March 5, 1935. E. I. BAMBERGER 1,992,934

SAFETY SIGNAL FOR FIREARMS

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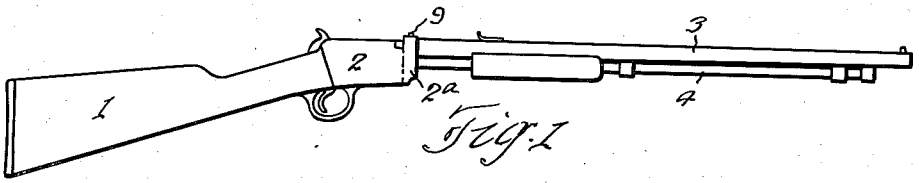


Fig. 1

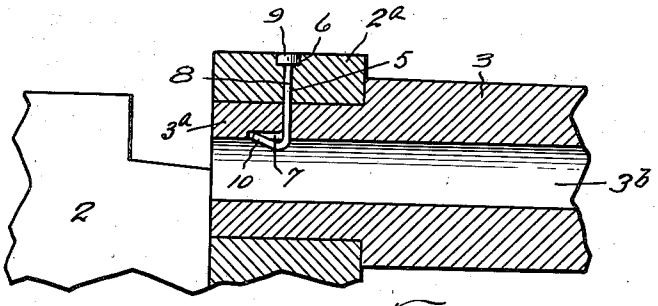


Fig. 2

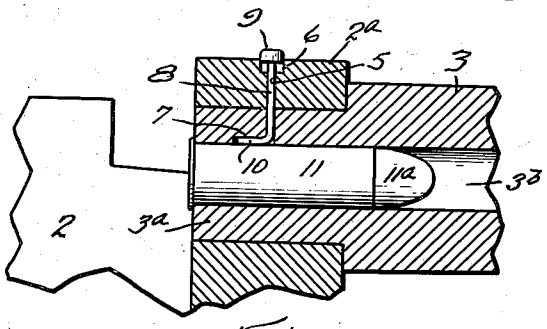


Fig. 3

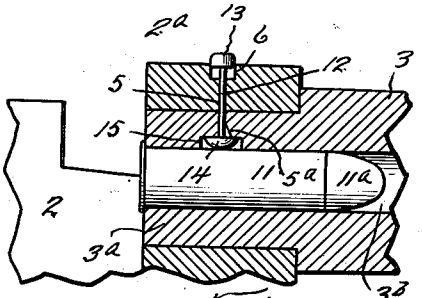


Fig. 4

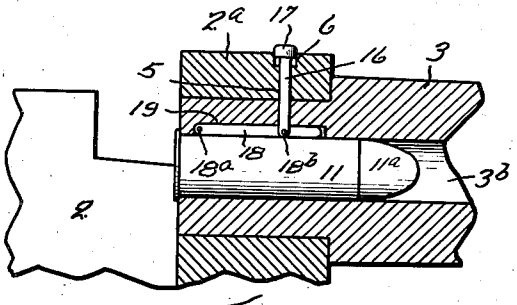


Fig. 5

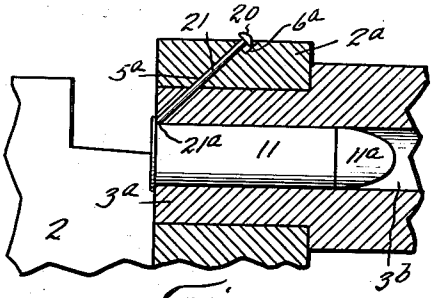


Fig. 6

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SAFETY SIGNAL FOR FIREARMS

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2 Claims. (Cl. 42—1)

This invention relates to firearms, and has for its general object to provide the same with simple and effective means whereby the presence or absence of a shell or cartridge may be indicated visually.

Among the more limited objects of the invention are to provide a firearm with a signal device so constructed, located and installed as to render the said device visible by the insertion of a cartridge or shell into the barrel of the firearm; to accomplish the foregoing object with a minimum of alteration in the construction of the firearm to which the device is applied; and to provide a device of the character referred to which can not only be installed and operated in the manner described, but which, when so installed, will not interfere with the safety of the firearm.

In the embodiment of my invention shown herein, I have shown the same as applied to a standard type of rifle, but it will be understood that it may be applied to practically any kind of a breech-loading firearm and that the illustration of my invention in connection with a rifle is to be taken merely as typical of its applicability to breech-loading firearms generally.

Referring to the drawing, Fig. 1 represents a side elevation of a firearm equipped with my invention, the same being shown as a breech-loading rifle; Fig. 2 a sectional detail through the rear of the barrel of the said rifle and showing a portion of the breech-piece in elevation, the barrel being empty or unloaded; Fig. 3 a view similar to Fig. 2 and showing the position of my indicating device when a cartridge has been inserted into the barrel; and Figs. 4, 5 and 6 are views, corresponding to Fig. 3, but showing modifications of the invention illustrated in the preceding views.

Describing by reference characters the parts illustrated in Figs. 1 to 3 inclusive, 1 represents the stock, 2 the breech piece, 3 the barrel and 4 the magazine of a rifle of the ordinary breech-loading type. The rear end of the barrel 3 is reduced in diameter, as shown at 3^a, this reduced cylindrical portion being received within a reinforcement constituted by the front portion 2^a of the breech piece, the parts 3^a and 2^a constituting in effect the rear reinforced end of the barrel.

Adjacent to their rear ends, the barrel and the breech piece are provided with a small vertically extending guide bore 5, the said bore merging at its upper end with an enlarged recess 6 in the top of the front portion of the breech piece and merging at its lower end with a slot 7 extending rearwardly from said bore and extending upwardly from the barrel bore 3^b.

Mounted in the bore 5 is an indicator, said indicator comprising a stem 8 mounted with a sliding fit in said bore and having at its upper end an indicating head 9 adapted to be received in the recess 6 when no shell or cartridge is in the barrel. At its lower end, the stem 5 is provided with a rearwardly and upwardly inclined extension 10. The length of the stem and the inclination of the extension 10 are such that the rear end of this extension will always be in the rear portion of the slot 7. The stem and its extension 10 are made of spring metal, for a purpose to be described.

It will be noted that, when the barrel is unloaded, the lower end of the stem and its extension 10 project into the barrel bore. It follows that, when a cartridge 11, 11^a is inserted into the rear of the barrel bore, the stem 5 will be pushed upwardly and outwardly by the engagement of the cartridge with the upwardly and rearwardly inclined extension 10 of the stem, which will result in projecting the indicating head 9 out of the recess 6, shown in Fig. 3. The stem, without the head 9 thereon, may be inserted into the bore 5 from the rear of the barrel bore and, when in place, the head may be applied to the top of the stem.

It will be evident that, by the use of the device described, the firearm will always indicate whether the barrel contains a cartridge, thus avoiding accidents due to the failure of the firearm to indicate whether it is or is not loaded.

In Fig. 4 there is shown a modification of the invention wherein the indicating device proper comprises a stem 12 fitting in the bore 5 and having a head 13 adapted to be received in the recess 6. In this case, the bottom of the stem may be provided with a rounded head or cup-like extension 14 adapted to be received within a circular recess 15 extending upwardly from the bore of the barrel. It will be evident that when a cartridge 11, 11^a is inserted into the rear of the barrel, the extension or head 14 presents a rearwardly and upwardly inclined surface to the cartridge thus inserted, whereby the indicating device will be projected upwardly, displaying the head 13 above the top of the rear of the barrel. The stem may be made of resilient metal to facilitate its insertion into the bore 8 the head 13 being applied to the top of the stem after such insertion. A guide wall 5^a aids in the insertion of the stem into the bore 5.

In Fig. 5 there is shown a further modification of my invention wherein the indicating device comprises a stem 16 having a head 17 at the up-

per end thereof adapted to be received in the recess 6, the lower end of the stem being pivotally connected to a link 18 which is adapted to be received within a longitudinal slot 19 extending upwardly from the bore of the barrel, the rear end of the link being pivoted within the rear portion of the said slot, as shown at 18^a, and the front portion of the link being loosely and pivotally connected to the lower end of the stem 16, as shown at 18^b. It will be evident that, when the barrel is empty, the link 18 constitutes an upward and rearward extension of the stem 16 which is adapted to be engaged by the cartridge 11, 11^a when the latter is inserted into the barrel, thereby to raise the stem to the position shown in Fig. 9, with the indicator head 17 elevated to a position where it is readily visible. The front end of the link is preferably rounded to reduce friction between the same and the shell 11.

In Fig. 6 I have shown a still further modification of the invention wherein the bore 5^a is upwardly and forwardly inclined from the bore of the barrel, merging at its upper end with a recess 6^a which, when the barrel is unloaded, is adapted to receive the indicating head 20 on the stem 21, the lower end of the stem then projecting into the path of the cartiridge 11, 11^a whereby the stem will be moved upwardly and forwardly and the head 20 be elevated above the rear of the barrel. The lower end of the stem 21 is rounded, as shown at 21^a, to facilitate the movement of the stem by the engagement of such lower end with the shell entering the bore of the firearm. This embodiment of my invention is particularly well adapted for application to existing fire arms, it being necessary only to drill the bore 5^a to a point practically at the extreme rear end of the bore of the barrel and to mill the recess 6^a for the head on the indicator.

In each embodiment of my invention, the lower end of the stem, when the barrel is unloaded, normally projects into the bore of the barrel, as the length of the device including the stem proper and the head is greater than the length of the guide bore provided therefor; and the lower end of each stem is in position to be operatively engaged by the insertion of a cartridge into the barrel bore.

Having thus described my invention, what I claim is:

1. In a firearm, the combination of a barrel having a cartridge-receiving bore and provided with a guide bore extending upwardly from the interior of the first mentioned bore through the barrel, the lower end of the guide bore communicating with a slotted seat formed in the inner wall of said barrel and providing an extension of said bore and extending rearwardly therefrom and upwardly from, an indicating device comprising a stem slidably mounted in the guide bore, the said stem having an extension projecting upwardly and rearwardly from the lower end thereof, the rear end of said extension being slidably received in the said seat and the said stem and extension being made of spring metal whereby, when the barrel is unloaded, the stem and its extension project into the bore of the barrel with the rear end of the stem within the said seat whereby the stem will be projected upwardly by the insertion of a cartridge into the barrel bore with the extension received within the said seat, the said stem having indicating and retaining means at its upper end.

2. In a breech loading firearm, a barrel having a bore passing from the inner surface to the outer surface thereof, the inner end of said bore being at a point to be adjacent a cartridge in said barrel, said bore being enlarged at its inner end, a stem slidable in said bore having a cartridge engaging element adapted to be moved into the bore enlargement by insertion of a cartridge into said barrel, and being of a length to project beyond the outer end of said bore only when said cartridge engaging element is received in said enlargement, and means for limiting inward motion of said stem, said stem being composed of resilient metal whereby to permit insertion from the interior of a barrel whose diameter is less than the length of said stem.

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