

Aug. 26, 1958

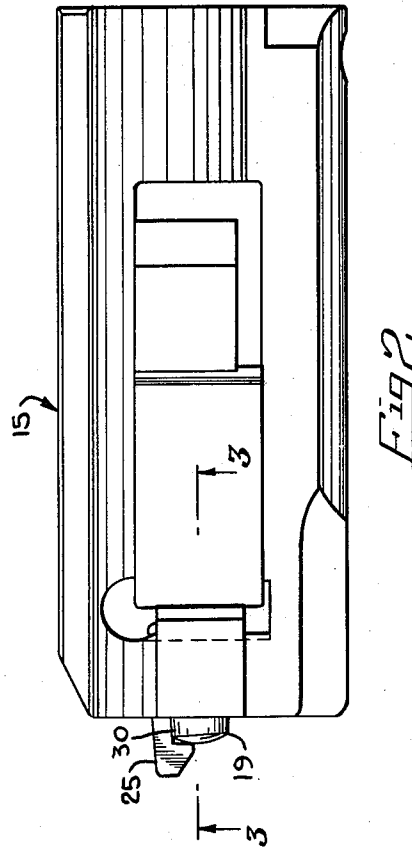
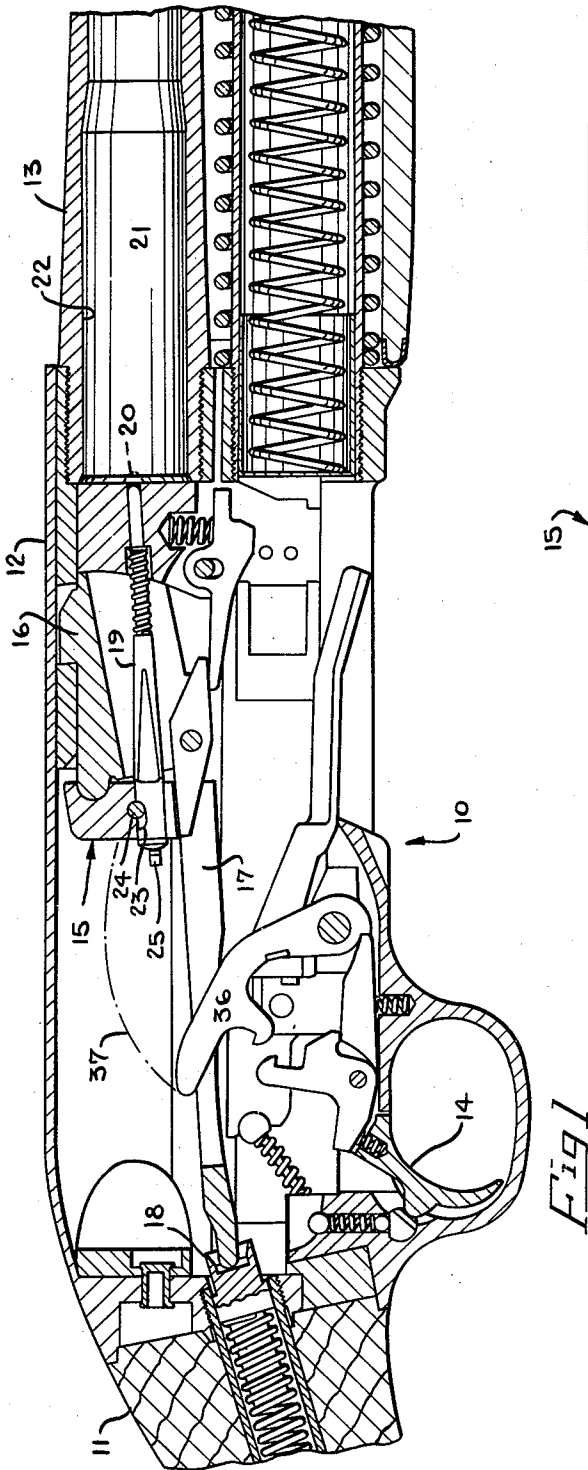
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2,848,832

FIRING PIN LOCK ASSEMBLY

Filed April 16, 1954

3 Sheets-Sheet 1



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3 Sheets-Sheet 2

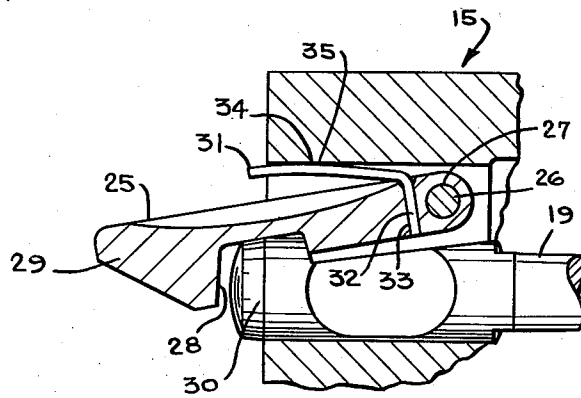
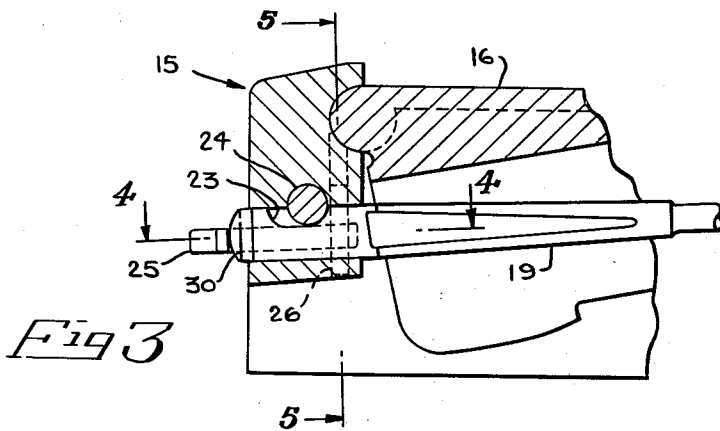


Fig 4

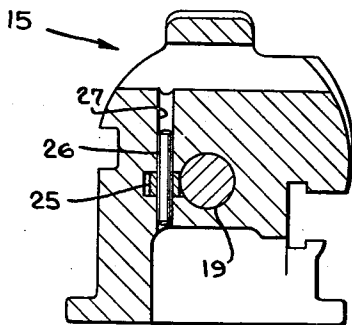


Fig 5

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3 Sheets-Sheet 3

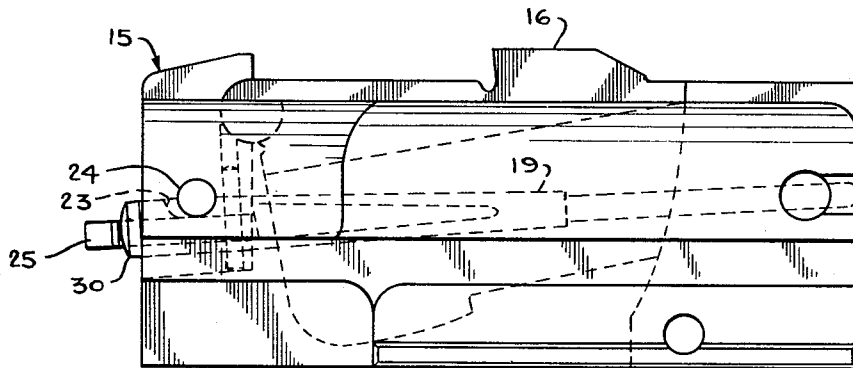


Fig 6

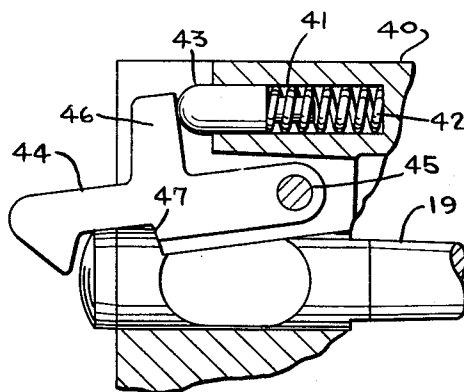


Fig 7

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FIRING PIN LOCK ASSEMBLY

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Application April 16, 1954, Serial No. 423,757

1 Claim. (Cl. 42—70)

This invention relates to a firing pin lock assembly and, more particularly, to a breech block or bolt in a gun of the automatic and semi-automatic type, which breech block contains safety features to prevent premature firing during loading of such types of guns.

Heretofore, when a shot gun of the automatic or semi-automatic type is loaded and the breech block or bolt is brought into ready position for firing by the tension of the spring acting mechanism in the rear of the gun, there is a tendency, due to the inertia of the mass of the breech block in its forward movement towards the barrel of the gun, for the firing pin in the breech block to surge forward when the forward movement of the breech block has been suddenly arrested by contact with the barrel extension and to thereby prematurely strike the primer of the shell in the firing chamber of the barrel. Such lack of control of the firing of the shell during loading has been known to cause a considerable number of accidents because of the premature firing of the shell during loading of the gun.

With the above and other disadvantages in view, it is an object of my invention to provide a firing pin lock assembly to prevent contact of the firing pin with a shell being loaded into the firing chamber.

One other object of the invention is to provide a firing pin lock assembly wherein the firing pin is locked out of contact with the shell when the inertia of the bolt is carried forward with the firing pin during loading of the gun.

Still another object of my invention is to provide a firing pin lock of relatively simple construction which, at the same time, is free of the tendency of premature firing.

A specific object of my invention is to provide a gun having a breech block or bolt assembly wherein premature action of the firing pin is prevented by means of a novel lock assembly adapted to co-act with the hammer and bolt assembly of the gun.

Other objects and features of my invention will become apparent from the following detailed description taken in conjunction with the accompanying drawings, in which:

Fig. 1 shows a fragmental sectional view of a shot gun of the automatic or semi-automatic type, such as disclosed by Browning U. S. patents, incorporating a preferred embodiment of my invention therein;

Fig. 2 is a top plan view of a detail showing a breech block;

Fig. 3 is an enlarged, detailed view of a section taken on line 3—3 of Fig. 2;

Fig. 4 is an enlarged, detailed fragmental view taken on line 4—4 of Fig. 3;

Fig. 5 is an enlarged, detailed sectional view taken on line 5—5 of Fig. 3;

Fig. 6 is a side elevation of Fig. 2; and

Fig. 7 is a detailed, fragmental sectional view of a modification of the embodiment shown in Fig. 4.

Referring now particularly to the drawings in which

like reference characters denote like parts throughout, it will be noted that there is provided the usual type of gun 10, such as is shown and described in the Browning U. S. Patent 689,283 issued December 17, 1901. It will be noted that said gun 10 comprises a stock 11, a receiver 12, and a gun barrel and magazine 13. In the receiver 12, it will be noted that there are provided the conventional trigger 14 and hammer 36 mechanism and a sliding breech block assembly 15, as shown. In said breech block 15, I provide a locking block 16 which is pivotally or freely mounted in the upper portion of the breech block assembly and is adapted to move in the middle of said breech by split operating link 17 operated by a spring action assembly 18, as shown, in the stock 11 of said gun. Inside said breech block 15 there is provided a slidable firing pin 19 wherein the forward portion is adapted, under proper conditions, to strike the primer 20 in a shell 21 when in the firing chamber 22 of said barrel. It will be noted that said firing pin 19, at its rear portion, has a recess 23 to accommodate a cross pin 24 extending through block 15 so that it inhibits the forward or rearward motion of said firing pin in the block 15. In addition, said breech block 15 is provided, at its rear end, with a firing pin lock 25 which is pivotally mounted at one end to the breech by means of a pin 26 and is pivoted to said breech laterally so as to move horizontally, inwardly and outwardly of said recess 48, in said firing pin 19.

It will be noted that said firing pin lock 25, as shown, has an opening 27 at one end to accommodate said pin 26 in the breech block. Furthermore, the middle portion of said lock has a recess 28 and forms a terminal outwardly projecting inclined cam contacting portion 29 whereby the recess 28 is adapted to accommodate and engage the outwardly extending terminal portion 30 of said firing pin.

It will be noted, as shown in Fig. 4 of the drawings, that the firing pin lock is held in locked position with pin 19 by means of a lock spring 31, the shorter end 32 of which is inserted into the side opening 33 of the firing pin lock 25. Said lock spring, as noted from the drawing, extends angularly from the firing pin lock and contacts the inner side wall 34 of the breech at 35 for normally keeping the firing pin lock in engaged position with the firing pin.

As seen from this described construction, if the breech block is forced forwardly by action spring 18, a great amount of inertia develops in the breech block assembly. Such inertia on movement of breech block 15 is prevented from actuating the firing pin 19 since such firing pin is in engagement with or held by said firing pin lock 25. It is only when the hammer 36 of the trigger mechanism assembly moves forwardly in its path 37 to strike the firing pin that the firing pin lock 25 is forced laterally, releasing its engagement with the firing pin and thus permitting impact of the hammer on the firing pin which, in turn, strikes the primer of the shell. After the firing of said shell, the breech block moves rearwardly in the receiver and the hammer reverts to its former position preparatory to another strike. As the rearmost movement of the breech block is arrested and the forward motion is started, the locking block is rotated downward bringing the firing pin back to its rearmost position, and the firing pin lock, due to the tension of said spring 31, engages the firing pin again. In addition to the locking block retracting the firing pin, I may provide the usual spring around the firing pin to normally force the pin rearwardly in the breech block. This action is continued after each loading or firing of the shell.

In the modification shown in Fig. 7, I provide a breech block 40 containing a rear side opening 41 for accommodating therein a spring 42 and a plug 43 operable by said

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spring 42. In addition, a firing pin lock 44 is pivoted to the inside of the breech block 40 by means of a pin 45. Said pin lock 44 has an outwardly protruding part 46 and firing pin contacting portion 47. Spring 42 normally forces plug 43 outwardly against part 46 to effect locking of pin 19 by said contacting portion 47. Said modified form of locking means, as shown and described, can be readily used in lieu of the embodiment shown in Fig. 4 of the drawings.

From the foregoing description, taken in conjunction with the accompanying drawings, it will be noted that my invention is applicable to an automatic or other type of gun. I provide in the breech block a firing pin lock assembly so as to prevent premature firing when the gun is closed, without which the inertia of the firing pin may cause a premature explosion when there is automatic loading of the firing chamber. Furthermore, my invention is applicable to any type of firearm which has a firing pin carried by the breech closing or sliding mechanism.

While a preferred embodiment of my invention has been described and shown, it is to be understood that various modifications as to arrangement of parts, their use and composition, may be made without departing from the spirit and scope of the invention as claimed herein.

I claim:

In a firearm of the type having a receiver, a breech block slidable in the receiver, a firing pin movable in the

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breech block, the combination wherein said pin has a recess in the rear portion thereof, a firing pin lock pivotally mounted in the breech block and movable therewith, said lock having a recess positioned to selectively engage with the recess portion of said firing pin, a projection extending rearwardly beyond said pin and breech block, the end of said rearward projection extending laterally of said pin partially across the end thereof when in locking position, said rearward projection having an inclined cam surface, a second lateral projection extending in a direction away from said firing pin, an opening formed in said breech block, a coil spring located in said opening, a plug in said opening outward of said spring, said plug being positioned to engage said second lateral projection to thereby urge the firing pin lock in pin locking position, and hammer means for making sliding contact with the cam surface to release the lock and strike the firing pin.

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