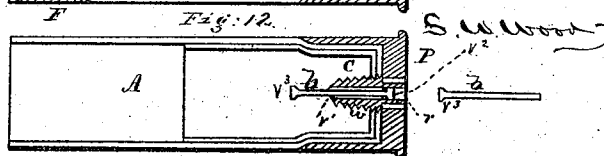
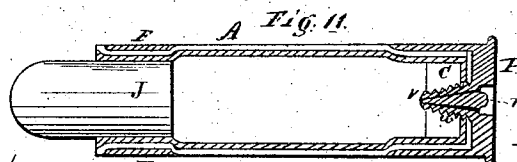
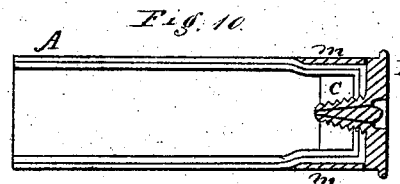
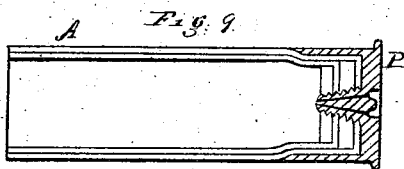
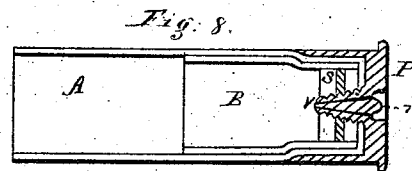
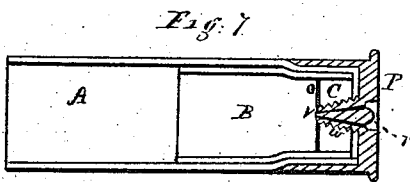
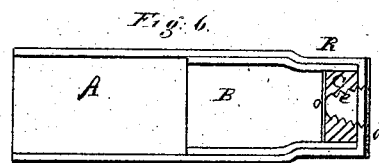
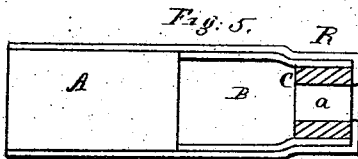
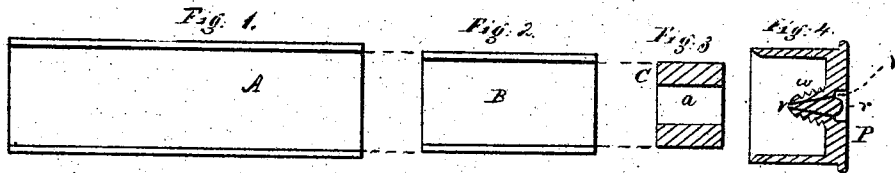


S. W. WOOD.
CARTRIDGE-CASES.

No. 178,698.

Patented June 13, 1876.



Witnesses.

L. W. Kiddle
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S. W. Wood

UNITED STATES PATENT OFFICE.

STEPHEN W. WOOD, OF CORNWALL, NEW YORK.

IMPROVEMENT IN CARTRIDGE-CASES.

Specification forming part of Letters Patent No. 178,698, dated June 13, 1876; application filed November 15, 1875.

To all whom it may concern:

Be it known that I, STEPHEN W. WOOD, of Cornwall, county of Orange, and State of New York, have invented new and useful Improvements in Cases for Cartridges; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawing, making part of this specification, in which—

Figures 1, 2, 3, 4, 5, 6; 7, 8, 9, 10, 11, 12 represent the improvements in the various stages of the process of manufacture.

My invention relates to a case for a cartridge composed of a removable and adjustable base or head, so constructed that it (the head) may be used separately upon different bodies.

The first part of my invention consists in a case for a cartridge, the body of which is a cylindrical tube folded over at one end, and a wad having a central opening with a screw-thread formed therein to receive a corresponding screw projecting inwardly and centrally from the independent removable and adjustable cup-shaped head, substantially as herein set forth; also, in a case for a cartridge, of folding over one end of a re-enforce, and confining this folded end between two wads, substantially in the manner herein described; also, in a case for a cartridge, of a disk of metal, or other suitable material, on the interior of the body, composed of fibrous material, substantially in the manner and for the purpose herein set forth; also, in a case for a cartridge, of reducing a portion of the front or open end thereof, and fitting a re-enforce thereto, substantially in the manner herein set forth; also, in a case for a cartridge, of a cap-ejector to expel the exploded cap from the nipple or anvil, constructed substantially in the manner herein described.

Like letters indicate corresponding parts in all of the figures.

A in the accompanying drawings represents the body of a cartridge-case, which is composed of any suitable material, and in the commencement of the process of manufacture is a simple cylinder, as represented in Fig. 1, open at both ends, and of equal diameter. The several other parts required to complete the body of a case for a cartridge of this description

consist of the interior re-enforce B and wad C, as represented in detached Figs. 2 and 3, and a removable and adjustable cup-shaped head, Fig. 4.

After having prepared the cylindrical body A of this case, a portion of one end thereof is reduced in diameter, and folded over, as represented in Fig. 5, and the re-enforce B, which is also reduced (or may be reduced therewith at the same time) to correspond, is placed within the body A, and the wad C placed within the re-enforce, as also shown in Fig. 5, when the several parts thus prepared are finally compressed tightly together with punch and die, in the usual manner, as shown in Fig. 6.

To more perfectly form the female screw in the wad *c*, a male screw is placed within the blank-opening *a*, Fig. 5, before the wad is compressed, and in the process of compressing and hardening it the female screw *e* is formed by forcing the wad around and against the male screw, thereby taking form the same as though the thread were cut therein in the usual manner, by tap, after the wad has been compressed.

To cut a screw-thread in a wad of fibrous material with a tap is difficult, and when so cut is liable to be ragged and imperfect; hence the forming of the screw-thread therein by compression.

Having proceeded thus far in the process of making the body of a cartridge-case, having folded a portion of the end, and reduced and shaped the exterior, compressed the wad, and formed the screw-thread therein, a disk, *o*, of paper or other suitable material, is placed over the opening *a*, on the interior surface of the wad, to prevent the powder escaping from the body A before the head P is placed thereon.

An exterior cover, *d*, may also be placed upon the outer end of the case, which, though not absolutely necessary, would add to the protection of the body, and more neatly finish the whole.

In loading a case for a cartridge, whether it be with shot and wad or bullet and wad, the tendency, when forcing either the wad or bullet into the end of the case, is to expand it laterally; and as a case should fit the chamber of the arm in which it is to be used, the

slightest enlargement prevents the insertion of the cartridge into the chamber. Therefore, to prevent such enlargement of the front end of the case, a re-enforce, F, is placed over or around the front open end, as represented in Fig. 11.

Having completed the body A for the reception of the head P, I will proceed to describe the latter. One form of this head P is represented in Fig. 4, and consists of a cup-shaped base to receive and surround the reduced end R of the body A, and is provided with a screw, *w*, projecting from its inner surface centrally, which central screw enters into a corresponding female screw, *e*, formed in the wad *c*, before referred to, by which the body A is firmly retained within this cup-shaped head when the cartridge is being fired; and to facilitate the removal of the head P from the body A after the charge has been fired, and to more readily place the head upon a new case or body, the centrally-projecting screw *w* is made conical, as represented in the several figures. On the exterior of the head P, and directly opposite the inwardly-projecting screw *w*, is an anvil or nipple, *r*, of any desired form, upon which to explode the percussion-cap to discharge the gunpowder in the body A, the flame of the fulminate passing through the channels *v v*.

Fig. 7 represents a central longitudinal section of a case for a cartridge complete, consisting of the body A, re-enforce B, wad C, head P, and inside disk *o*.

In cartridges of large caliber, such as may be required in cannon or Gatling guns, a metal disk, *B*, may be employed in the base of the body, through which the screw *w* on the head P may pass in entering the wad, and taking into a screw-thread formed in the center thereof, to assist in withdrawing the empty case from the chamber of the gun after the discharge.

To give additional strength to the case A, to provide still further against the escape of gas and the destruction of the body, the interior re-enforce B is folded over at one end, and this folded end placed between two wads, and the whole firmly swaged into the base of the body A, as represented in Fig. 9.

In Fig. 10 the interior re-enforce B is folded over, and extends the entire length of the body A, the two corresponding in general configuration.

Having completed the construction of the several parts of the case, and adapted each to the other, so that they may be united into and form a perfect cartridge-case, and so constructed the head that it may be removed from an exploded case, and readily adjusted

to a new body to be fired, it is found necessary to devise means by which the exploded percussion-cap may also be removed from the anvil or nipple *r*, in order to be replaced by a new cap; and to effect this purpose the stationary anvil or nipple *r* is furnished with an ejecting-rod, *b*, fitted loosely into the channel *v*, Fig. 12, formed therein, leaving sufficient space around the ejector-rod to allow the flame of the fulminate from the percussion-cap to pass into the body of the case to explode the powder therein.

To prevent the ejector-rod from falling out in the act of ejecting an exploded cap from the anvil or nipple, the inner end *v'* is upset or slightly headed, as shown in Fig. 12.

Having thus fully described my improved case for a cartridge, what I claim therein as new, and desire to secure by Letters Patent, is—

1. A case for a cartridge, consisting of a cylindrical body folded over at one end, a wad having a central opening, with a screw-thread formed therein, and a cup-shaped head having an inwardly and centrally projecting screw, the whole constructed substantially as herein set forth.

2. In a case for a cartridge, an interior re-enforce, one end of which is folded over and confined between two wads, substantially as described.

3. In a case for a cartridge, a disk of metal or other like suitable material, in combination with an interior fibrous wad or wads, substantially as herein specified.

4. A case for a cartridge, having a portion of the front or open end reduced and re-enforced, substantially in the manner herein described.

5. In a case for a cartridge, a stationary nipple or anvil provided with an ejecting-rod, constructed and operating substantially as described.

6. A metallic base for cartridge-shells, having an inwardly-projecting tapered screw for securing said base to the cartridge-shells, substantially as herein set forth.

7. In the manufacture of cartridge-cases of paper or other suitable fibrous material, the process, substantially as herein described, of forming the female screw-thread in the base thereof, for the reception of the male screw of the metallic head, consisting in placing a screw-threaded mandrel in the opening, and compressing the wad or base of the case around it, as set forth.

S. W. WOOD.

Witnesses:

GEO. SMITH,
E. S. HYDE.