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E. J. HOTTINGER

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DEVICE FOR SECURING A PROPELLENT CHARGE TO AN ARTILLERY PRIMER

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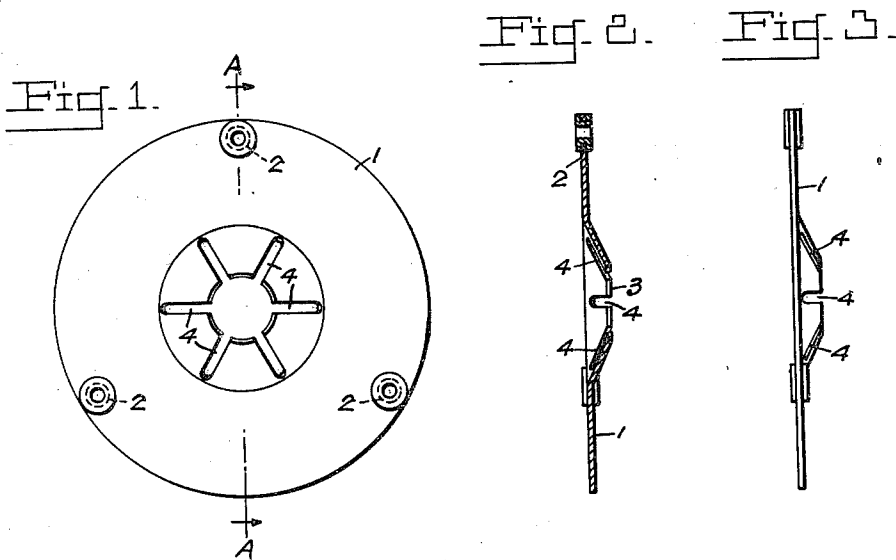
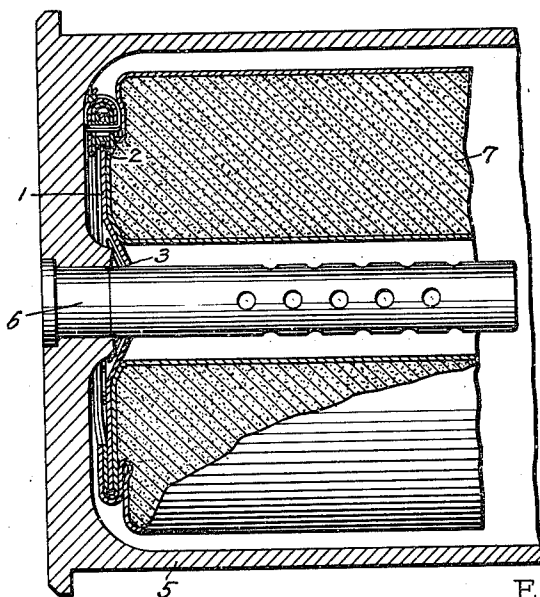


Fig. 4.



Inventor

Edwin J. Hottinger

By *C. E. Herrington & N. E. Thibodeau*

Attorneys

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DEVICE FOR SECURING A PROPELLENT
CHARGE TO AN ARTILLERY PRIMER

Edwin J. Hottinger, Rockaway, N. J.

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1 Claim. (Cl. 102—38)

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The invention described herein may be manufactured and used by or for the Government for governmental purposes, without the payment to me of any royalty thereon.

This invention relates to a method and means for the holding and retaining of propellant charges in the cartridge cases of howitzer and semi-fixed artillery ammunition.

Howitzer and semi-fixed artillery ammunition as presently designed is comprised essentially of a metal cartridge case, an artillery primer secured internally to the base of the cartridge case, and zones of propellant charges in the nature of bags of explosive powder positioned in successive increments in the cartridge case. One requirement in the loading of fixed ammunition is that the base or initial powder charge be securely affixed to the base of the cartridge case.

Heretofore this has been accomplished by having two screw eyes fixed in the base of the cartridge case and utilizing a length of silk cord which was looped through the screw eyes and over the initial propellant charge bags. To accomplish this it was necessary that long handled tools be utilized to accomplish the drawing up of the cord thru the screw eyes and over the powder bags where the cord was then tied. Another objectionable requirement was that it was necessary to tap the cartridge case in order to permit the introduction of the screw eyes therein.

The present invention has as its primary object the provision of a method and a means for accomplishing the results outlined above, namely that of securing the initial propellant charge to the base of the cartridge case without the utilization of looped cords or similar devices. A further object of the invention is to provide a means which will more securely hold the initial propellant charge to the artillery primer without the possibility of slackening or loosening of the cords that held the initial charge in the manner heretofore described.

An important feature of the invention is that by the utilization of the method and means hereinafter described considerable savings can be effected in the assembly and loading of fixed artillery ammunition by eliminating any requirement for screw eyes or similar hooking arrangements to be affixed to the cartridge case.

The invention can best be understood from the following description to be read in view of the accompanying sheet of drawing in which:

Figure 1 is a plan view of one form of device forming the basis of my invention,

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Figure 2 is a sectional view of the device taken on the line A—A of Figure 1,

Figure 3 is an elevational view of the device shown in Figure 1, and

5 Figure 4 is a sectional view of a cartridge case showing an application of one form of device forming the basis of my invention.

Referring to the drawing, 1 indicates the retainer forming the subject of my invention. The 10 retainer which is circular in shape has a series of small openings 2 which serve as a means by which the retainer can be sewed or secured to the bottom of a propellant charge bag. The retainer has an opening 3 located within the exact center 15 of the retainer and has a series of slots or channeled openings 4 extending outwardly from the periphery of the opening 3. The opening 3 and the slotted openings 4 are slightly elevated from the base portion of the retainer 1 in the manner indicated in Figures 2 and 3. The retainer is preferably made of springy sheet metal for reasons hereinafter described.

In Figure 4 there is shown an application of the 20 retainer in the assembly of a complete round howitzer charge. A cartridge case is shown at 5 having secured to the base thereof a conventional type of artillery primer 6. In accordance with accepted practice the initial or base charge 7, circular in shape has an opening extending through- 30 out the length of the charge in order that the base charge may be fitted over the artillery primer as is required. The retainer is secured or fastened to the initial base charge in any desired manner. In the assembly of the complete round the base 35 charge having the retainer 1 secured thereon is forced down into the cartridge case and the retainer 1 is slipped on the artillery primer and forced downwardly. For each particular assembly or complete round charge the diameter of the 40 hole or opening 3 is slightly less than that of the diameter of the artillery primer. The retainer, however, can be forced downwardly because of the spring tension contained within the retainer permitting a slightly enlarged diameter in the downward movement of the retainer. The initial 45 or base charge is forced downwardly to the bottom of the cartridge case and will be secured and firmly held in position by the spring tension and particular shape of the retainer on the artillery 50 primer causing a tight gripping hold thereon.

While there has been herein described one particular exemplification of the invention in the form of a spring retainer, it is to be understood that the invention is not to be so limited, and 55 modifications may be made from the retainer

herein described without departing from the spirit and scope of the invention.

Having thus described the invention, what is claimed as new is:

In semi-fixed ammunition, the combination of 5
a cartridge case having a base, a cylindrical
primer tube secured thereto and within the same,
said primer tube having a portion thereof ad-
jacent said base provided with a smooth periph-
eral surface, an anchoring device on said primer 10
tube for anchoring an ammunition increment of
a propellant charge in said cartridge case, said
device comprising an annular retainer ring por-
tion having a plurality of circumferentially spaced
openings, means extending through said open- 15
ings for attaching the ammunition increment
to said retainer ring portion, a plurality of seg-
mental tongue portions extending radially and in-
wardly from said annular retainer ring portion,
said segmental tongue portions being deflected 20
axially of said annular ring portion, each said
segmental tongue portion terminating in an
arcuate surface, said arcuate surfaces of said seg-
mental tongue portions lying on the periphery

of a circle having a predetermined diameter less
than that of said primer tube whereby said seg-
mental tongue portions frictionally secure said
device to said primer tube portion solely through
the inherent resiliency of said segmental tongue
portions, the deflected segmental tongue portions
guiding and assisting the movement of said an-
choring device on said primer tube portion to-
wards the cartridge base and resisting movement
of the anchoring device away from the cartridge
base.

EDWIN J. HOTTINGER.

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15 The following references are of record in the
file of this patent:

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