blowing out that end of the case is decreased, and the weight of D is such as to give sufficient momentum to carry the case A clear of the gun, should the expansion of the gases generated by the powder not be sufficient for that purpose. The operation is as follows: The case A is filled with powder and the hole in the head A'' closed with the cork C. The cartridge is now water-proof, and may be dipped in tallow or oil for the purpose of lubricating the bore of the gun. It is then slipped home to its place, and an expansive or other ball, E, placed in contact with it, as shown in Fig. 4. It is then pricked through the touch-hole, or vent, and fired in the usual manner, the tool inserted through the touch-hole being made to puncture through the metal of the case. As the powder is burned and expands it bursts out the end A'', and expands the case A laterally until it completely fills the bore of the gun. It then forces the case A, with its covering and anything which may be before it, out of the muzzle, the cloth

B cleaning and lubricating the bore, ready for the succeeding shot, whereby the necessity of sponging is done away with and the time formerly spent in that process is saved. As the force of the powder is transmitted through the cartridge to the ball E, the end of the former is firmly pressed against the latter, and the covering B is so compressed between them that it is prevented from stripping off the cartridge and being left in the gun.

In shooting over the heads of troops, where the cartridge-cases might do injury by falling too near the gun, the block D may be made of metal, or otherwise increased in weight, so as to go to any required distance before falling. This block may also be replaced by a sheet of metal if desired.

Metallic cartridge-cases have been heretofore used in breech-loading cannon, where they could be removed after firing; but they have not been hitherto used in muzzle-loading cannon, from the difficulty of removing them therefrom. They are not discharged with the shot, as the friction induced by the expansion of the bare metal against the interior of the bore is too considerable to be overcome by the strength of the front end of the case.

My compound case, constructed as herein described, and properly lubricated, is discharged without difficulty, and at the same time cleans the gun and lubricates it, whereby I am enabled to fire with twice the rapidity and with greater safety than heretofore.

I am aware that Mr. Whitworth, of Man-

chester, England, has used a wad for the purpose of causing the explosion to lubricate and cleanse the gun, and I therefore do not claim this principle broadly; but

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

1. The compound cartridge-case A B, composed of metal and cloth, or other soft material, combined substantially in the manner herein described, so as to be removed from the gun by the explosion of the powder, and also to sponge the gun in its passage through the bore, substantially as above specified.

2. A metallic cartridge-case with a strong front end and weak back end, for the purpose of causing it to be blown out of the gun by the explosion of the charge.

3. Radially dividing the metal of the back end of the cartridge-case and joining it by weak solder, substantially as and for the purpose herein described.

4. The block D, of wood or other suitable material, in the forward end of the cartridge, for the purpose of strengthening the end of the case A, and giving momentum to the structure, substantially as herein described.

5. Extending the covering D over the front end of the case A, substantially as and for the purpose above set forth.

B. B. HOTCHKISS.

Witnesses:

THOMAS D. STETSON,
G. H. BABCOCK.