

June 3, 1952

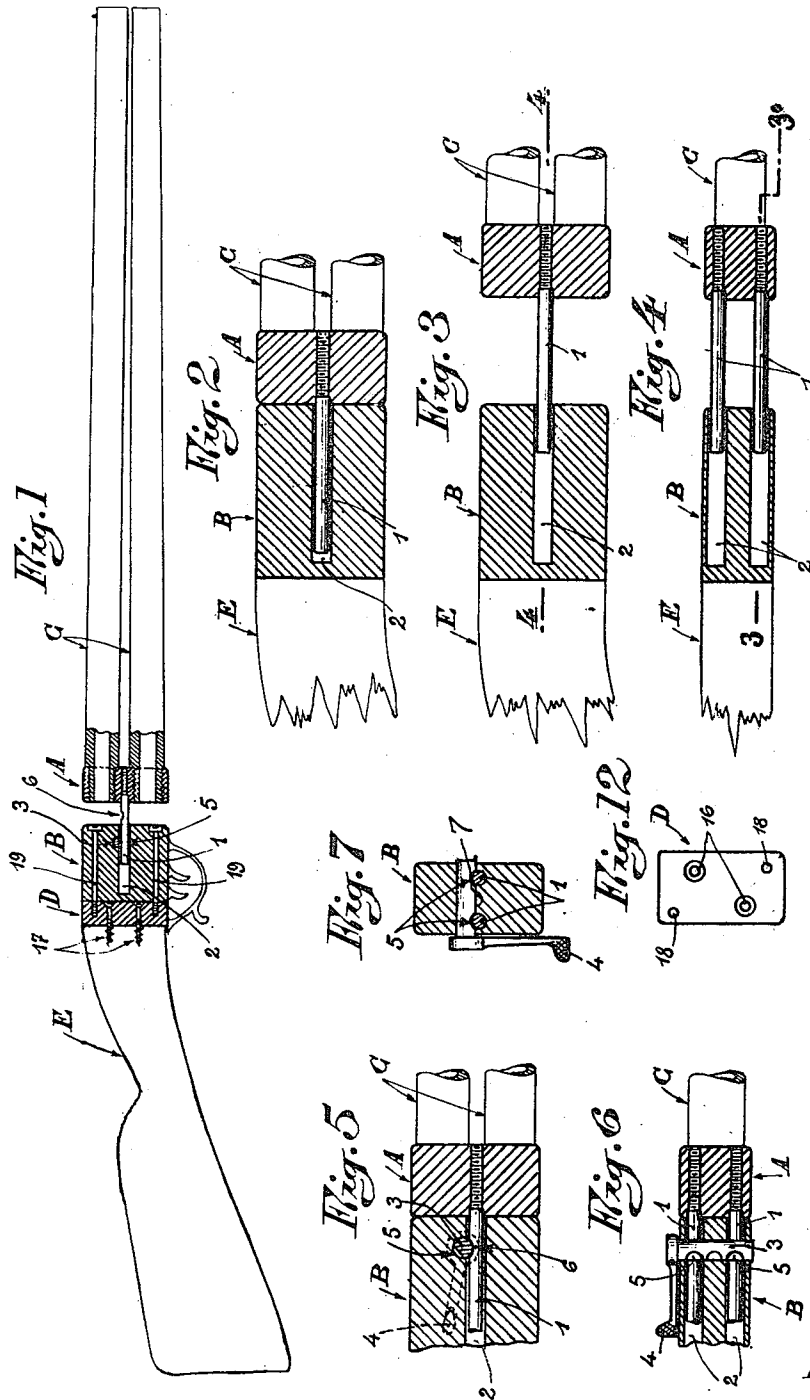
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2,598,885

STOCK AND BARREL CONNECTION IN GUNS

Filed May 27, 1948

3 Sheets-Sheet 1



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Fig. 8

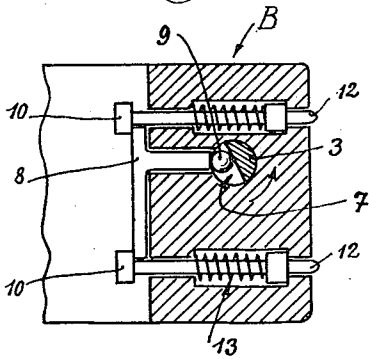


Fig. 9

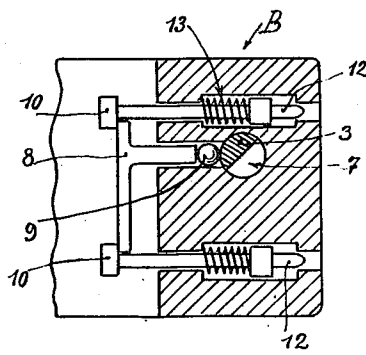


Fig. 10

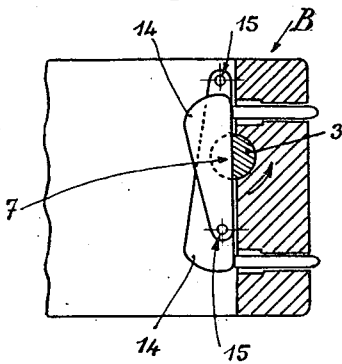
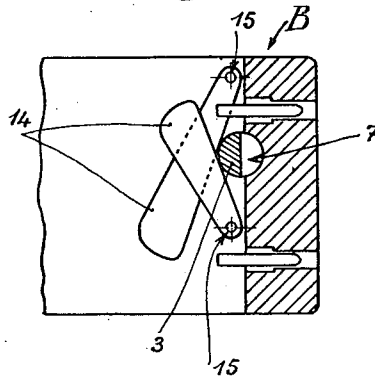


Fig. 11



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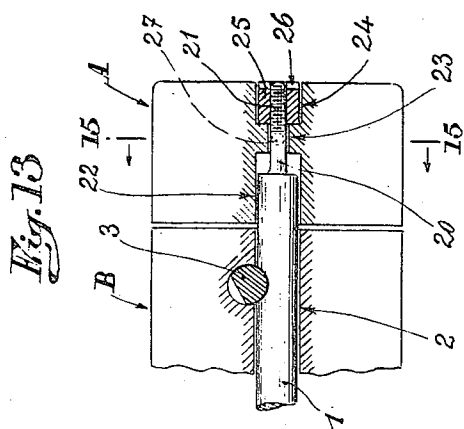
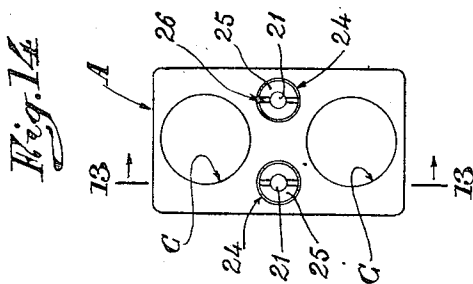
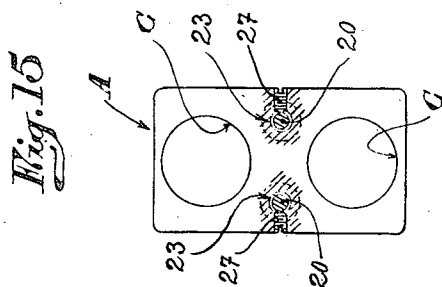
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UNITED STATES PATENT OFFICE

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STOCK AND BARREL CONNECTION IN GUNS

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6 Claims. (Cl. 42—75)

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Speaking generally, the design of small arms, and sporting guns more especially, has remained almost unchanged in its principle. In fact, either with guns having drop-down or even turning barrels, or with guns having fixed barrels with sliding or even turning rifle-bolts, the mechanical problems raised by these various types have been solved in a more or less successful and sound manner, but the mechanical features of the mechanisms, the machining and adjustment are always highly intricate and call for expert skilled labor and are inconsistent with up to date methods of mass production at a low cost.

The object of the present invention is to harmonize these various standpoints by a novel mechanical design of the firearm.

The main feature of my new gun lies in the fact that the connection between the block on which are fastened the barrel or barrels that may be placed side by side or one above the other and the block containing the striker mechanism and connected to the butt, is ensured by at least two metallic rods, of preferably circular cross section, fastened to one of these blocks, generally to the barrel block, and sliding in corresponding holes bored in the other block.

It will be understood that this arrangement, at one and the same time, enables the gun to be loaded with the greatest ease and from a structural point of view, allows the question of machining to become very simple by eliminating guide-ways, dovetailed or otherwise, that always require a great nicety of adjustment so as to obtain the correct degree of accuracy.

This arrangement, on the other hand, is adapted to receive a locking system for the gun that is very simple and highly reliable when it is loaded and ready for firing.

According to an essential feature of my invention, the rods through which the barrel block and the butt block are assembled are locked in place by means of a transversal spindle or bolt adapted to slide in a corresponding bore that partly crosses the holes bored in one of the blocks for receiving the rods; these rods are provided with recesses or notches adapted to register in their operative position with the spindle bore to allow the passage of the locking spindle in the parts of its bore that coincide with the parts left free by said recesses in the rod holes; at this moment the rods are obviously held against sliding by the spindle engaging said recesses.

In accordance with a preferred form of execution, the bolt itself shows opposite each of these rods a groove so that through a turn of about

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90°, that is obtained for instance by means of a lever located on the outside to one side of the gun, these grooves may be made to register with the rods and thus enable them to slide freely.

This locking system has the advantage of being of a very easy construction with a high degree of accuracy while at the same time it is very strongly built, thus allowing the block on which it is assembled, generally the striker block, to be made of some light alloy, since the resultant force arising from the combustion of the gunpowder in the cartridge corresponds to a tractional stress on the rods, which stress is taken up by the transverse steel bolt. As the metal is not under any bending strain, it has a very high degree of resistance.

This method of locking leads actually to a non-reversible system of cocking of the striker mechanism that is of the utmost simplicity and thoroughly reliable.

To obtain this cocking system that forms another object of the invention, I furnish the bolt mentioned above with a cam or, what is more simply done, I cut the bolt away over a portion of its periphery so that it can be made to act as a cam, while taking advantage of this particular cam-shaped portion at the time of handling this bolt when it comes to opening up the gun by separating the two blocks, so as to force back the part producing the cocking of the strikers.

This arrangement of a cam-shaped portion on the bolt releases the strikers locked in their cocked position when the bolt is turned into its barrel locking position so that they may be operated freely when required.

Finally, to keep the manufacture on the sound and simple basis, that I am seeking to obtain, the invention also proposes a special method of assembly of the butt on the block containing the striker mechanism, which assembly consists merely of an intermediary part or sole-piece laid on flat, without its having to be fitted therein against the wood of the butt, and fastened to it by two simple wood-screws, this sole-piece then taking on its other surface the block containing the striker mechanism that is fitted to it by means of two screws that go right through it.

This form of assembly is, therefore, very easy to execute it is taken apart very simply and does not detract in any way from the strength of the butt wood, while the present types of assembly involve cutting in the butt a number of notches to embed therein the various mechanical members and their accompanying parts, or to drill

right through the length of the butt so as to house there a threaded rod that is screwed in the metal part of the gun to keep it up against the wood of the butt.

My invention provides also for a particular manner of securing the guiding rods in their blocks. This form of execution makes the mounting easier without requiring an exceptional accuracy in manufacture, while ensuring very easily the taking up of any play that may arise when the two blocks are being brought into contact with one another.

To this purpose, instead of being secured permanently inside the barrel block, said two rods are mounted with some friction inside same and carry at their end facing the zone of fitting of the barrels in the barrel block a portion that is cut from the bar and is threaded so as to receive a fastening nut embedded preferably inside a corresponding recess.

It will be readily understood that such an arrangement provides a great ease in the mounting of the gun. As a matter of fact, even in the case of guiding rods machined according to mass production methods, if the location of the bolt recess is not sufficiently accurate to obtain the correct application of the two blocks against one another in the mounting, it is sufficient when said rods are held fast in the block carrying the striker mechanism by the locking bolt, to tighten their nuts so as to provide for the movement of the two blocks towards one another and to urge them against one another under considerable pressure.

This manner of mounting allows furthermore a very easy compensation of the play that may arise after some time through the wearing of the bolt or of the corresponding part of one or both rods, i. e. the two blocks will be again urged into intimate mutual contact by screwing home the corresponding nut or nuts.

In any case, a ready understanding will be obtained of the invention by referring to the attached somewhat diagrammatic drawings that are presented only as an example relating to the case of a double-barrelled sporting gun where the gun barrels are placed one above the other. In said drawings:

Fig. 1 is an assembly view of the gun in a partly opened position.

Figs. 2 to 4 show in detail the connection between the two blocks as provided by means of sliding rods, Figs. 2 and 3 being two elevational sectional views along line 3—3 of Fig. 4 respectively in closed and open position and Fig. 4 a sectional plan view along line 4—4 of Fig. 3.

Figs. 5 to 7 show in detail the locking system, Fig. 5 being a side elevational view in locked position, Fig. 6 a plan view in locked position, and Fig. 7 a transversal section in released position.

Figs. 8 and 9 are side elevations respectively in uncocked and cocked positions, of a first embodiment of the cocking system including direct strikers furnished with coil springs.

Figs. 10 and 11 are two views similar to Figs. 9 and 10 corresponding to the case of cocking means using pivoting striker hammers.

Fig. 12 shows the intermediary sole-piece for the assembly of the gun on the butt.

Fig. 13 is a partly sectional side view of the two blocks through line 13—13 of Fig. 14.

Fig. 14 is a front view of the barrel block.

Fig. 15 is a transverse cross-section of said block through line 15—15 of Fig. 14.

As shown in these drawings, the gun is provided

with a block A to which are fastened the barrels C, by screwing for instance, a block B containing the locking, striker and cocking mechanisms, an intermediary sole-piece D and a butt E.

The two blocks A and B are connected to each other by two metal rods 1 screwed into the block A or secured to it in any other way and that slide without any play in corresponding borings 2 cut in block B and acting as guides for the rods.

The locking of the gun in its closed position, that is in its firing position, with block A pressed against block B is ensured by a bolt 3 arranged cross-wise in the block B and of which the turning, to the extent of about 90°, is controlled from the outside by a lever 4 (Fig. 7). This bolt that intersects the rods 1 is provided, in register with the track of the rods, with grooves 5. In the same way, each rod 1 is provided also with a groove 6 that, in the closed position is in line with the bolt 3. It will thus be perceived that in the locking position the solid part of the bolt fits, like a key, into the groove 6 of the rods and prevents any possible gap from arising between the two blocks A and B. On the other hand, by causing this bolt to turn to bring these grooves 5 into a register with the rods 1, the latter are released and may slide freely in their bored holes 2.

On this same bolt, between the rods 1, that is to say between the grooves 5, is cut a notch 7 adapted to provide for the cocking. In the case of the form of execution shown in Figs. 8 and 9, a T-shaped sliding member 8 presses against the bottom of this notch 7 through the agency of a ball 9. The arms of this sliding member rest on the flanges 10 of the strikers 12 that are drawn back by springs 13, and of which the trigger-release at the moment of firing is caused by the tumbler-trigger assembly.

It will be thus understood that, starting from the locked gun position of Fig. 8, the turning of the bolt 3, required for obtaining the unlocking of the rods 1, as explained above, has the accompanying effect of pushing back along the cam surface of the bolt not shown in detail the ball 9 that in its turn pushes back the lever 8. The strikers 12 are therefore drawn back to the rear and their springs are compressed. They are, in the usual way, engaged simultaneously in this position by the tumblers, not shown.

In the case of the form of execution shown in Figs. 10 and 11 adapted to rocking striker hammers 14 with pivots at 15, the working is the same, the turning of the bolt 3 through 180° ensures the cocking of these hammers by obliteration of the notch 7 that is caused to face away from the hammers. Obviously the two hammers that are comparatively thin are located in parallel planes so as to not interfere with one another while both hammers engage the cam on the bolt 3.

In the case illustrated in Figs. 13 to 15, the rod 1 includes a part 20 that is cut from the bar and ends with a threaded extension 21. Said rods are fitted with somewhat considerable friction into the barrel block A that is provided with coaxial bores 22—23 adapted to receive said rods in their first part 22 and their extensions in their second reduced diameter part 23. Said block A shows furthermore on the side facing the barrels C an enlarged recesses 24 inside which are housed nuts 25 adapted to be screwed over the threaded extensions 21 of the rods, said enlarged recesses opening, of course, into the bore elements 23. Said nuts are provided with notches 26 on the surface facing the front of the block A whereby

they may be driven into rotation through a correspondingly shaped notched screw driver.

Furthermore, said block A is provided in register with each reduced-diameter bore 23, with a tapped hole opening laterally into said bore and receiving a grub screw 27 through which it is possible to lock in position each of the guiding rods. Said grub screw being released and the bolt 3 in the block B being in its operative position, it is readily apparent that in order to provide for a perfect bearing of the block A against the block B, it is sufficient to screw home the nuts 25 the tractional stresses illustrated by the arrows that are provided through this screwing producing the desired contacting between the blocks.

It is also pointed out that the assembly of the block B on the butt E is carried out through the agency of an intermediary plate or sole-piece D (Fig. 12) provided with two holes 16 through which pass two wood-screws 17 for fastening it to the butt and with two tapped holes 18 taking the threaded end of two rods 19 going right through the block B and thus ensuring its attachment to the sole-piece (Fig. 1).

What I claim is:

1. A sporting or the like gun comprising a barrel block including the block proper and two barrels rigid therewith, a striker mechanism, a butt block carrying said mechanism and adapted to come into contact with the entire rear surface of the barrel block, a butt rigid with the butt block, one of the blocks being provided with at least two longitudinal bores opening into the surface of said block adapted to engage the other block, two metal rods rigidly secured to said other block arranged in a direction parallel to the axis of the gun, slidably engaging the bores in the first block, adapted to enter a fully engaged position in said bores when the two blocks engage one another and provided with transversal notches at corresponding points of their length, the bored block being provided with a further transverse bore registering partly with the first bores at points corresponding to the location of the notches in the rods in their fully engaged position and a transverse bolt adapted to slide in the transverse bore of the bored block and to engage the transversal notches of the rods rigid with the other block in their fully engaged position.

2. A sporting or the like gun comprising a barrel block including the block proper and two barrels rigid therewith, a striker mechanism, a butt block carrying said mechanism and adapted to come into contact with the entire rear surface of the barrel block, a butt rigid with the butt block, one of the blocks being provided with at least two longitudinal bores opening into the surface of said block adapted to engage the other block, two metal rods rigidly secured to said other block arranged in a direction parallel to the axis of the gun, slidably entering the bores in the first block, adapted to enter a fully engaged position in said bores when the two blocks engage one another and provided with transversal notches at corresponding points of their length, the bored block being provided with a further transverse bore registering partly with the first bores at points corresponding to the location of the notches in the rods in their fully engaged position and a transverse bolt rotatably held in, and adapted to slide in the transverse bore of the bored block and to engage the transversal notches of the rods rigid with the other block in their fully engaged position, said bolt being provided

with notches at points registering with the longitudinal bores in the first block for releasing the entire cross-section of said longitudinal bores for a predetermined angular setting of said bolt, and means on the outside of the first block for controlling the angular position of the bolt.

3. A sporting or the like gun comprising a barrel block including the block proper and two barrels rigid therewith, a striker mechanism, a butt block carrying said mechanism and adapted to come into contact with the entire rear surface of the barrel block, a butt rigid with the butt block, one of the blocks being provided with at least two longitudinal bores opening into the surface of said block adapted to engage the other block, two metal rods rigidly secured to said other block arranged in a direction parallel to the axis of the gun, slidably entering the bores in the first block, adapted to enter a fully engaged position in said bores when the two blocks engage one another and provided with transversal notches at corresponding points of their length, the bored block being provided with a further transverse bore registering partly with the first bores at points corresponding to the location of the notches in the rod in their fully engaged position and a transverse bolt rotatably held and adapted to slide in the transverse bore of the bored block and to engage the transversal notches of the rods rigid with the other block in their fully engaged position, said bolt being provided with notches at points registering with the longitudinal bores in the first block for releasing the entire cross-section of said longitudinal bores for a predetermined angular setting of said bolt, and means on the outside of the first block for controlling the angular position of the bolt, a gun cocking system carried by the butt block and adapted to control the striker mechanism, a cam-shaped member rigid with the transverse bolt and adapted to lock the gun cocking means in its cocked position and to release same for operation when in the angular position corresponding to locking of the rods through the bolt.

4. A sporting or the like gun comprising a barrel block including the block proper and two barrels rigid therewith, a striker mechanism, a butt block carrying said mechanism and adapted to come into contact with the entire rear surface of the barrel block, a butt rigid with the butt block, one of the blocks being provided with at least two longitudinal bores opening into the surface of said block adapted to engage the other block, two metal rods rigidly secured to said other block arranged in a direction parallel to the axis of the gun, slidably entering the bores in the first block, adapted to enter a fully engaged position in said bores when the two blocks engage one another and provided with transversal notches at corresponding points of their length, the bored block being provided with a further transverse bore registering partly with the first bores at points corresponding to the location of the notches in the rods in their fully engaged position and a transverse bolt adapted to slide in the transverse bore of the bored block and to engage the transversal notches of the rods rigid with the other block in their fully engaged position, a substantially flat shoe member inserted between the butt and the butt block, wood screws securing said member rigidly with the butt and threaded rods passing throughout the butt block and threadedly engaging the shoe member for rigidly assembling it to the butt block.

5. A sporting or the like gun comprising a bar-

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rel block including the block proper and two barrels rigid therewith, a striker mechanism, a butt block carrying said mechanism and adapted to come into contact with the entire rear surface of the barrel block, a butt rigid with the butt block, one of the blocks being provided with at least two longitudinal bores opening into the surface of said block adapted to engage the other block and having a reduced diameter at their other end, two metal rods including each a threaded coaxial extension of reduced diameter, slidably engaging the bores in the first block with their extensions engaging the corresponding reduced diameter end of the bore, nuts threadably engaging the outer ends of the rod extensions for adjusting the operative location of said rods in the first block, said rods being adapted to enter a fully engaged position in said bores when the two blocks engage one another and provided with transversal notches at corresponding points of their length, the bored block being provided with a further transverse bore registering partly with the first bores at points corresponding to the location of the notches in the rods in their fully engaged position and a transverse bolt adapted to slide in the transverse bore of the bored block and to engage the transversal notches of the rods rigid with the other block in their fully engaged position, said bolt being provided with notches at points registering with the longitudinal bores in the first block and uncovering the entire cross-section of said longitudinal bores for a predetermined angular setting of said bolt and means on the outside of the first block for controlling the angular position of the bolt inside the transverse bore.

6. A sporting or the like gun comprising a barrel block including the block proper and two barrels rigid therewith, a striker mechanism, a butt block carrying said mechanism and adapted to come into contact with the entire rear surface of the barrel block, a butt rigid with the butt block, one of the blocks being provided with at least two longitudinal bores opening into the surface of said block adapted to engage the other block and having a reduced diameter at their

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other end, said end opening finally through a larger diameter coaxial bore, two metal rods including each a threaded coaxial extension of reduced diameter, slidably engaging the bores in the first block with their extensions engaging the corresponding reduced diameter ends of the bores, nuts threadably engaging the outer ends of the rod extensions, housed inside the larger diameter opening of the bore extension for adjusting the operative location of said rods in the first block, said rods being adapted to enter a fully engaged position in said bores when the two blocks engage one another and provided with transversal notches at corresponding points of their length, the bored block being provided with a further transverse bore registering partly with the first bores at points corresponding to the location of the notches in the rods in their fully engaged position and a transverse bolt adapted to slide in the transverse bore of the bored block and to engage the transversal notches of the rods rigid with the other block in their fully engaged position, said bolt being provided with notches at points registering with the longitudinal bores in the first block and uncovering the entire cross-section of said longitudinal bores for a predetermined angular setting of said bolt, means on the outside of the first block for controlling the angular position of the bolt inside the transverse bore, a substantially flat shoe member inserted between the butt and the butt block, wood screws securing said member rigidly with the butt and threaded rods passing throughout the butt block and threadably engaging the shoe member for rigidly assembling it to the butt block.

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