

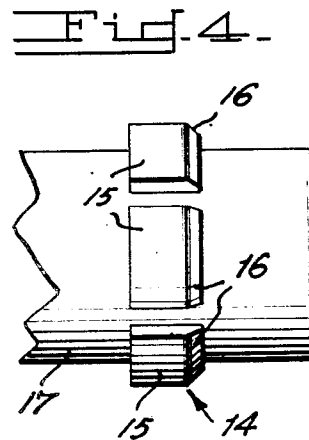
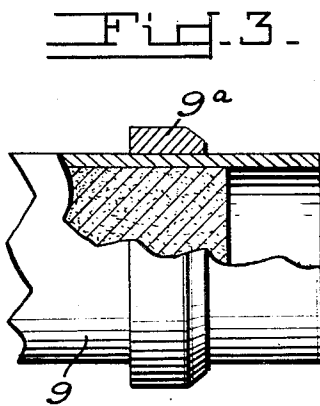
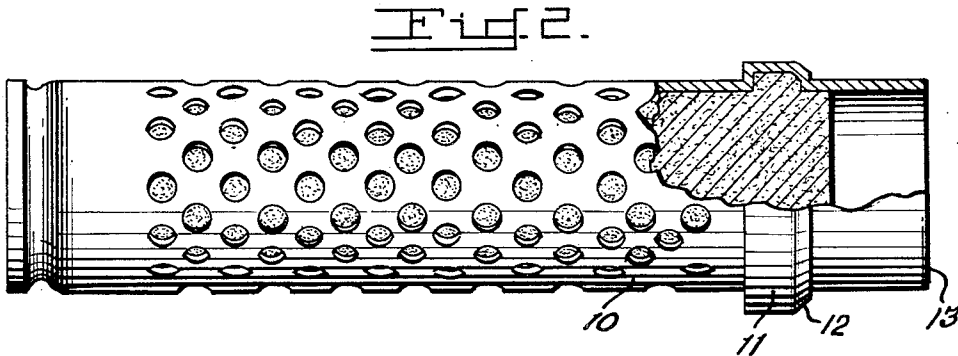
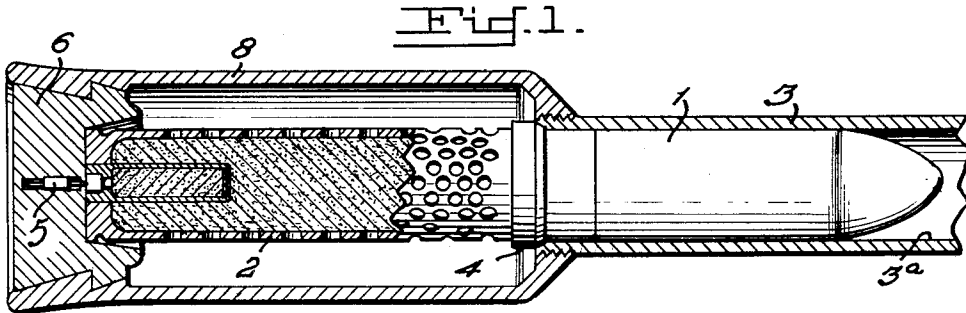
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STOP SHOULDER FOR RECOILLESS RIFLE AMMUNITION

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STOP SHOULDER FOR RECOILLESS RIFLE AMMUNITION

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

This invention relates to improvements in recoilless rifle ammunition and more specifically to a stop shoulder formed in the cartridge case.

An object of this invention is to form a stop shoulder in the cartridge case of recoilless rifle ammunition and eliminate the gilding metal band that is usually employed.

Another object of the invention is a cartridge case for recoilless ammunition wherein the stop shoulder provided said case is of a nature that will permit reheat treatment of the case.

The specific nature of the invention as well as other objects and advantages thereof will clearly appear from the following description and accompanying drawings in which:

Figure 1 is a view showing a round of ammunition employing the cartridge case of the invention positioned in a recoilless rifle.

Figure 2 is a view, partly in section, showing the cartridge case of the invention.

Figure 3 is a fragmentary view, partly in section, of a cartridge case having a stop shoulder of gilding metal sweated thereon.

Figure 4 is a fragmentary view showing a modification of the cartridge case of the invention.

Referring now to the drawings by characters of reference there is shown in Figure 1 a complete round of ammunition, positioned in a recoilless rifle, comprising a projectile 1 fitted to the mouth of a steel cartridge case 2. The complete round is positioned in the rifle by inserting the projectile 1 into the bore 3a of the rifle barrel 3 until the stop shoulder 4 engages the rear end of the barrel. The round thus inserted is in axial alignment with a firing pin 5 in the breech block 6 of chamber 8 when the breech is closed. The cartridge case being supported at its front end by the barrel and at its rear end by the breech block. The stop shoulder of the usual cartridge case 9 is a ring of gilding metal 9a which is first heated, placed on the cartridge case adjacent the mouth and allowed to shrink thereon. The ring is then machined to dimensions and a bevel formed on its forward edge to provide wedging action between the stop and rear of said bore. Obviously this not only involves the use of strategic material, but also costly machining operations as well as skilled labor. It has been found necessary to reject many steel cartridge cases due to non-compliance with the rigid hardness tolerances required in the manufacture of the steel case. The cases thus rejected are a complete loss since it is not economical to remove the gilding metal stop, reheat treat the case to specified hardness and shrink a new stop on the case.

The cartridge case employing the stop shoulder of this invention does not make use of strategic

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material and permits reheat treating of rejected cases.

The stop shoulder of the invention is most clearly shown in Figure 2 in which 10 indicates a steel cartridge case and 11 a stop shoulder comprising a bead rolled in the cylindrical walls of said case adjacent its mouth and having a tapered edge 12. As can be easily seen, a cartridge case having a stop thus formed can be readily reheat treated to conform to the rigid hardness tolerances required in the manufacture of the case. Further, the stop shoulder formed in the cartridge case in accordance with the invention prevents deformation, during the reheat treatment, particularly at the mouth of the case. Thereby eliminating any shaping operation which would be necessary in the event that cartridge cases having stop shoulders of gilding metal were to be reheat treated.

Figure 4 discloses a modification of the invention wherein the stop shoulder, generally indicated by reference character 14, is formed by peripherally embossing the walls of the cartridge case 17 to form segments 15 having forwardly tapered edges 16.

I claim:

1. A cartridge case for recoilless rifle ammunition, said case comprising a tube peripherally perforated, one end of said tube forming a base member for receiving a primer and the opposite end open for receiving a projectile; a stop shoulder spaced from said open end and formed in said tube, said stop shoulder comprising peripherally spaced forwardly tapered projections embossed in the walls of said tube for engagement with the rear end of a recoilless rifle barrel.

2. In a round of ammunition for a recoilless rifle having a barrel comprising a cartridge case and a projectile inserted in the mouth of said case, a stop shoulder consisting of an interrupted, rolled-in bead formed in the walls of said case, said stop shoulder engaging the rear of the barrel of said rifle when the round has been inserted in the rifle whereby said cartridge is positioned with respect to said barrel.

3. The round of ammunition of claim 2 wherein the diameter of said bead exceeds the diameter of said cartridge case and the diameter of the bore of said barrel.

4. The round of ammunition of claim 3 wherein said bead is bevelled.

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References Cited in the file of this patent

UNITED STATES PATENTS

Number	Name	Date
27,791	Foster	Apr. 10, 1860
2,466,714	Kroeger et al.	Apr. 12, 1949

FOREIGN PATENTS

Number	Country	Date
233,347	Great Britain	Mar. 11, 1926