J. M. BROWNING.

FIREARM.

APPLICATION FILED APR. 27, 1920.

1,372,336. **Patented Mar. 22, 1921.**

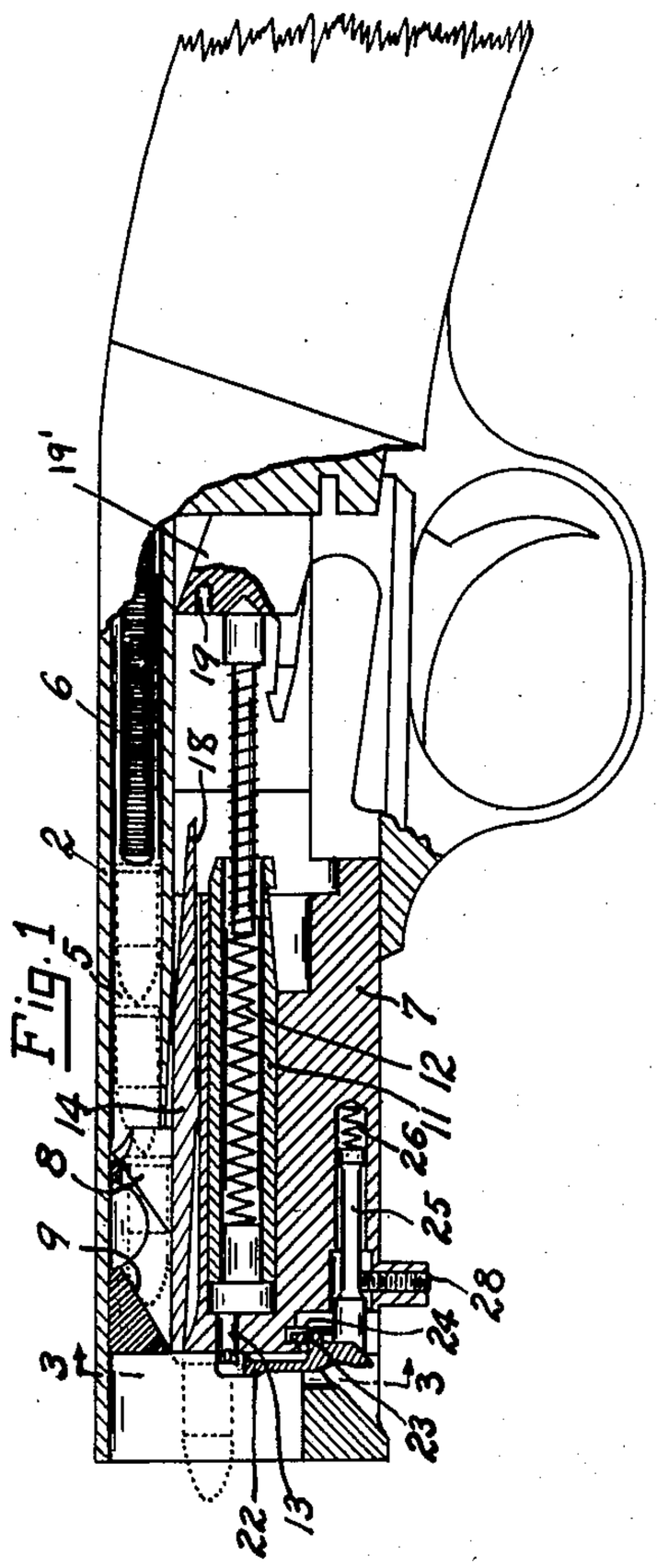

Fig. 1

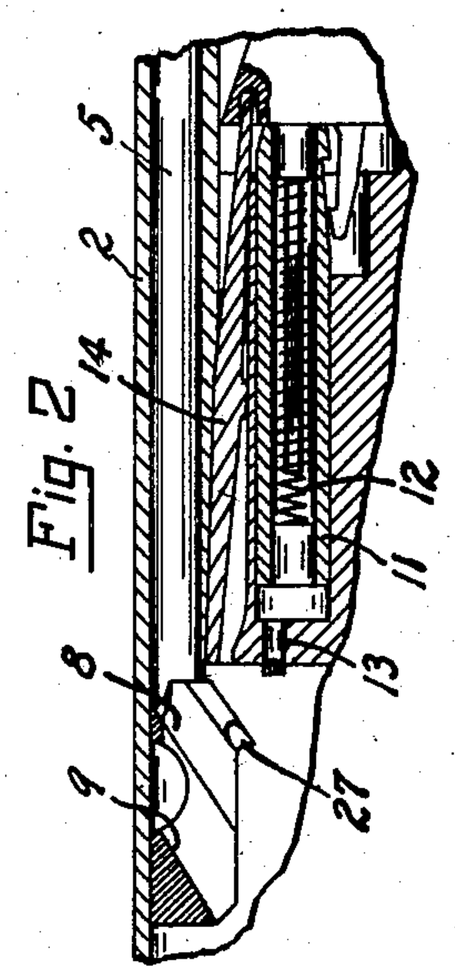

Fig. 2

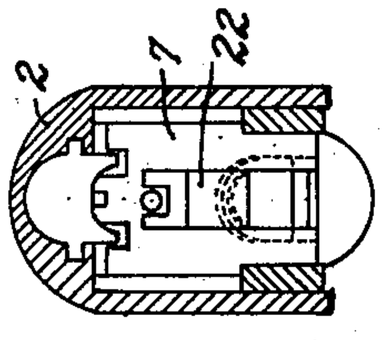

Fig. 3

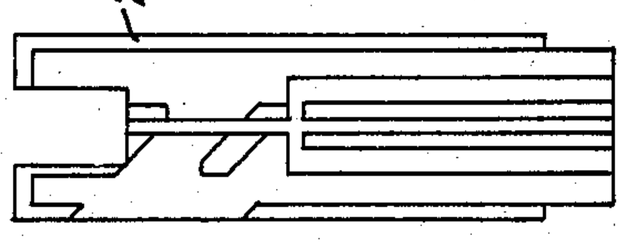

Fig. 4

Fig. 5

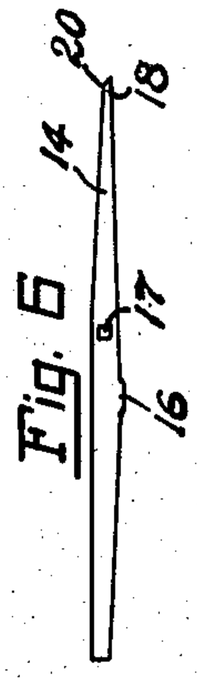

Fig. 6

J. M. Browning INVENTOR.

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JOHN M. BROWNING, OF OGDEN, UTAH.

FIREARM.

1,372,336. Specification of Letters Patent. Patented Mar. 22, 1921.

Application filed April 27, 1920. Serial No. 376,922.

To all whom it may concern:

Be it known that I, JOHN M. BROWNING, a citizen of the United States, residing at Ogden, in the county of Weber and State of Utah, have invented certain new and useful Improvements in Firearms, of which the following is a specification.

This invention while applicable to different kinds of firearms is more particularly intended to be adapted to 22 caliber rim-fire greased cartridges.

I provide improved extracting means including an extractor, acting together with the firing pin to grip the rim of the cartridge while it is being extracted, which does away with the necessity of the lower portion of the cartridge guide holding it to the extractor. The cartridge being gripped between the extractor and the firing pin is held securely while being extracted and until the rim of the cartridge comes in contact with the downward depending ejecting shoulder on the cartridge guide, when it is turned on the point of the extractor and ejected from the receiver.

Another object of my invention is to provide an adjustable extractor. When using cartridges as small as the caliber 22 and greased, the recoil spring cannot be very strong and the grease especially in cold weather, has a tendency to gum up the extractor and cause it to work slowly or not at all, unless it is provided with a fairly strong spring. When a strong spring is used, if the hook on the extractor extends upward too far, it has to be forced down by the recoil spring and if the block rebounds or is drawn back slightly for any purpose, the recoil spring is not strong enough to force the extractor down, and the result is that the breech-block is held slightly away from the end of the barrel which causes misfiring. To prevent this, I have a simple means of adjusting the extractor just high enough to engage the rim of the cartridge properly and have no tendency whatever to hold the breech-block away from the end of the barrel.

Referring to the drawings:

Figure 1 is a sectional side elevation of the frame, action and certain adjunctive members of a rifle involving the invention, the parts being shown advanced.

Fig. 2 is a practically similar view of the principal elements of Fig. 1, with the movable parts in retracted or backward position.

Fig. 3 is a cross section on the line 3—3 of Fig. 1 looking toward the right.

Fig. 4 is a top plan view of the breech-block.

Fig. 5 is a top plan view, and

Fig. 6 is a side elevation of a pusher.

Like characters refer to like parts throughout the several views.

The frame or receiver of the gun, is denoted by 2 and it is generally speaking, like that shown in the Letters Patent hereinbefore mentioned. The magazine comprises a passage 5, into which the cartridges are inserted and fed automatically therealong by the flexible follower 6 the forward end of which engages the rearmost cartridge to advance the line of cartridges along the passage for subsequent introduction into the chamber of the barrel. In the frame or receiver 2, is the breech-block 7, the backward motion of the breech-block being brought about by the pressure of the gases generated during firing, while forward movement thereof is effected by the recoil spring (not shown). The firing pin is denoted by 11 and its spring by 12, the firing pin having a point 13, which strikes the cartridge.

After the foremost cartridge passes from the passage 5, it engages the cam surfaces 8 and 9, and, as it falls, is directed thereby into the path of the breech-block 7 which then inserts it into the chamber of the barrel. This is the normal action, but there may be cases, however, as I have already noted, in which the cartridge does not get into the path of the breech-block. To insure this latter result under all conditions, I provide means of a positive nature by which the foremost cartridge when out of the magazine passage is pushed forward positively into the path of the breech-block.

As shown this means is in the form of a pusher 14 oscillatory on the upper side of the breech-block, which has a longitudinal channel to receive the pusher, the latter having about its central under side the lug 16 which engages the bottom of the channel. In addition to this the pusher has a lateral extension 17 which fits a cut in the side of the breech-block and thus prevents endwise movement of the pusher with respect to the breech-block. The rear end of the pusher is

shown as tapered or pointed as at 18 which is adapted to enter an opening 19 in the lug 19′ of the trigger plate, the upper surface of the tail part of the pusher having a cam surface 20 to cause the upward tip of the forward end of the pusher when the tail thereof enters the opening 19.

It will be assumed that the breech-block 7 is moved backward by recoil and that its forward end is back of the head of the front cartridge of the row, said front cartridge having just emerged from the passage 5. In Fig. 2 the breech-block is shown as all the way back, the pusher having been caused to be moved to its operative position. When, therefore, the breech-block is advanced, the pusher will strike the head of the first cartridge, then out of the passage 5, and will positively cause said first cartridge to be guided downward by the cam surfaces 8 and 9 into the path of the breech-block.

The extractor is denoted by 22 and it has a lug 23 loosely fitting a cut 24 in the front end of the breech-block. The extractor 22 is supported by the front end of the plunger 25 loosely fitting a socket in the breech-block and engaged by the spring 26 to hold the front cam end of the plunger against the lower cam surface of the extractor. An examination of the drawings, will show clearly that this thrust of the plunger 25 against the cam surface of the extractor 22, while holding the extractor yieldingly in its upward position also holds the upper end of the extractor yieldingly against the face of the breech-block. When the breech-block is in its advanced position the upper end of the extractor engages the rim of the cartridge in the usual manner. When the point 13 of the firing pin strikes the cartridge the roughened end of the point will be slightly embedded and the extractor will with the point clamp jointly the shell to insure the shell being withdrawn from place. As the breech-block moves backward during which time the cartridge is gripped by the extractor and the firing pin, it comes in contact with the downward depending shoulder 27 at which time it is turned on the point of the extractor and discharged positively from the receiver.

Through the breech-block 7 is tapped the screw 28 the upper end of which engages the plunger 25 so that when necessary the extractor may be adjusted vertically through the action of the screw engaging the plunger and effecting corresponding movements of the extractor.

What I claim is:

1. A fire arm comprising a frame, a breech-block, a firing pin carried by the breech-block, an extractor also carried by the breech-block, to coact with the firing pin when the cartridge is fired to clamp the shell both on the same side of the shell, means for imparting a movement to the extractor toward the rear of the breech-block to secure said clamping action, and independent means for positively separating the shell from the joint clamping engagement of the firing pin and the extractor on recoil of the breech-block.

2. A fire arm comprising a frame, a breech-block, a firing pin carried by the breech-block, an extractor also carried by the breech-block, to coact with the firing pin when the cartridge is fired to clamp the shell both on the same side of the shell, means for imparting a movement to the extractor toward the rear of the breech-block to secure said clamping action, and means on the frame, for positively separating the shell from the joint clamping engagement of the firing pin and the extractor on recoil of the breech-block.

3. A fire arm comprising a frame, a breech-block, a firing pin carried by the breech-block, an extractor also carried by the breech-block to coact with the firing pin when the cartridge is fired to clamp the shell both on the same side of the shell, means for imparting a movement to the extractor toward the rear of the breech-block to secure said clamping action, spring means acting against the extractor to yieldingly cause the extractor to engage the shell, and means for positively separating the shell from the joint clamping engagement of the firing pin and the extractor on recoil.

4. A fire arm comprising a frame, a breech-block, a firing pin carried by the breech-block, an extractor also carried by the breech-block, to coact with the firing pin when the cartridge is fired, to clamp the shell both on the same side of the shell, means for imparting a movement to the extractor toward the rear of the breech-block to secure said clamping action, and means for positively separating the shell from the joint clamping effect of the firing pin and the extractor on recoil.

5. A fire arm comprising a frame, a breech-block, a firing pin carried by the breech-block, an extractor also carried by the breech-block, to coact with the firing pin when the cartridge is fired, to clamp the shell both on the same side of the shell, means for imparting a movement to the extractor toward the rear of the breech-block to secure said clamping action, and means for positively separating the shell from the joint clamping effect of the firing pin and the extractor on recoil, the clamping means acting to retain the shell in the position in which it was in and until it is ejected.

6. A fire arm comprising a frame, a breech-block, a firing pin carried by the breech-block, an extractor also carried by the breech-block for up and down and lateral movements with respect to the breech-

block, and means for yieldingly causing the extractor to clamp the shell of the cartridge against the front of the firing pin and both on the same side of the shell.

7. A fire arm comprising a frame having an opening through its lower side, a slidable breech-block, a firing pin carried by the breech-block, an extractor also carried by the breech-block, means for causing the extractor to clamp the shell when the cartridge is fired against the front of the firing pin and both on the same side of the shell, and means for positively separating the shell from the joint hold of the extractor and the firing pin and causing it to pass downwardly through said opening.

8. A fire arm comprising a frame, a breech-block, a laterally immovable firing pin carried by the breech-block, a rocking extractor also carried by the breech-block, to coact with the firing pin, a spring actuated member carried by the breech-block and to apply a forward thrust against the extractor to cause it to jointly clamp with the firing pin, the shell, and means for positively separating the shell from the extractor and the breech-block, on recoil.

9. A fire arm comprising a frame, a breech-block, a laterally immovable firing pin carried by the breech-block, a rocking extractor also carried by the breech-block and having a lug, the frame having a cut to receive the lug, the extractor also having a cam, a spring-operated plunger on the breech-block having a cam to engage the cam of the extractor to cause the extractor to rock rearwardly and thus jointly clamp the shell with the firing pin on explosion of the cartridge, and means for positively separating the shell from the clamping means on recoil of the breech-block.

10. A fire arm comprising a frame, a breech-block, a laterally immovable firing pin carried by the breech-block, an extractor also carried by the breech-block, to coact with the firing pin when the cartridge is fired to clamp the shell, means for adjusting the extractor, and means for positively separating the shell from the joint clamping engagement of the firing pin and the extractor, on recoil of the breech-block.

11. A fire arm comprising a frame, a breech-block, a laterally immovable firing pin carried by the breech-block, a rocking extractor also carried by the breech-block, to coact with the firing pin when the cartridge is fired, to clamp the shell, the breech-block having a bore, a plunger set into the bore, and a spring acting against the plunger to apply a forward thrust thereto, the plunger engaging the extractor, the engaging surfaces of the plunger and the extractor being of cam form.

12. A fire arm comprising a frame, a breech-block, a firing pin carried by the breech-block, an extractor also carried by the breech-block, to coact with the firing pin when the cartridge is fired, to clamp the shell, the breech-block having a bore, a plunger set into the bore, a spring acting against the plunger, the plunger engaging the extractor, the engaging surfaces of the plunger and the extractor being of cam form, and a screw tapped through the breech-block to engage the plunger to effect thereby adjustment of the extractor.

13. A fire arm comprising a frame, a breech-block, a firing pin carried by the breech-block, an extractor against the front end of the breech-block, having on its rear side a lug, the breech-block having a cut to freely receive the lug, the bottom of the extractor having a cam surface, a plunger, the breech-block having a bore in which said plunger is laterally adjustable, the plunger having at its front end a cam surface to engage that on the extractor, a spring in the bore to engage the rear end of the plunger, a screw acting against the plunger to adjust the same and correspondingly adjust the extractor, the extractor being adapted to jointly clamp the shell of the cartridge when the latter is fired, and means for positively separating the shell from the clamping engagement of the firing pin and the extractor on recoil of the breech-block.

14. A fire arm comprising a frame, a breech block, a laterally immovable firing pin carried by the breech block, an extractor also carried by the breech block to coact with the firing pin when the cartridge is fired to clamp the shell, means for causing the extractor to move rearwardly to effect such coaction, and independent means for positively separating the shell from the joint clamping engagement of the firing pin and the extractor on recoil of the breech block.

15. A fire arm comprising a frame, a breech block, a firing pin carried by the breech block, an extractor also carried by the breech block, means for applying a thrust to the extractor toward the rear of the breech-block to cause it to clamp the shell against the firing end of the firing pin both on the same side of the shell, and independent means for positively separating the shell from the joint clamping engagement of the firing pin on recoil of the breech block.

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

JOHN M. BROWNING.

Witnesses:
ELSIE M. RABENSTEIN,
HEATH SUTHERLAND,