

March 21, 1944.

G. S. SELMAN

2,344,566

GUN MOUNTING

Filed Oct. 17, 1941

2 Sheets-Sheet 1

Fig. 2.

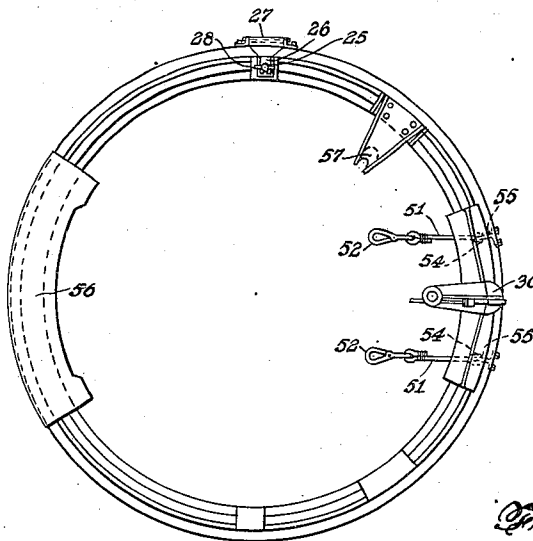


Fig. 1.

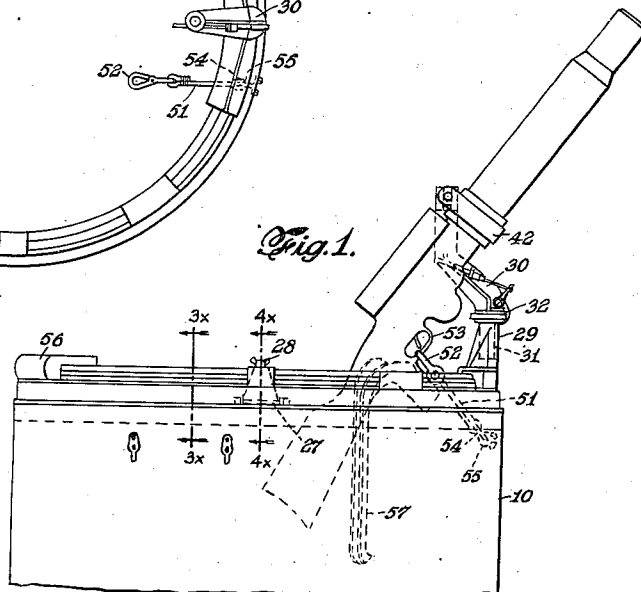


Fig. 3.

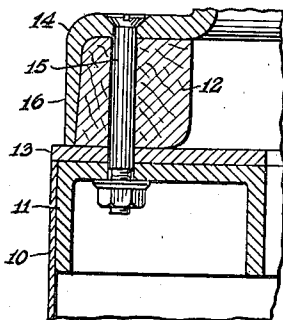
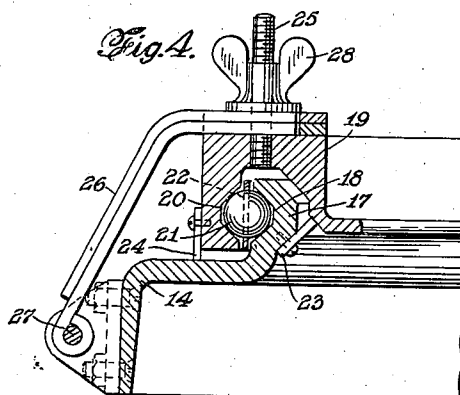


Fig. 4.



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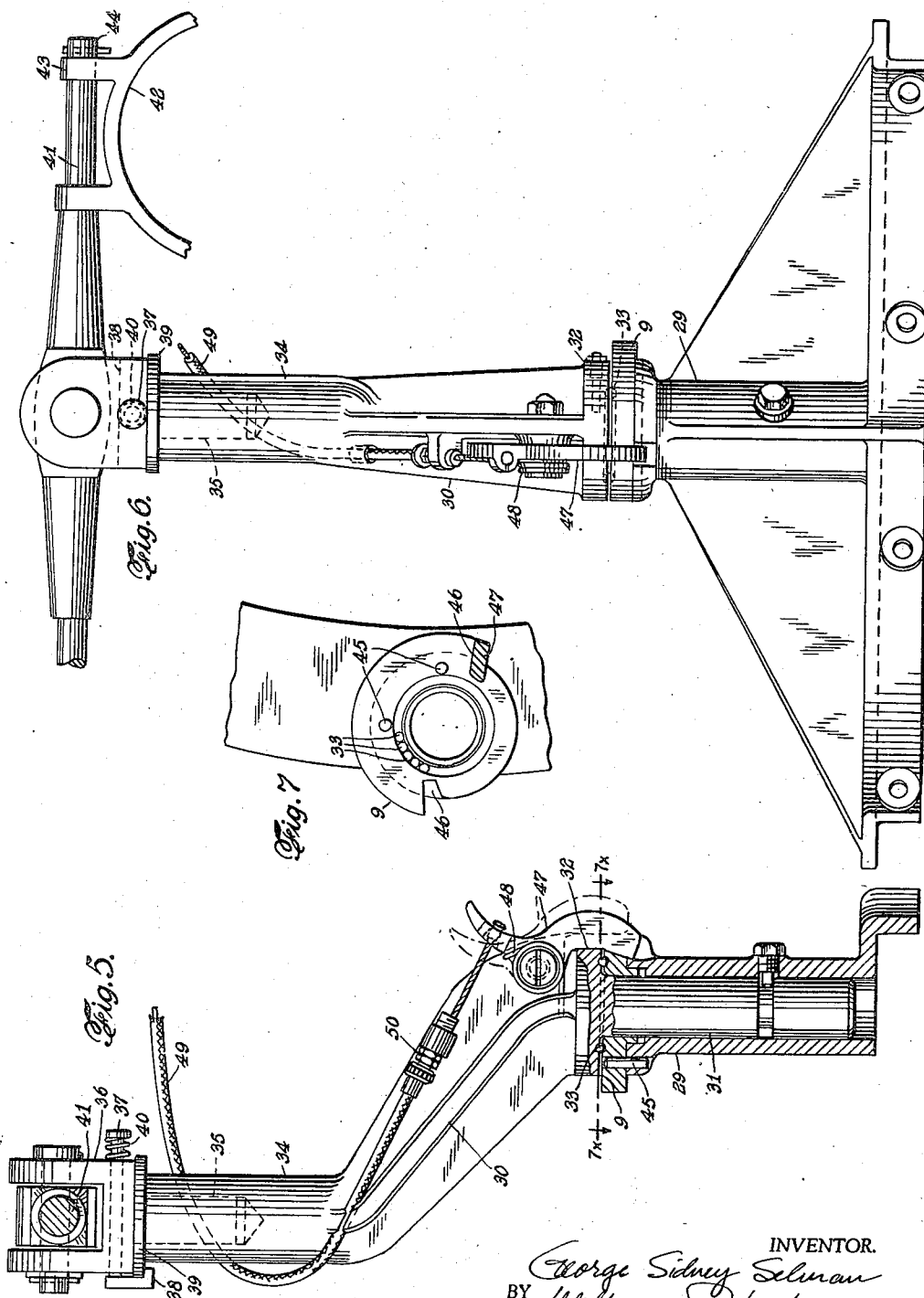
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Filed Oct. 17, 1941

2 Sheets-Sheet 2



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2,344,566

GUN MOUNTING

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Application October 17, 1941, Serial No. 415,376
In Great Britain April 11, 1940

1 Claim. (Cl. 89—37)

This invention concerns improvements in or relating to a mounting for light guns such as machine guns, which mounting is of the kind wherein the gun is mounted on a ring in such a manner that its angle of elevation may be adjusted, which ring is rotatably mounted on an annular support. In such an arrangement the gunner is stationed behind the gun within the annular support and it is usual to pivot the gun near the middle thereof so that it is substantially in neutral equilibrium. There is therefore a substantial length of the gun extending across the ring when the gun is at low elevation. With such an arrangement when selecting the size of the annular support, allowance must be made for the length of the gun and for the space to be occupied by the gunner behind it. The annular support is thus unnecessarily large for elevated positions of the gun. The object of the present invention is to provide a gun mounting which enables the size of the annular support to be reduced.

According to this invention a gun mounting of the kind referred to is characterized in that a gun holder is provided with a joint arranged to permit the adjustment of the angle of the elevation of the gun, and is also provided with an adjustable mounting on said rotatable ring arranged to permit movement of the joint from a position outside said ring to a position inside the ring and vice versa. It will be appreciated that with this arrangement when the gun is used at comparatively low elevations the holder may be adjusted so that the joint is disposed outside the annular support, thus enabling a smaller annular support to be employed, and yet providing sufficient room between the rear end of the gun and the end of the annular support. In order to enable the gun to be swung into a position for high elevation, the holder is adjusted so as to bring the joint within the annular support. Since in elevating the gun to this position the rear end of the gun is swung downwardly within the annular support, there is ample room between it and the edge of the support for the gunner.

The aforesaid adjustable mounting for the gun holder comprises an upright crank arm, the upper end of which is rotatably mounted in the gun holder and the lower end of which is rotatably secured on said ring.

The aforesaid adjustable mounting is preferably provided with means for locking the gun holder either inside or outside said ring. When such locking means are provided they may be

operated by a remote control preferably located on the butt of the gun.

The following is a description of one form of the gun mounting according to this invention for supporting two machine guns on a turret, reference being made to the accompanying drawings, in which:

Figure 1 is a side elevation of the gun mounting and the top part of the turret.

Figure 2 is a plan view of the arrangement shown in Figure 1 with the guns and associated parts removed;

Figure 3 is a fragmental section on the line 3x—3x of Figure 1 on an enlarged scale;

Figure 4 is a section on the line 4x—4x of Figure 1 on an enlarged scale.

Figure 5 is a side elevation of the crank arm mounting for the gun holder.

Figure 6 is a view looking from the right of Figure 5, and

Figure 7 is a plan view of the locking plate on the line 7x—7x of Figure 5.

The turret 10 is cylindrical in form and has secured within its upper edge a ring 11 of channel section as shown in Figure 3. A wood packing 12 is arranged to rest on an annular plate 13, the outside of said ring supporting a fixed slip-ring casting 14. The fixed slip-ring is provided on its outer edge with a downwardly-directed flange 16 which embraces the wood packing and meets the annular plate 13 at the top of the turret, and is provided on its inner edge with an upwardly-directed flange 17. As shown in Figure 4, the outer face of the upwardly-directed flange is formed with a V-shaped ball-race groove 18. The slip-ring is fixed against rotation by means of bolts 15 which pass through it, through the wood, the plate 13 and ring 11 at the top of the turret. A rotatably slip-ring 19 is associated with the first said ring and in cross-section is roughly in the shape of an inverted U. The upwardly extending flange 17 on the fixed slip-ring is arranged to be located within the channel formed by the U-shaped ring and a second V-shaped ball-race groove 20 is formed in that part of the U-shaped ring which is disposed opposite the first said ball-race groove. A number of balls 21 are located between the fixed and moving races and are spaced apart by a spacing member in the form of a perforated strip of metal 22 bent to circular form. A screwed plug (not shown) is provided in the outer race to enable the balls to be inserted. A number of grease nipples (not shown) are also arranged to extend through the outer portion of the U-shaped ring.

In order to render the bearings, thus formed, grease-proof and dirt-proof, a leather strip 23 is secured to the inner face of the upwardly-extending flange 17 of the fixed ring, the end of which strip is arranged to bear against the inner flange of the U-shaped ring 19. Similarly, a second leather strip 24 is secured to the outer flange of the U-shaped ring and is arranged to engage a part of the fixed ring 14. In order to prevent the U-shaped ring 19 from rotating when not in use, it is provided with an upwardly-extending stud 25 (see Figures 1, 2 and 4) which is arranged to be engaged by a slotted end of a clip 26 which is hinged at 27 to the outside of the fixed ring 14, which slotted end of the clip is clamped by a thumb-screw 28 on the said stud.

The gun holder is secured on one side of the rotatable ring and comprises an upright bearing member 29. A crank arm 30 is arranged with its lower end 31 in said bearing member and is provided with a flange 32 which is supported by ball bearings 33 on a flange 9 secured to the top of the bearing member (see Figure 5). The upper end 34 of the crank arm is provided with a socket in which is rotatably mounted the shank 35 of a forked member 36. The forked member is retained in the socket by a quick-release clip 37; a hooked end 38 of which is arranged to engage a collar 39 formed on the arm end 34. The clip is movable longitudinally against the action of the spring 40. Pivottally mounted in the forked member is a cross arm 41. A machine gun is mounted on each end of the cross arm 41 by means of a circular strap 42 having lugs 43 bored to engage and swing on a journal 44 formed on the cross arm 41. A flange 9 is secured by a sleeve joint and by dowel pins 45 to the top of the upright bearing 29 and is formed with two niches 46 (see Figure 7). A locking pawl 47 is arranged to extend through a slot in the flange 32 of the crank arm and is engageable with either of said

niches. The locking pawl is spring-pressed towards an engaging position by a spring 48. The niches are so disposed that the crank arm 30 can be locked either with its upper end lying above the space inside of the slip-ring or in a position outside said slip-ring. The aforesaid locking pawl is moved by means of an operating lever (not shown) mounted on the gun butt and connected by a flexible sheathed cable 49 to the pawl. A cable adjuster 50 is mounted on a part of the cranked arm.

When not in use, each gun may be retained in an elevated position by means of an elastic rope 51 having a hook 52 at one end to engage the trigger guard 53 and at the other other end a shackle 54 which engages a ring 55 secured to the inside of the turret. Secured to the rotatable ring opposite the gun mounting is a curved back-rest 56 for the gunner. Also secured to the ring, to the left of the gun mounting, is a handle 57 by which the ring may be rotated.

It is understood that the invention is not limited to the features herein specifically illustrated and described but can be carried out in other ways without departing from its spirit.

What is claimed is:

A mounting for light guns comprising a rotatable turret ring, an upright bearing member secured to said turret ring and provided with two diametrically located niches, a crank arm having its lower end rotatably supported in said bearing member, gun supporting means rotatably mounted on the upper end of said crank arm, and a manually releasable locking pawl pivottally mounted on said crank arm and cooperating with the niches in said upright bearing member, whereby said crank arm may be rotated in said bearing member and locked with its upper end lying above the space inside of the turret ring or in a position outside of said turret ring.

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