April 13, 1926. 1,580,406

J. M. BROWNING

SUPPORT FOR FIREARMS

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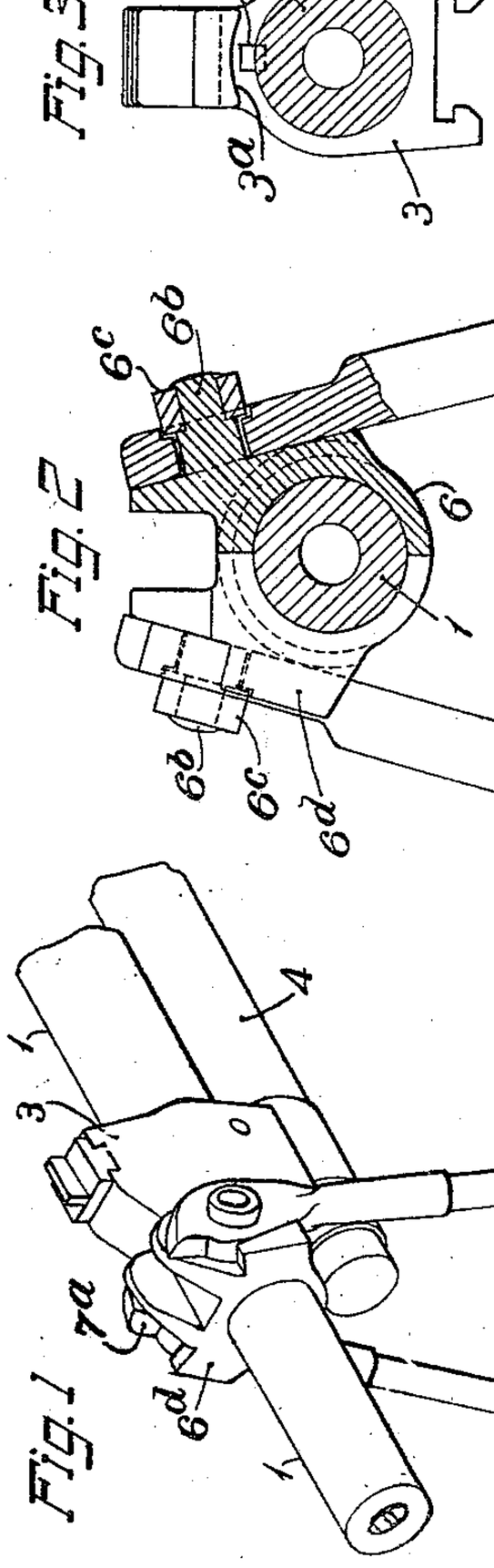

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SUPPORT FOR FIREARMS.

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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 Supports for Firearms, of which the following is a specification, reference being had to the accompanying drawings, forming a part hereof.

The invention relates generally to supports for firearms and more particularly to bipod rests for automatic rifles such as are used to support the forward end of a rifle when the operator of the same is firing from the prone position.

It is an object of the invention to provide a device of this class which is simple in construction and light in weight but yet most durable, which may be easily attached to and detached from the firearm, and which may be readily folded to extend along the firearm and held in folded position where it does not interfere with the carrying or with the use of the firearm when the same is being fired from the shoulder or the hip, or speedily unfolded for use when desired.

With this and other objects in view, the invention comprises the new and useful combinations of elements and arrangement of parts which are fully described herein, illustrated in the accompanying drawings, and pointed out in the appended claims.

In the drawings:

Fig. 1 represents, in a perspective view, the forward portion of a firearm showing the novel improved bipod support applied thereto with the legs of said support in their operative position.

Fig. 2 represents, on an enlarged scale, a front view of the barrel of the firearm and the bipod support mounted thereon, the barrel and the right hand half of said support being shown in section.

Fig. 3 represents a front view, on the same scale as Fig. 2, of the barrel of the firearm and a bracket mounted thereon, the barrel being shown in section and the bracket, in elevation.

Fig. 4 represents a side elevation, on the same scale as Fig. 2, of a portion of the barrel with said bracket and said bipod support in their assembled relation.

Fig. 5 represents, on a reduced scale, a top view of a portion of the firearm with the support applied thereto, showing the legs of said support in their inoperative folded position.

Fig. 6 represents a side elevation of the parts shown in Fig. 5.

In the embodiment of the invention selected for illustration, the novel improved bipod rest is shown applied to a firearm of the class shown in my prior Patent No. 1,293,022, for automatic machine rifle, granted February 4, 1919, which comprises a barrel 1, a breech casing 2, in which the breech end of the barrel is secured, a bracket 3 mounted on the barrel and adapted to carry at its top the front sight, a gas cylinder 4 slidably supported at its front end in the bracket 3 and having a rearward extension fastened in the breech casing by the transverse pin 4^a, see Fig. 6; and the fore arm 5 secured to said rearward extension of the gas cylinder 3.

The bracket 3 is fixedly secured to the barrel 1 by suitable means, such as the key 3^b fitting in corresponding key ways in the barrel and the bracket for preventing relative rotary movement between said parts, and the transverse pin 3^c for locking the bracket 3 in position with a portion of its rear surface resting against a shoulder on the barrel, see Figs. 3 and 4.

The bipod rest of the invention comprises a trunnion sleeve 6 carrying legs 7, said sleeve being rotatably mounted on the barrel 1 of the firearm and held in position longitudinally of the barrel by the engagement of a depending segmental tongue 3^a on a forward projection at the top of the bracket 3 in a corresponding groove 6^a in the trunnion sleeve 6, see Fig. 4. As is clearly shown in Figs. 2 and 4, the lower portion of the sleeve 3 is cut away thereby forming a cylindrical surface the radius of which is equal to or less than the radius of the bottom of the groove 6^a. By comparing Figs. 2 and 3, it will be seen that this cylindrical surface extends through a greater arc than the segmental tongue 3^a on the bracket 3.

By this construction, it will be evident that the bipod rest can be readily attached to the firearm by sliding the trunnion sleeve 6 over the forward end of the barrel, moving it against the front face of the bracket 3 while in an inverted position, and then rotating it until the groove 6^a passes over the segmental tongue 3^a on the bracket and into the position shown in the drawings. To

detach the bipod rest from the firearm, the operations are reversed.

In order to prevent accidental detachment of the bipod rest, the rotation of the trunnion sleeve in either direction from the position shown in Fig. 1, is limited. In the present embodiment of the invention, such limiting means comprises the forward end of the gas cylinder 4 which normally projects some distance forward of its supporting bracket 3 and in this position co-operates with the legs 7 carried by the trunnion sleeve 6 to limit the rotation of said sleeve. The gas cylinder 4 of this class of firearms is readily attached to or detached from the firearm, being slidably supported at its forward portion by a T-shaped rib thereon fitting a corresponding groove in the lower portion of the bracket 3, and having its rearward extension secured in the receiver by a transverse pin, the withdrawal of which permits the gas cylinder to be removed in forward direction from the firearm. By first removing the gas cylinder in this manner the bipod rest can be attached to or detached from the firearm in the manner hereinbefore described.

The legs 7 of the improved bipod rest are pivotally secured at their upper ends to the trunnions 6^b projecting outwardly at right angles to the upwardly and inwardly inclined surfaces provided on the opposite sides of the trunnion sleeve 6. The trunnions are preferably arranged, as shown in Figs. 1, 3, 4 and 6, above the plane of the barrel of the firearm, and each of said trunnions is reduced in diameter at its outer portion, see Fig. 3, thereby forming a shoulder against which a retaining washer 6^c fitting said reduced portion is secured by suitable means, such as the peened over end of said reduced portion. The outer portion of the hole in the leg receiving the trunnion is counterbored, as shown in Fig. 3, to receive the inner portion of the washer 6^c.

By this construction, it will be seen that the legs 7 may be readily folded to an inoperative position along the barrel as shown in Figs. 5 and 6, or quickly extended to their operative position, shown in Figs. 1, 2 and 4. The forward swinging movement of the legs 7 is limited by the lateral projections 6^d at the forward portion of the trunnion sleeve 6, and the upward and rearward swinging movement of said legs is limited by the engagement of shoulders 7^a on said legs with the respective top surfaces of the lateral projections 6^d.

The legs 7 are preferably steel rods having a spring temper, which permits them to be flexed or sprung for a purpose now to be described. This elastic property of the legs is conveniently made use of for locking them in inoperative position without the provision of additional parts. To this end the shoes 7^b which are rigidly secured near the lower end of the legs to limit their sinking into the ground are so constructed and arranged as to co-operate with a longitudinally extending element of the firearm, such as the barrel, to keep the legs in folded position, the elasticity of the legs serving to keep said parts in their co-operative relation. In the present embodiment of the invention, each of the shoes 7^b has an inwardly projecting portion provided with a concave forward face, see Fig. 1, and to permit these portions of the shoes 7^b to overlap when the legs are in the folded position, see Fig. 5, one of said shoes is arranged a slight distance further from the pivot of its leg then the other of said shoes.

In swinging the legs rearwardly and upwardly from the position shown in Fig. 1, their outer ends will automatically move inwardly toward each other and when the legs approach a position where they are almost parallel, but before they have reached the position shown in Figs. 5 and 6, the stop shoulders 7^a thereon engage the corresponding top surfaces of the lateral projections 6^d on the trunnion sleeve 6. To bring the legs to the folded position shown in Figs. 5 and 6, they are then flexed by moving their free ends outwardly and upwardly so as to cause the ends of said inward projections of the shoes 7^b to clear the barrel 1, when said free ends are moved inward and allowed to snap, due to the elasticity of said legs, into the position shown in Figs. 5 and 6 with the concave surfaces on the inward projections of the shoes 7^b resting on the barrel where they are automatically held by the elasticity of the legs 7.

In order to lessen the amount of lateral flexing of the legs 7 to clear the barrel 1 and the forearm 5 of the firearm, when moving them to and from their inoperative position, a certain amount of play may be provided, as shown in Fig. 2, in the pivotal connections of the legs to the trunnion sleeve 6. Such play in the connections is also of advantage in permitting a larger angle of lateral training of the firearm when supported by the rest, without changing the position of the lower ends of the legs.

The elasticity of the legs also contributes to this end, by permitting the legs to be flexed.

By the construction hereinbefore described, it will be evident that I have provided a bipod rest of exceedingly simple construction but by which, when in its operative position, the forward portion of the firearm is supported to allow of vertical and lateral training and of keeping the sight line vertically above the bore of the barrel. When in its inoperative position, the legs are folded in approximately parallel relation to each other and to the barrel above the plane of

the top of the forearm, where they do not interfere with the grasping of the forearm when the firearm is fired from the shoulder or the hip.

What I claim and desire to secure by Letters Patent is:

1. A bipod rest for firearms comprising legs foldable to inoperative position, said legs being elastic thereby permitting flexing of the same, and means whereby said legs are kept in inoperative position by their elasticity.

2. A bipod rest for firearms comprising a member supported by the barrel of a firearm, legs pivotally carried by said member to permit them to be moved to operative position or to inoperative position adjacent said barrel, said legs being elastic thereby permitting flexing of the same, and means whereby said legs are kept in inoperative position by their elasticity.

3. A bipod rest for firearms comprising hinged legs adapted to be folded into an inoperative position along the barrel of the firearm to which said rest is applied, said legs being elastic thereby permitting flexing of the same, and means whereby the elasticity of said legs keeps them in inoperative position.

4. A bipod rest for firearms comprising a sleeve rotatably mounted on the barrel of a firearm, a pair of legs pivoted to said sleeve to form an angle between them when in operative position and to lie in substantially parallel relation to each other and to the barrel of the firearm when in inoperative position, said legs being elastic thereby permitting flexing of the same, and means for keeping said legs in inoperative position comprising laterally extending elements near the free ends of said legs co-operating with the barrel of said firearm to keep said legs flexed and thereby hold the same in inoperative position by their elasticity.

5. In a support for firearms, the combination of a member mounted on the barrel of a firearm, a pair of legs pivoted to said member so as to diverge when extended to their operative position and to lie adjacent the barrel when folded to their inoperative position, said legs being elastic thereby permitting flexing of the same, and means whereby said legs are flexed when brought to their inoperative position and kept in said position by their elasticity.

6. In a support for firearms, the combination of a sleeve in which the barrel of a firearm is rotatably mounted, a pair of legs pivoted to said sleeve and adapted to be folded in inoperative position adjacent the barrel of the firearm, said legs being elastic thereby permitting flexing of the same, and means comprising stops on said sleeve and lateral projections adjacent the free ends of said legs for engagement with the barrel whereby the legs are flexed when brought to the inoperative position and held in said position by their elasticity.

7. In a support for firearms, the combination of a member mounted on the barrel of a firearm, a pair of legs pivotally mounted on said member and adapted to be swung on their pivots to operative position or to inoperative position adjacent the barrel, said legs being elastic thereby permitting them to be flexed, and shoes fixed on said legs and having inwardly extending portions adapted to be brought into a position overlying the barrel by flexing said legs, whereby the legs are kept in their inoperative position by their elasticity.

8. In a support for firearms, the combination of a member mounted on the barrel of a firearm, a pair of legs pivoted to said sleeve and adapted to be folded to inoperative position adjacent the barrel of the firearm, said legs being elastic thereby permitting flexing of the same, and means comprising stops on said member and lateral projections having curved surfaces near the free ends of said legs for engagement with the barrel whereby the legs are flexed when brought to the inoperative position and held in said position by their elasticity.

9. In a support for firearms, the combination of a member rigidly secured to the barrel of a firearm, a sleeve carrying supporting legs rotatably mounted on said barrel, means for interlocking said sleeve and member in all operative positions of said sleeve, said means permitting the separation of said member and sleeve when the sleeve is rotated beyond its operative positions, and means for normally preventing rotation of said sleeve beyond said operative positions.

10. In a support for firearms, the combination of a sleeve adapted to be rotatably mounted on the barrel of a firearm and having on its opposite sides inclined trunnions, legs pivoted on said trunnions to permit them to be freely moved to operative or inoperative positions, and lateral projections on said sleeve forming stop shoulders for limiting the movement of said legs in both directions.

This specification signed and witnessed this 29th day of May, A. D. 1924.

JOHN M. BROWNING.