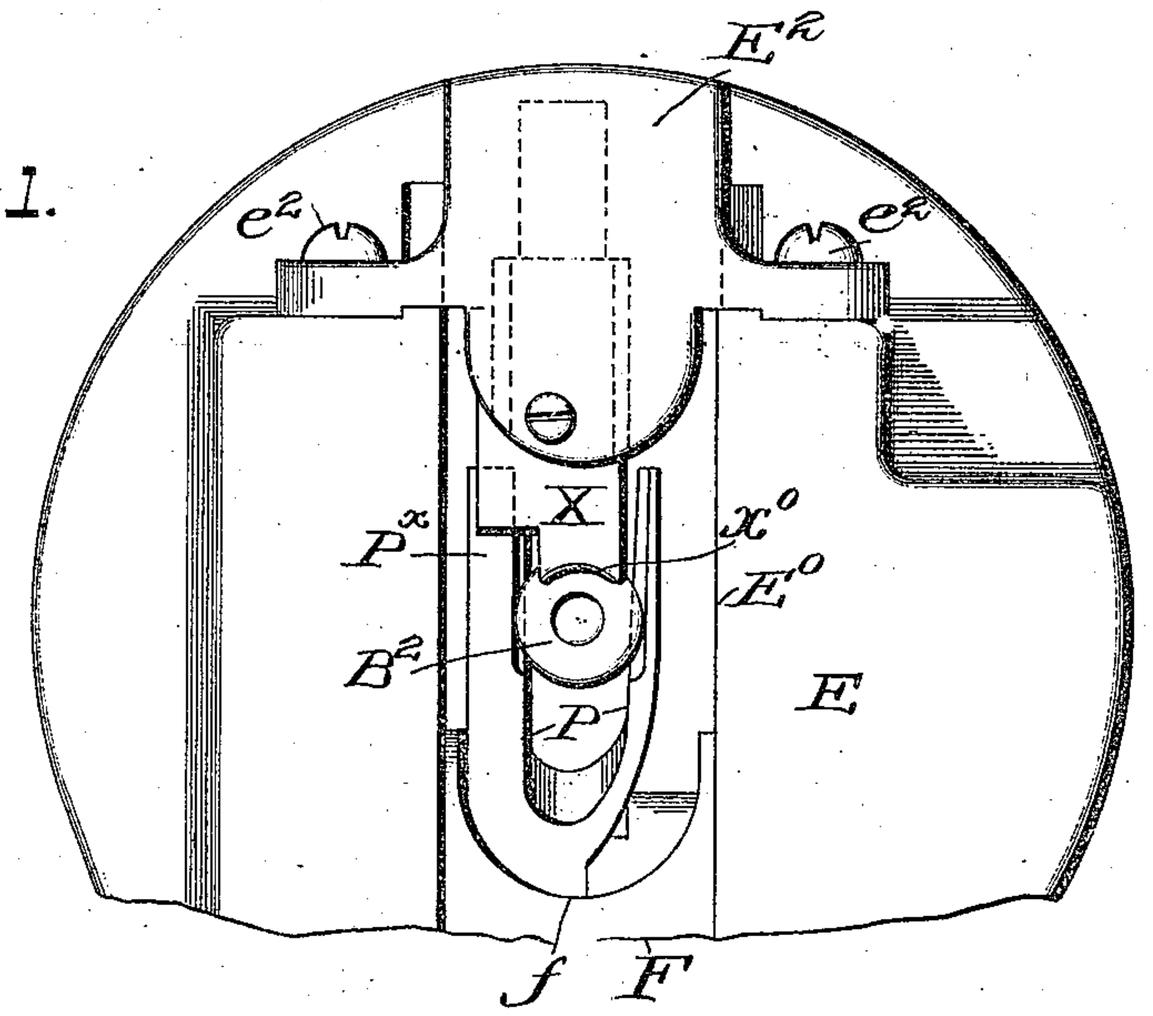
No. 879,225. PATENTED FEB. 18, 1908.

H. T. WHEELER.

FIRING MECHANISM FOR ORDNANCE.

APPLICATION FILED AUG. 28, 1907.

Fig. 1.



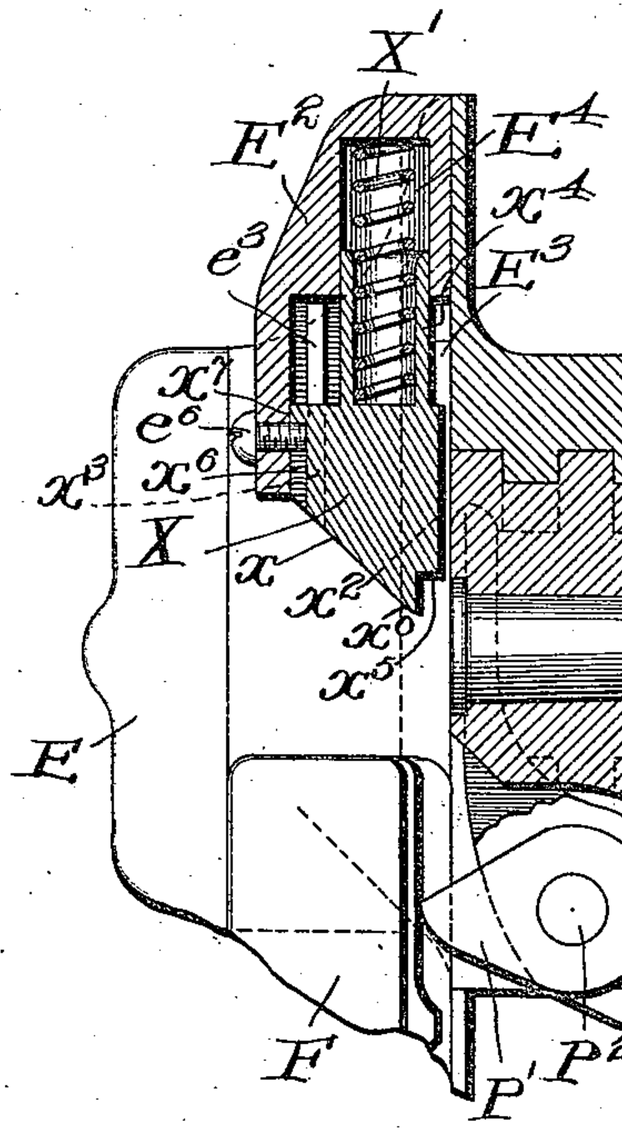


Fig. 2.

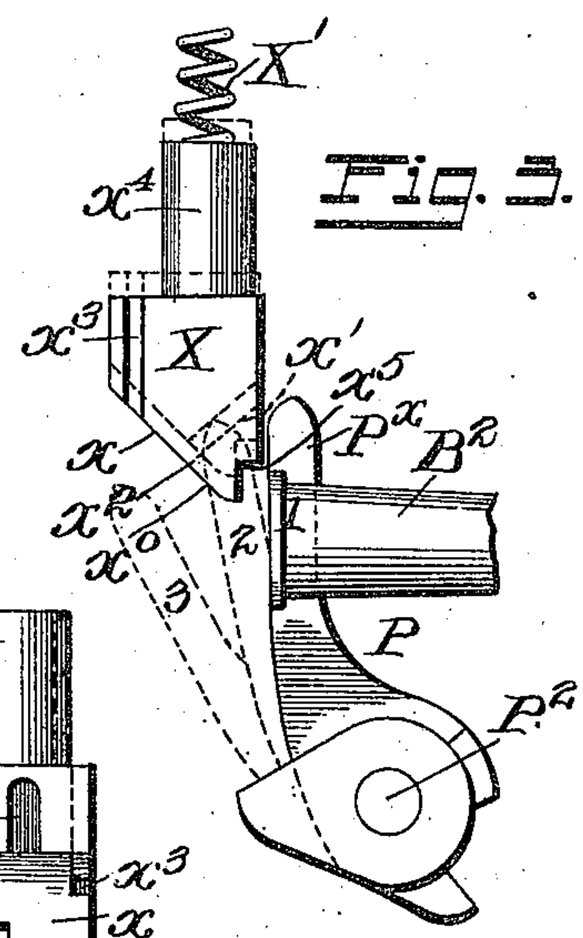


Fig. 3.

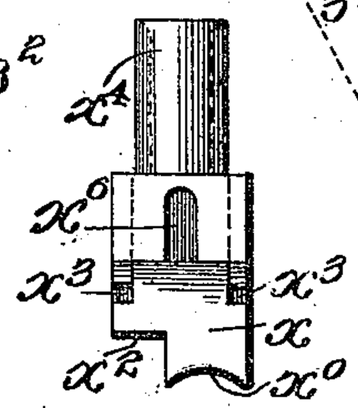


Fig. 4.

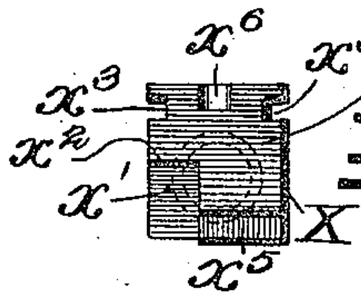


Fig. 5.

Witnesses
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UNITED STATES PATENT OFFICE.

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FIRING MECHANISM FOR ORDNANCE.

No. 879,225. Specification of Letters Patent. Patented Feb. 18, 1908.

Application filed August 28, 1907. Serial No. 390,512.

To all whom it may concern:

Be it known that I, HARRY T. WHEELER, a citizen of the United States, residing at Washington, in the District of Columbia, have invented certain new and useful Improvements in Firing Mechanism for Ordnance; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to improvements in firing mechanism for ordnance, and it is especially intended to provide certain improvements in the firing mechanism shown in detail in my application Serial No. 365760, filed April 1st, 1907, and entitled firing mechanism for ordnance.

According to that invention, the primer was placed in the chamber provided in the mushroom stem, which chamber was closed by a sliding wedge, and the primer case could only be inserted or removed when the wedge was in the lowered position.

It is thought that possibly in practice the jars incident to the operation of the mechanism described in the application aforesaid, might cause the primer case to shake loose and to project in the wake of the sliding wedge, causing the mechanism to occasionally fail to operate successfully. My present invention is intended to provide means for automatically locking the primer case in position until the wedge is raised.

My invention consists briefly, in providing an automatic latch which holds the primer case in its chamber, but which latch is automatically tripped by the extractor in its movement outward for withdrawing the empty cartridge case, or inward when the fresh cartridge case is inserted, all of which will be more fully hereinafter described.

Reference is had to the accompanying drawings, in which the same parts are indicated by the same letters throughout the several views, and in which similar letters are used to indicate the same parts as those already used in my application aforesaid.

Figure 1 is a rear elevation of the housing adapted to be attached to the breech mechanism and shows the wedge in the lowered position, parts being broken away. Fig. 2 is a central vertical section of the device shown in Fig. 1. Fig. 3 shows diagrammatically the co-action of the latch, primer case and, extractor. Fig. 4 is a detail showing the latch block in rear elevation, and Fig. 5 is an inverted plan view of the device shown in Fig. 4.

B′ represents the stem of the mushroom which projects rearward through the breech block in the usual well known way, and which is provided with interrupted ribs b' adapted to engage corresponding grooves, e' in the sleeve, E′, which is attached to or integral with the housing E. This housing is provided with a guideway E^0 for the wedge F, and the upper part of this guideway is spanned by the bridge E^2 secured to the housing by bolts e^2. This bridge is recessed, as at E^3 and E^4 to receive the spring-impressed latch X, which latch has guide grooves x^3 to engage the guide rib e^3 in the bridge, and also with a guide slot x^6, into which projects the holding pin e^6, which prevents the latch from slipping out of place in the housing. The latch is normally pressed downwards by the spring X′ which projects into the hollow stem x^4 of the latch, and the latch has two wedge faces x and x', which terminate in the edge x^2 beyond which projects the curved portion x^0, which projects downwards beneath the shoulder x^5 and serves to prevent the cartridge case from slipping too far out of its chamber. P represents the extractor, whose operation is fully described in the application aforesaid. This extractor is rocked on the shaft P^2 by the engagement of the arm P′ with the wedge F, as described in said application. This extractor is preferably U-shaped, and one of its arms $P^\times$ has two curved engaging faces, which strike the faces x'—x of the latch, respectively, as the extractor is swung to the open or the closed position.

It will be noted from an examination of Fig. 3 in which the extractor is shown in the closed position, that if the arm $P^\times$ be drawn downward to the position indicated at 2 in dotted lines this arm $P^\times$ will strike the wedge face x' wedging the latch X upwards until the arm $P^\times$ passes the edge x^2, and when the extractor reaches the position shown in dotted lines at 3 in Fig. 3, the latch will snap back to the initial position.

In loading the primer into the mechanism, the operator pushes the extractor from the position shown at 3 to the position shown at 1 in Fig. 3, which causes the arm $P^\times$ to strike the wedged face x, pushing the latch X upwards until the extractor passes, when the latch will snap back to the initial position

shown in full lines in Fig. 3. Thus it will be seen that as the wedge is lowered, the extractor is automatically rocked backwards, automatically tripping the latch, and allowing the empty cartridge case to pass clear thereof, and to be thrown out of the mechanism in the usual way; while the latch readily yields to the extractor when the fresh primer case is being inserted Thus it will be seen that I provide a positive and safe means for holding the primer in place while it is loaded in the breech mechanism, and at the same time which will permit the ready removal thereof when desired, and which will not interfere in any way with the action of the firing pin.

It will be obvious that various modifications might be made in the herein described device which could be used without departing from the spirit of my invention.

Having thus described my invention, what I claim and desire to secure by Letters Patent of the United States is

1. In a firing mechanism for breech loading guns, the combination with a housing, a mushroom stem provided with a primer chamber, an extractor pivoted in said housing having an arm adapted to engage the rim of the primer case and provided with bearing faces, a wedge sliding in said housing, and operating said extractor, a sliding latch normally screening a portion of the primer chamber, having oppositely inclined wedge faces automatically engaging the said bearing faces on the extractor arm, a spring normally pressing said latch downward, guide grooves on said latch and guide ribs on the gun for engaging said grooves, substantially as described.

2. In a firing mechanism for breech loading guns, the combination with a housing, a mushroom stem provided with a primer chamber, an extractor pivoted in said housing having an arm adapted to engage the rim of the primer case and provided with bearing faces, a wedge sliding in said housing and operating said extractor, a sliding spring pressed latch normally screening a portion of the primer chamber having oppositely inclined wedge faces adapted to automatically engage the said bearing faces of the extractor arm, a bridge secured to the said housing and provided with a recess to accommodate said spring and latch, said latch provided with guide grooves, and a guide slot, and said bridge provided with guide ribs engaging said grooves, and a holding pin engaging said slot, substantially as specified.

3. In a firing mechanism for breech loading guns, the combination with a housing, a mushroom stem provided with a primer chamber, an extractor pivoted in said housing, having an arm adapted to engage the rim of the primer case, and provided with bearing faces, a wedge sliding in said housing and operating said extractor, a bridge secured to said housing and provided with a recess, a latch having a hollow stem, sliding in said recess, a spring partly in said recess and partly in said hollow stem for forcing said latch downward, said latch provided with guide grooves and said bridge provided with guide ribs engaging said grooves, and said latch also provided with a guide slot, and said bridge provided with a holding pin engaging said slot, substantially as described.

4. In a firing mechanism for breech loading guns, the combination of a housing E, a mushroom stem B′, revolubly mounted in said housing, and provided with a primer chamber, an extractor pivoted in said housing and having an arm engaging the rim of the primer case, and provided with bearing faces, a wedge sliding in said housing and operating said extractor, a latch X, normally screening a portion of the primer chamber, and provided with the inclined wedge faces x and x', adapted to be struck by the bearing faces of said extractor, guide grooves x^3, and a guide slot x^6 also on said latch, a bridge E^2 secured to the housing by bolts e^2 and, provided with a recess for receiving said latch, a hollow stem integral with said latch, a spring X′, partly in said recess and partly in said hollow stem, for forcing said latch downward, guide ribs e^3 on said bridge for engaging said guide grooves x^3, a holding pin e^6 for engaging said guide slot and holding said latch in position, an edge x^2 at the juncture of said wedge faces x and x', and a curved portion x^0, provided with a shoulder x^5 projecting beyond said edge x^2, substantially as described.

In testimony whereof, I affix my signature, in presence of two witnesses.

HARRY T. WHEELER.

Witnesses:
SAML. D. COLE,
W. R. ADAMS.