

C. E. SHERMAN.
CARTRIDGE CASE.
APPLICATION FILED AUG. 12, 1918.

1,330,144.

Patented Feb. 10, 1920.
2 SHEETS—SHEET 1.

Fig. 1.

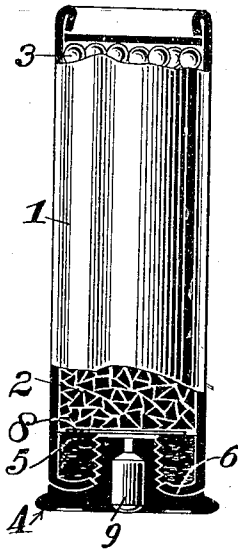
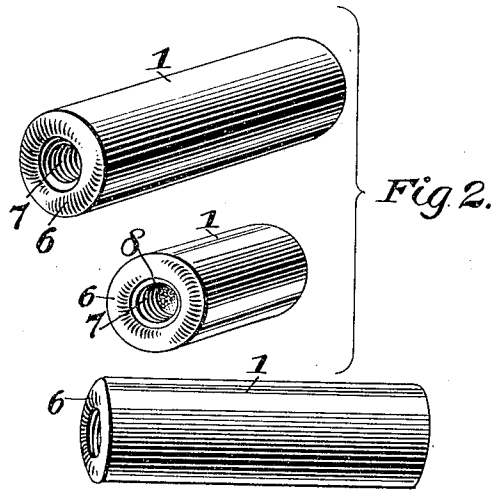


Fig. 3.

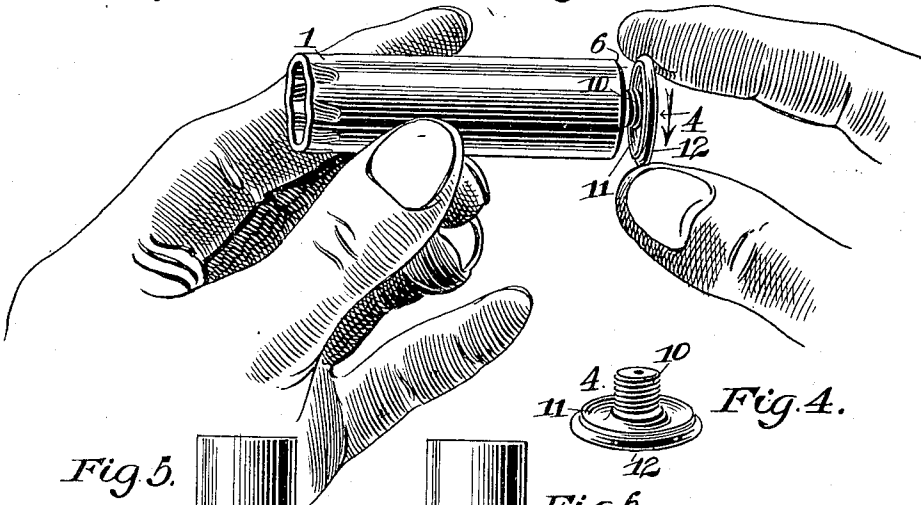
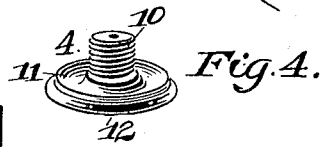


Fig. 5.

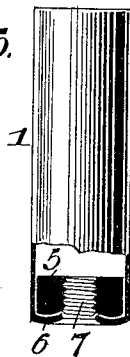
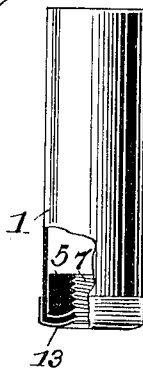


Fig. 6.



WITNESSES

J. B. Schrott

INVENTOR

Chester E. Sherman

BY

Mum & Co
ATTORNEYS

C. E. SHERMAN.
CARTRIDGE CASE.
APPLICATION FILED AUG. 12, 1918.

1,330,144.

Patented Feb. 10, 1920.
2 SHEETS—SHEET 2.

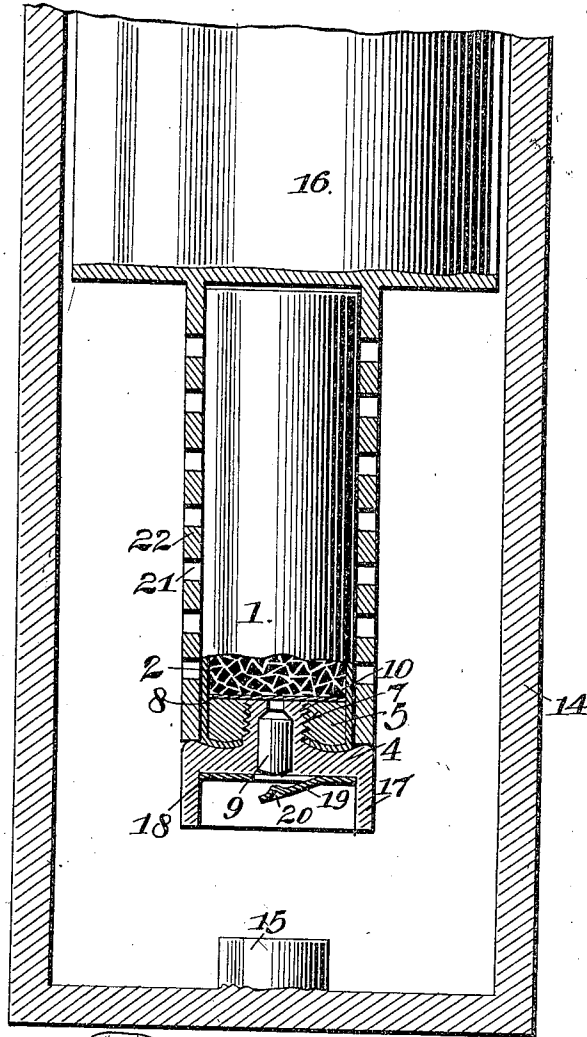


Fig. 7.

Fig. 8.

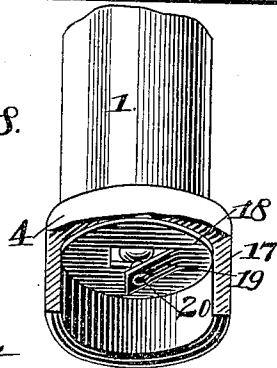
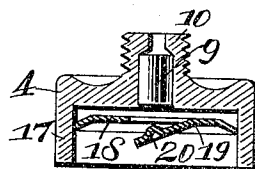


Fig. 9.

WITNESSES

J. P. Schrott

INVENTOR

Chester E. Sherman.
BY *Mum & Co.*
ATTORNEYS

UNITED STATES PATENT OFFICE.

CHESTER E. SHERMAN, OF ANOKA, MINNESOTA, ASSIGNOR, BY MESNE ASSIGNMENTS, TO HIMSELF, T. A. SHERMAN, AND HARRY E. SHERMAN, OF JACKSON COUNTY, MISSOURI.

CARTRIDGE-CASE.

1,330,144.

Specification of Letters Patent.

Patented Feb. 10, 1920.

Application filed August 12, 1918. Serial No. 249,469.

To all whom it may concern:

Be it known that I, CHESTER E. SHERMAN, a citizen of the United States, and a resident of Anoka, in the county of Anoka and State of Minnesota, have invented certain new and useful Improvements in Cartridge-Cases, of which the following is a specification.

My invention relates to improvements in cartridge cases, and it consists in the construction, combination and arrangement herein described and claimed.

An object of my invention is to provide a cartridge and more particularly a shot cartridge, having a removable and indefinitely re-usable head, thus affording a novel manner of marketing paper cartridges; this novel manner enabling the distribution of fully loaded paper shells and requiring only the fitting of said re-usable head with a fresh primer to the successive shells as discharged, to make a complete paper cartridge in each instance.

Another object of the invention is to provide a paper cartridge constituting a separate article *per se*, i. e. in that it is manufactured and marketed in quantities, loaded and ready for use, a novel construction of the base wad enabling the successive fitting of an indefinitely re-usable metallic head into said paper cartridges, to practically make a new and complete cartridge each time.

A further object of the invention is to provide a cartridge case, wherein the several cooperating parts are of a standard construction and arranged to be separated, so that when one of the parts is rendered useless it may be removed and a like part substituted therefor, to again make a complete cartridge case after the reassembly.

Other objects and advantages will appear in the following specification, reference being had to the accompanying drawings, in which:

Figure 1 is a sectional view of a cartridge case embodying the principles of the invention.

Fig. 2 is a perspective view of a number of fully loaded paper shells, showing how they are distributed to the trade without the re-usable cartridge head,

Fig. 3 is a perspective view showing how the re-usable cartridge head is taken from an exploded shell in readiness for applica-

tion to another paper shell such as shown in Fig. 2,

Fig. 4 is a perspective view of the re-usable cartridge head,

Fig. 5 is a detail view of an empty paper shell 60 showing the construction of the base wad,

Fig. 6 is a similar view of a slight modification illustrating the addition of a metallic rim on the outside of the base wad, 65

Fig. 7 is a sectional view illustrating a further modification whereby the invention is adapted more particularly for use in a Stokes trench mortar,

Fig. 8 is a detail sectional perspective view 70 of the modified cartridge construction in Fig. 7, and

Fig. 9 is a detail sectional view of the metallic head and illustrating the initial step in inserting the firing-pin washer. 75

By referring to Fig. 2 it will be observed that one of the important features of the invention resides in the manner of making the paper shells 1. These shells are manufactured as shown and are put on the market 80 fully loaded with powder 2 and shot 3.

One distinguishing feature will be observed at once in the construction of the paper shells in Fig. 2. These shells are marketed as stated, without the customary 85 integral metallic head which has the primer or percussion cap embodied therein. Without discussing paper cartridges of known construction in detail, it may be briefly stated that where these metallic heads are 90 practically integral with the paper tube of the cartridge, much metal is thrown away because there is no means of saving it.

The present invention overcomes this objection because but one metallic head 4 as 95 illustrated in Fig. 4, is intended to be used by one shooter for an indefinite number of paper shells 1. To further this purpose, a novel base wad construction is embodied in the paper shell 1. 100

The base wad 5 in the bottom of the paper shell 1, is made either of paper, metal or any other suitable material and in any practicable manner. It is forced into position as shown in Fig. 1, the adjacent end of the 105 paper tube being turned in and over the base wad 5 to form an annular convex rim 6.

This rim surrounds the screw-threaded bore 7 of the base wad 5. The powder 2 is prevented from dropping out of the thread- 110

ed bore 7, by means of a tinfoil partition 8. It will be understood that this tinfoil partition is necessary for the purpose stated, since the paper shells are distributed without any closure in the threaded bore. This partition readily melts when the percussion cap or primer 9 is exploded in shooting the cartridge.

The re-usable cartridge head 4 is made of compressed paper, metal, or any other suitable substance, but preferably of metal. It consists of a threaded plug 10 which is arranged to be screwed into the threaded bore 7 in making a complete cartridge. The base of the plug terminates at a concave seat 11 which binds upon the annular convex rim 6 crowding the substance of the base wad inwardly around the plug 10 and thus forming a gas-tight joint. The cartridge head 4 also has a rim 12 which is the counterpart of the ordinary cartridge rim which co-operates with the breech block of the gun.

In employing the invention, the cartridge head 4 is screwed into one of the paper shells 1, the complete cartridge is inserted in the gun and fired. In doing this, the crimping at the top of the cartridge is blown out straight as shown in Fig. 3. The paper tube is thus unfit for further use. Therefore, the metallic cartridge head 4 is unscrewed as shown in Fig. 3, and after inserting a fresh primer 9, is screwed into another fully loaded shell, thus making a complete cartridge.

The Modification in Figure 6.

In order to anticipate a possible demand for a shell with a metallic end, a metallic rim or thimble 13 is swaged over the base of the shell 1. This adds somewhat to the appearance of the shell and also strengthens it to a certain degree. However, the addition of the thimble 13 is not necessary and the plain shell hereinbefore described has been found to answer all purposes.

The Modification in Figure 7.

It will be observed that in some respects, the metallic cartridge head 4 is the same here as in Fig. 1. The plug 10 is screwed into the threaded bore 7 of the base wad 5 of the shell 1. The invention is here designed for use in a well known trench mortar which is diagrammatically illustrated by the barrel 14.

A lug 15 in the bottom of the barrel 14 strikes the firing mechanism which is now embodied in the metallic cartridge head 4, in order to explode the powder in the shell 1 and drive out the projectile 16. In order to embody the firing mechanism referred to, the head 4 is formed into a cup 17.

A firing pin washer 18 is swaged into the bottom of the cup 17 by pressing the washer which is originally formed as shown in Fig.

9, into place, thereby straightening the annular flared edge. The washer 18 has a spring tongue 19 with a firing pin 20 pressed inwardly therefrom.

When the spring tongue 19 strikes the lug 15, the detonator 9 is exploded and the shell 1 is consequently fired. The gases escape through holes 21 of the cylinder 22 in which the shell is fitted and fill the space beneath the projectile 16, thus driving it out. The re-usable feature of the cartridge head 4 does not apply in this form of the invention since the cartridge head is carried away with the projectile.

However, a distinct advantage is gained by employing the threaded plug 10, since the parts of the shell 1 can be assembled much more rapidly than is possible with the construction employed in the shell now designed for this particular type of mortar, the head 4 being a "casting." The other construction is made by "drawing" the cup from a blank and there are a number of operations to be carried out before the shell is finally completed.

While the construction and arrangement of the cartridge herein described, is that of a generally preferred form, obviously modifications and changes may be made without departing from the spirit of the invention or the scope of the claims.

I claim:—

1. An article of manufacture, comprising a fully loaded paper shell cartridge, with a base wad having an opening; and fusible means covering the opening to retain the powder.

2. A cartridge, comprising a non-metallic shell, a base wad in the shell with a threaded bore, the adjacent end of the shell being turned over the base wad to the edge of the bore and shaped to form a convex rim; a fusible powder-retaining partition in the shell covering the bore, said cartridge shell being distributed fully loaded; and a co-operating successively usable re-primed cartridge head having a threaded plug with a surrounding concavity, to be screwed into the threaded bore of each of a plurality of fully loaded shells, said concavity exerting an inward force on the base wad to compress it around the plug and form a gas-tight joint.

3. The combination in a cartridge, of a base wad with a threaded opening, an applicable metallic head with a plug screwing into the opening, and a surrounding concavity; and a paper shell containing the base wad a short distance from one end, having that end turned under between the base wad and the head to hold the shell together, by virtue of the inward compressing action of the head on the base wad.

CHESTER E. SHERMAN.