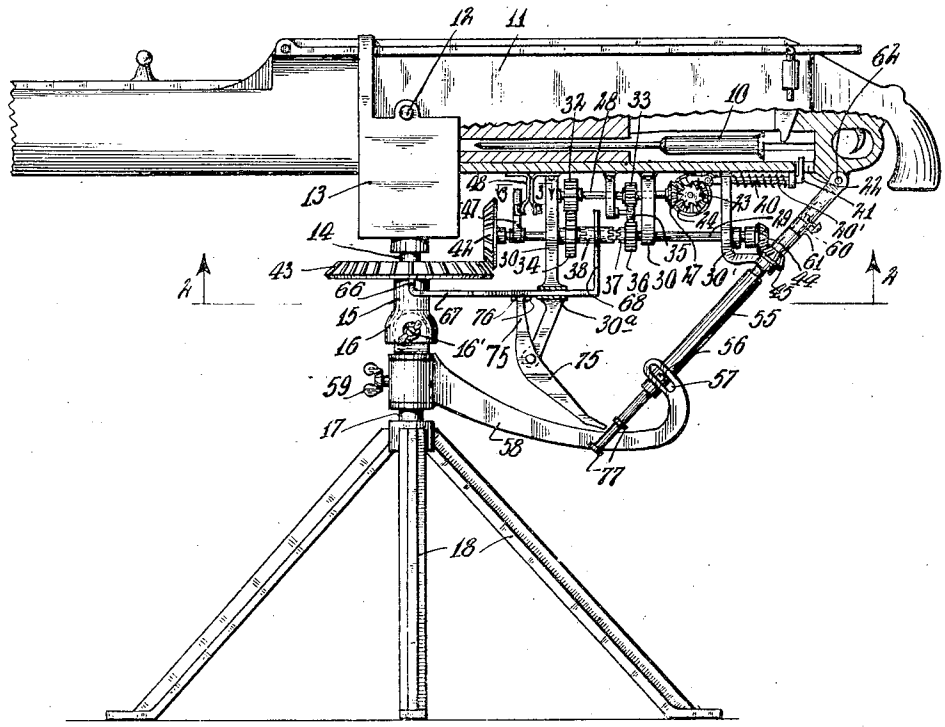
Jan. 29, 1924. 1,482,062

C. BABITS

AUTOMATICALLY SWINGING MACHINE GUN

Filed May 7, 1923

FIG. 1



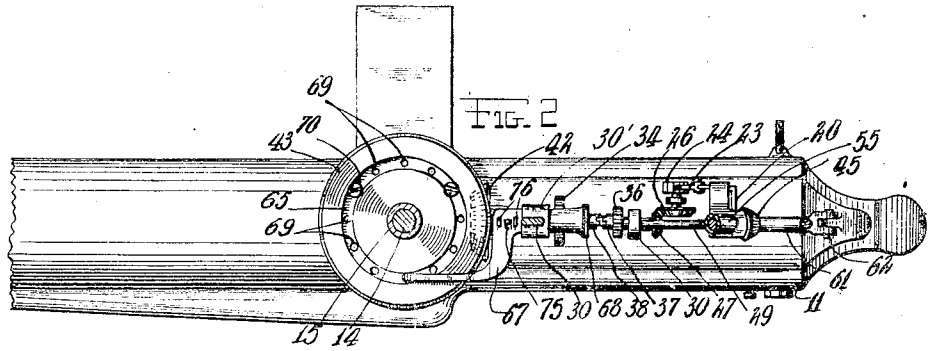


FIG. 2

FIG. 3

Inventor
Carl Babits

By Golten & Golechosky
Attorney

Patented Jan. 29, 1924. 1,482,062

UNITED STATES PATENT OFFICE.

CARL BABITS, OF CATASAUQUA, PENNSYLVANIA.

AUTOMATICALLY-SWINGING MACHINE GUN.

Application filed May 7, 1923. Serial No. 637,096.

To all whom it may concern:

Be it known that I, CARL BABITS, a citizen of Hungary, residing at Catasauqua, in the county of Lehigh and State of Pennsylvania, have invented certain new and useful Improvements in Automatically-Swinging Machine Guns, of which the following is a specification.

This invention relates to machine guns, having more particular reference to a device for automatically swinging the gun from side to side, or up and down, during the operation of the gun, to distribute the bullets discharged from the gun over a wide area.

The invention has for an object the provision of a novel means for this purpose, capable of ready adjustment to swing the gun either in a vertical or horizontal plane as may be desired.

For further comprehension of the invention, and of the objects and advantages thereof, reference will be had to the following description and accompanying drawings, and to the appended claims in which the various novel features of the invention are more particularly set forth.

Fig. 1 of the drawings is a side view, with parts in longitudinal section, of a machine gun having the invention embodied therein.

Fig. 2 is a horizontal sectional view, taken on the line 2—2 of Fig. 1.

Fig. 3 is a fragmentary horizontal sectional view taken on the line 3—3 of Fig. 1.

I have here shown my invention applied to a machine gun of the type illustrated in previous Patent 709,881. Of the firing mechanism of this gun I have considered it only necessary to indicate the firing pin 10 which is operated as set forth in the said patent and is reciprocable in the gun breech 11.

The gun is pivoted for vertical movement as at 12 in a saddle bracket 13 which is formed on the upper end of a vertical stem 14 seating rotatably in a socket in a head 15 having a knuckle joint connection 16 at its lower end with the upper end of a post 17 which may be rigidly supported on a stand 18. The pivot element of the joint 16 is a screw 16′ which may be tightened to hold the part 15 rigid. Swinging of the gun as above referred to is effected by mechanism operated by the firing pin 10. As here shown a bolt 20 is slidable in suitable guide lugs under the breech casing and has at its rear end an upturned finger 21 projecting through a slot 22 in the breech casing behind the firing pin to be engaged by the latter as it finishes its rearward movement, the bolt being urged forwardly by an expansion spring 20′. The front end of this bolt has hinged thereto the spring pressed pawl 23 which engages a ratchet wheel 24 fixed on a transverse stub shaft 25 suitably supported by and under the breech casing and having thereon a bevel gear 26 meshing with a like gear 27 on the end of a longitudinal shaft 28. Below this shaft extends a second longitudinal shaft 29 these shafts 28 and 29 being supported in bearing elements 30 depending from the breech casing.

Upon the shaft 28 are fixed a pair of gears 32 and 33, the former of which meshes directly with a gear 34 on the shaft 29, while the latter meshes with an idler 35 which meshes in turn with a second gear 36 on the shaft 29. These gears 34 and 36 are loose on shaft 29 and are formed with clutch faces such as 37 adapted to be engaged individually by a clutch sleeve 38 feathered on the shaft. Upon the front end of shaft 29 is a bevel pinion 42 meshing at certain times with a bevel gear 43 fixed on the head 15. On the rear end of this shaft is a bevel gear 44 adapted to mesh at certain times with a like gear 45 on a screw shaft 46 to be presently further referred to. The shaft 29 is of such length that the pinion 42 and gear 43 do not mesh when the gears 44 and 45 do so. The shaft is moved longitudinally to bring the desired pairs of gears into mesh by means of an arm 47 hinged thereon and is held in selected position by engagement of said arm with either of a pair of springs 48 depending from the breech casing and having ears 49 formed thereon to hold the arm against displacement therefrom, and finger pieces 50 whereby they may be released from said arm. The gear 45 is rotatably held in an extension 30′ from one of the bearing elements 30.

When pinion 42 is meshing with gear 43 the parts are arranged to swing the gun horizontally, and when gear 45 meshes with gear 46 the parts are arranged to swing the gun vertically. The screw shaft has an upward rearward inclination and is threaded through a sleeve 55 having a flattened lower end provided with a pair of projecting pins such as 56 which engage in slots such as 57 formed in the forked ends of a bracket arm 58 mounted to rotate on the post 17, and

which may be locked thereto by a set screw 59, the slots 57 extending transversely to the axis of the sleeve. The upper end of the screw shaft has a swivel connection as indicated at 60 with the lower end of a short rod 61 hinged at its upper end as at 62 to the rear end of the breech casing.

To shift the clutch sleeve 38 back and forth on the shaft 29, and so cause the gun to oscillate, a circular groove 65 is formed in the underside of the gear 43 and is adapted to have engaged therein the upturned end 66 of a slide bar 67 guided in an extension 30^a from one of the brackets 30, and whose rear end is upturned as at 68 and engages in a well known manner the clutch sleeve 38. In the bottom wall of the groove 65 are formed a number of threaded sockets 69 into selected ones of which a pair of screws 70 may be inserted to stop member which engage the bar end 66.

To cause the oscillation when the gun is arranged to swing vertically I fulcrum on the extension 30^a a bell crank lever 75 one end of which engages between a pair of lugs 76 on the bottom of the bar 67 and the other between a pair of suitably spaced flanges 77 on the lower end of the screw shaft 46.

In the operation of my improved device, as the firing pin 10 moves back after the firing of each bullet, it engages the lug 21 on the bolt 20 and moves the latter backward, causing pawl 23 to rotate ratchet wheel 24 on one tooth, and in consequence imparting a rotative movement to the shaft 28. As shaft 28 rotates it causes the gears 34 and 36 on the shaft 29 to also rotate, and to rotate shaft 29 in such direction as is determined by the engagement of the clutch sleeve 38 with one of the said gears. The rotation of shaft 29 will cause the gun to swing, on the stem 14 as a pivot, until the bar element 66 is engaged by one of the screws 70, when the clutch sleeve 38 will be shifted and the direction of movement of the gun reversed.

When the gun is to swing vertically, the shaft 29 is moved longitudinally to free pinion 42 from the gear 43, and engage the gear 45 with the gear 46, the screw 59 being tightened with the gun pointing in the desired direction. The reciprocation of the firing pin will cause the gear 45 to be rotated which will raise or lower the screw shaft 46 and so tilt the rear end of the gun. Reversal of movement is effected by engagement of the flanges 77 on the screw shaft with the bell crank lever 75.

Having thus described my invention what I claim as new and desire to protect by Letters Patent of the United States is as follows:

1. In a machine gun, a gun proper, a reciprocable firing pin therein, a support therefor, and means controlled by the said firing pin for oscillating said gun on said support, said means being adjustable to cause vertical or horizontal oscillation of the gun as may be desired, and including a shaft adapted by longitudinal shifting movement to cause selective operation of the respective oscillating means.

2. In a machine gun, a gun proper, a support on which said gun proper is tiltably mounted, a firing pin in said gun proper, a shaft carried by said gun proper and adapted for rotation by said firing pin, an arm on said support, an internally threaded sleeve for which said arm forms an abutment, a screw shaft threaded through said sleeve and pivotally connected at its upper end to the rear end of the gun proper, and meshing gears on said first shaft and said screw shaft.

3. In a machine gun, a gun proper, a support on which said gun proper is tiltably mounted, a firing pin in said gun proper, a shaft carried by said gun proper and adapted for rotation by said firing pin, an arm on said support, an internally threaded sleeve for which said arm forms an abutment, a screw shaft threaded through said sleeve and pivotally connected at its upper end to the rear end of the gun proper, and meshing gears on said first shaft and said screw shaft, and means for automatically reversing the direction of rotation of said screw shaft.

In testimony whereof I have affixed my signature.

CARL BABITS