May 26, 1953 P. MAGID 2,639,480

STRAP CONNECTOR

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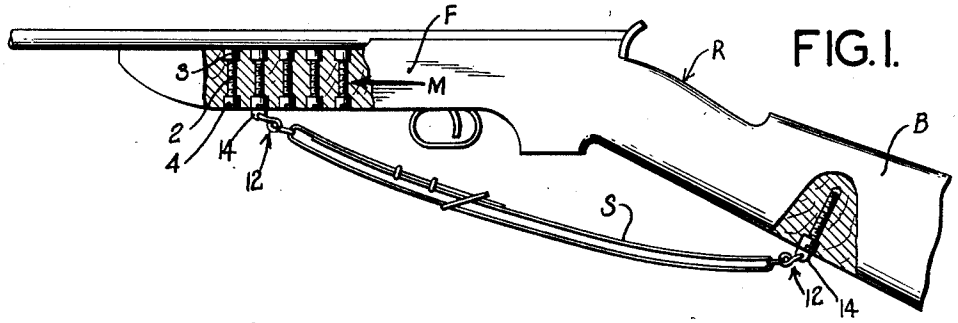

FIG. 1.

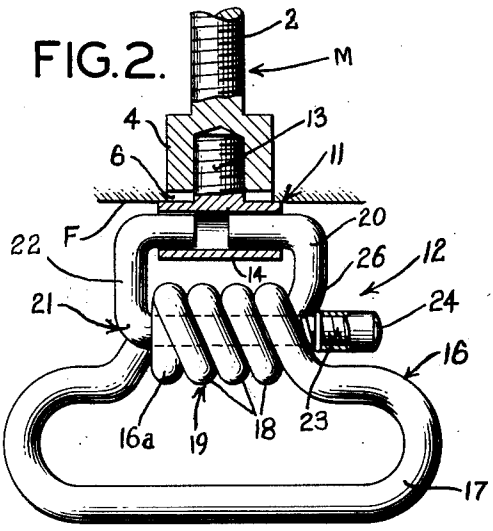

FIG. 2.

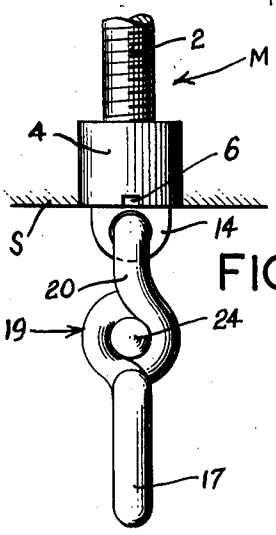

FIG. 3.

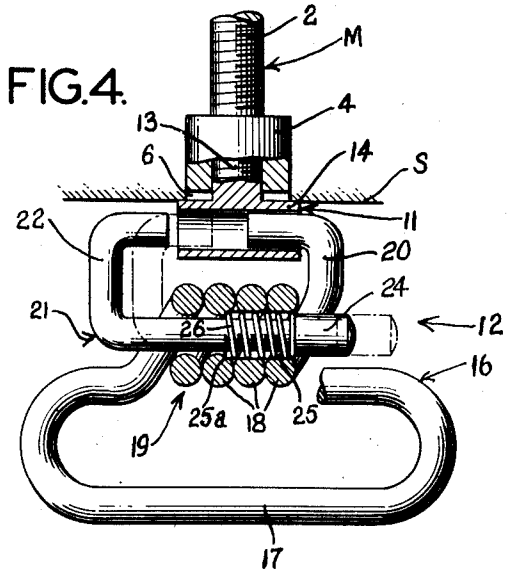

FIG. 4.

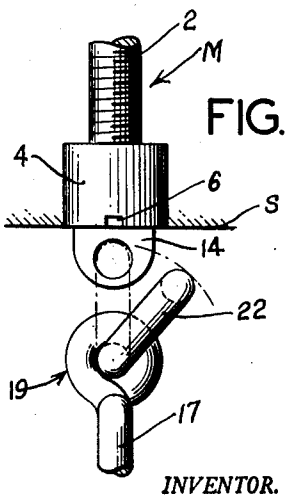

FIG. 5.

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STRAP CONNECTOR

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7 Claims. (Cl. 24—73)

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My invention relates to improvements in swivel devices and has particular reference to a swivel device which is especially adapted to be used in conjunction with a gun or rifle, to hold the sling or strap thereof.

It is an object of my invention to provide a swivel device which has means for holding a strap or sling of a gun, and additional means by which said swivel device may be quickly and easily attached and detached from the body of the gun.

The conventional removable slings of this sort are made of an appreciable number of separate metal parts which must be separately forged and individually machine-finished for assembly. This process of manufacture is therefore so detailed and time-consuming that it requires at least several months to fill an order for swivels of a specified size.

Another object of my invention, therefore, is the provision of a swivel device of the character described which consists of a minimum number of parts and which can be quickly, easily, and economically manufactured.

Still another object of my invention is the provision of a swivel device of the character described by means of which a strap or sling may be mounted on a gun or rifle for convenient adjustment and use.

Other objects and advantages of the invention will be apparent in the course of the following specification and claims when taken in connection with the accompanying drawings in which:

Fig. 1 is a side view of a gun having a pair of my swivel devices attached thereto, with portions of the gun being shown broken away to more clearly reveal the means of attachment.

Fig. 2 is an enlarged front elevation of the swivel device of my invention, with portions thereof shown in section.

Fig. 3 is a side elevational view thereof.

Fig. 4 is a sectional view similar to Fig. 3, but showing the swivel device in its opened position.

Fig. 5 is a side elevation thereof.

Referring to the drawings, particularly to Fig. 1, my swivel device is shown applied to a conventional rifle R having the usual fore-stock F and butt B.

The swivel device broadly comprises a mounting member 11 and a swivel element 12 attached thereto. Mounting member 11 is shown in the drawings having a construction adapted to be attached to a socket element M which is fully described in my prior U. S. Patent No. 2,190,268, and which is shown in the drawings hereof by way of example only. Mounting member 11 com-

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prises a hollow, tubular portion or sleeve 14 and an integral externally threaded cylindrical shaft 13 which is integral with said sleeve 14. The fore-stock F of rifle R is provided with one or more vertical bores or grooves into each of which a socket element M is inserted. Socket element M comprises a threaded bolt 2 which has a hollow, cylindrical, internally threaded head 4. Said head 4 is provided with diametrically opposed slots 6, said slots being adapted to accommodate a screw driver or other suitable tool. A nut 3 is employed to secure each socket element M within the grooves of fore-stock F as shown in Fig. 1. One or more socket elements M may be permanently mounted within the vertical grooves provided in fore-stock F so that the bottom of each head 4 is flush with the under surface of fore-stock F and that part of the fore-stock is smooth and has no projections. By providing a plurality of spaced socket elements M in the fore-stock F, it is possible to adjust the length and fit of the strap S without unbuckling the same.

The externally threaded cylindrical shaft 13 of mounting member 11 is sized to fit within the internally-threaded head 4 of socket element M whereby the sleeve or tubular portion 14 of said mounting member is secured flush against the lower surface of fore-stock F.

If the fore-stock F is solid, the sleeve 14 of mounting member M may be provided with an integral wood-screw in place of the threaded shaft 13, by means of which wood-screw the mounting member may be secured to the solid fore-stock. If desired, particularly in the event that the fore-stock is hollow, the threaded shaft 13 may be made longer, and may be directly inserted within a bore or aperture in the fore-stock and be held directly by the nut 3.

To mount one of the mounting members on the butt B of the rifle, a coarse wood screw may be set in said butt, said wood screw having a threaded hollow head which is identical with the hollow head 4 of bolt 2, previously described. This arrangement is shown in Fig. 1. If desired, however, the mounting member 11 may be provided with an integral wood screw in place of the threaded shaft 13 for mounting on the rifle butt.

Swivel element 12 comprises two lengths of metal rod which are bent into desired shapes and connected together to form the main portions of said swivel element. The rod is preferably solid and made of a semi-rigid metal which may be twisted into the desired shape by conventional

tools or machinery but which will retain its shape under normal usage. A single, relatively long piece of this rod **16** is bent to form a strap-retaining loop **17** which is sized to receive and hold the strap or sling S of the rifle.

The free ends of the rod **16** are bent around each other in uniform spiral convolutions **18** which form a bearing **19**. One free end of the rod **16** as it leaves the spiral convolutions **18**, is bent upwardly and inwardly to form a fixed mounting arm **20** which is employed in attaching the swivel element **12** to the mounting element **11**. The other free end of said rod **16** is tapered to a point as shown at **16***a* in Fig. 2, which tapered portion is bent to form the end turn of the spiral convolutions **18** and to form a planar end surface of the bearing **19** formed by said spiral convolutions, which end surface is substantially perpendicular to the longitudinal axis of bearing **19**.

The bearing **19** is formed in such a manner that the spiral convolutions **18** form an internal bore extending longitudinally through said bearing **19**. The diameter of said bore is slightly larger than the swivel element so that a section of said rod may be inserted within said bore as will be presently described.

A shorter length of solid rod **21**, which is of similar dimension and consistency as the rod **16**, is bent at one end to form an adjustable mounting arm **22** which is similar to the fixed mounting arm **20**. The straight end of said rod **21** is of sufficient length to fit entirely through the internal bore of bearing **19**. The free end of said straight portion of rod **21** is provided with external threading **23**, as shown in Fig. 2, which enables an internally-threaded plunger head or finger piece **24** to be removably secured to the end of said rod **21**. If desired, however, plunger head **24** may be permanently secured to the end of rod **21** in any conventional manner, such as by soldering, welding, or the like, although I prefer to make said plunger head removable for convenience in assembly.

The bore of bearing **19** is provided with an enlarged portion **25** which communicates therewith. This enlarged portion may be easily formed in the manufacture of the device by inserting a drill partially through the bore and increasing the diameter thereof. The enlarged bore portion **25** houses a compression coil spring **26** which is sized to fit snugly within said enlarged portion **25**, the ledge **25***a* formed at the junction between the bore and its enlarged portion **25** preventing said spring from moving longitudinally out of said enlarged portion. The spring **26** abuts said ledge **25***a* at one end, and the inner end of the plunger head **24** at the other end, thus urging said plunger head to its normal position in which it is held outside of bearing **19** and is accessible to the finger of the user. It is obvious that in biasing plunger head **24** to its normal position, spring **26** also biases mounting arm **22** toward the fixed mounting arm **20**.

In use, the plunger head **24** is depressed against the tension of spring **26**, and the free end of fixed mounting arm **20** is inserted into one side of the sleeve or tubular portion **14** of mounting member **11**. As shown in Fig. 4, in this position the end of mounting arm **22** is longitudinally spaced from the other end of sleeve **14**, and can be alined with the opening at this end. When the plunger head **24** is then released, the end of adjustable mounting arm **22** will enter the bore of sleeve **14** and will be held in this position by the tension of spring **26** as shown in Fig. 2, and in broken line in Fig. 4. It will be noted that in this position, both mounting arms **20** and **22** are on a parallel plane with each other and with the strap-retaining loop **17**, and form a non-continuous loop extending through the bore of sleeve **14** and swivelly securing swivel element **12** to mounting member **11**.

To detach the swivel element **12** from the mounting member **11**, it is only necessary to depress the plunger head **24**, an operation which can be easily performed with one hand. The end of mounting arm **22** will thus be moved longitudinally entirely out of the bore of sleeve **14** and will drop of its own weight, as shown in Fig. 5, the straight end of rod **21** rotating within the bore of bearing **19**. The fixed mounting arm may then be withdrawn from sleeve **14** still requiring only a one-handed operation.

As shown in Fig. 1, a pair of swivel devices are attached to a gun or rifle, one on the fore-stock F and the other on the butt B. The gun strap or sling S is atached at each end to the strap retaining loops **17** of the respective swivel devices. The strap may be wholly or partially detached from the gun for adjustment or replacement by removing one or both of the swivel elements **12** from the mounting members **11** according to the method previously described.

It is to be noted that the tapered end portion **16***a* of rod **16** forms a flat surface at one end of bearing **19** which serves to prevent the lower bent portion of mounting arm **22** from jamming within the bore of bearing **19**, and in addition serves as a bearing surface for the rotation of said mounting arm **22**.

While a preferred embodiment of my invention has been shown and described herein, it is obvious that numerous changes, additions, and omissions may be made in the invention without departing from the spirit and scope thereof.

I claim:

1. A fastening device for pivotally attaching a gun sling to a tubular member mounted on a gun, said fastening device comprising a long and a short cylindrical metal rod bent into desired shapes, said long rod being bent to form an outer loop of a size to retain a gun-sling, an intermediate bearing, and an inner fixed mounting arm having a free end shaped to fit rotatably a substantial distance within said tubular member, said bearing being formed of a series of parallel spiral convolutions of said long rod, the inner surface of said spiral convolutions forming a through-and-through bore extending centrally and longitudinally through said bearing and having a diameter sufficient to house said short rod, said short rod having a terminal straight portion of sufficient length to fit through the bore of said bearing, the other end of said rod being bent upwardly and inwardly to reach and extend a substantial distance within one end of the tubular member when the fixed mounting arm is inserted within said member, and the straight end of said short rod is inserted through the bore of said bearing, and a compression spring within said bore arranged to urge the free end of straight end of said short rod exteriorly of said bearing.

2. A swivel device according to claim 1 in which the straight end of said short rod has a terminal finger piece which is normally urged by said compression spring to a position outside said bearing, in which position said finger piece is accessible for manual movement into the bore

of said bearing, whereby the bent end of said short rod is brought out of engagement with the tubular member.

3. A swivel device according to claim 1 in which the fixed mounting arm is formed from one free end of the long rod, the other free end of said long rod being tapered and being bent to follow the path of the spiral convolutions to form a planar end surface for the bearing formed by said spiral convolutions, said planar end surface abutting the lower portion of the bent end of the short rod.

4. A fastening device according to claim 1 in which the longitudinal bore of the bearing is provided with a portion of enlarged diameter at its end adjacent the fixed mounting arm, said enlarged portion serving as a housing for said spring.

5. A fastening device comprising a single bar of rigid material bent to form a lower retaining loop, an intermediate bearing rigid with said retaining loop, and an upper fixed mounting arm rigid with said bearing, said bearing being formed of an intermediate portion of said bar bent upon itself in spiral form and having a through-and-through bore, an adjustable mounting arm having a straight end slidably and rotatably mounted in said bearing and extending through said bore, said straight end having a terminal plunger head, and a compression spring located within said bore and normally urging said plunger head to a position in which it is located outside said bore, said spring normally urging said adjustable mounting arm to a holding position in which the free end thereof is proximate to and axially alined with the free end of said fixed mounting arm, said plunger being adapted to be brought to a release position in which the free end thereof is spaced from the free end of said fixed mounting arm, and in which the plunger may be rotated within said bore to bring the free end of said plunger out of axial alinement with the free end of said mounting arm.

6. A fastening device comprising a single bar of rigid material bent to form a lower retaining loop, an intermediate bearing rigid with said retaining loop, and an upper fixed mounting arm rigid with said bearing and said retaining loop, said fixed mounting arm having a bent free end, said bearing being formed of an intermediate portion of said bar bent upon itself in spiral form and having a through-and-through longitudinal bore, an adjustable mounting arm having a straight end slidably and rotatably extending through said bore, said straight end having a terminal plunger head, said adjustable mounting arm also having a bent free end which is shaped substantially like the bent free end of said fixed mounting arm, and spring means normally urging said plunger head to a position in which it is located outside said bore, said spring means also normally urging said adjustable mounting arm to a holding position in which the bent free end thereof is proximate to and axially alined with the free bent end of said mounting arm to form a split loop therewith, said plunger being adapted to be brought to a release position, against the tension of said spring means, in which the bent free end thereof is spaced a relatively greater distance from the bent free end of said fixed mounting arm, and in which the adjustable mounting arm may be rotated within said bore to bring the bent free end thereof out of axial alinement with the bent free end of said fixed mounting arm.

7. For use in pivotally attaching a sling to a sleeve mounted beneath a gun, a fastening element comprising a fixed portion and a movable arm, said fixed portion comprising a single continuous bar of rigid material bent to form a lower loop shaped to hold said sling, an intermediate bearing, and an upper fixed mounting arm, said intermediate bearing being composed of a series of closely-adjacent spiral convolutions bent from an intermediate portion of said bar to form a tube having a central through-and-through bore, said fixed mounting arm being bent from an end of said bar to form an upstanding leg which is integral with one end of said bearing and a lateral terminal leg which is spaced from and parallel to the axis of said bearing, said movable arm being of appreciably greater length than said bearing and extending slidably and rotatably through said bearing bore, the end of said movable arm which is spaced from said fixed mounting arm being bent to define a terminal leg which is parallel to the axis of said bearing and is spaced from said bearing axis the same distance as the terminal leg of said fixed mounting arm, said bearing having spring means which normally urges the other end of said movable arm to a position in which it projects exteriorly of said bearing and also urging the terminal end of said movable member toward the terminal end of said fixed member, said fastening element having a normal holding position in which said terminal ends are alined with each other and face each other and are located rotatably in opposite sides of said sleeve for pivotal movement of said element relative to said sleeve, said movable member being of sufficient length to permit the projecting end thereof to be manually depressed against tension of said spring means a sufficient distance to move the terminal end of said movable member outside of said sleeve to a position in which it is free to rotate out of the axial plane of said sleeve.

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