July 4, 1933. F. E. MILLER 1,916,680

TOY MACHINE GUN

Filed Aug. 23, 1932

FIG. 1

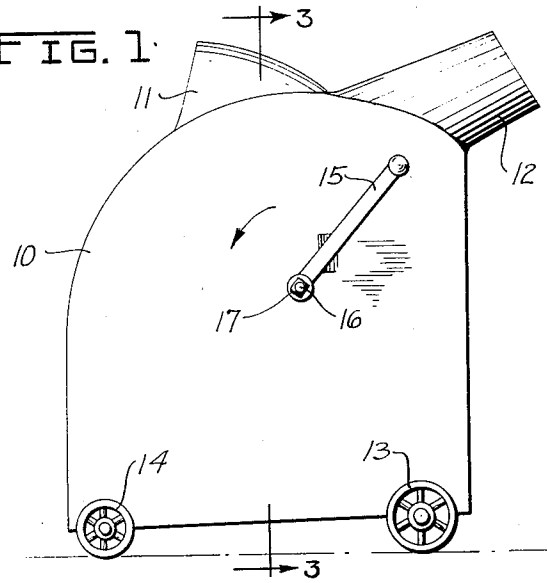


FIG. 2

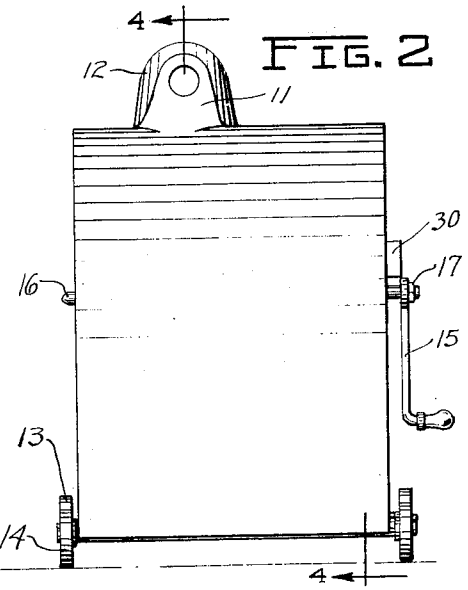


FIG. 4

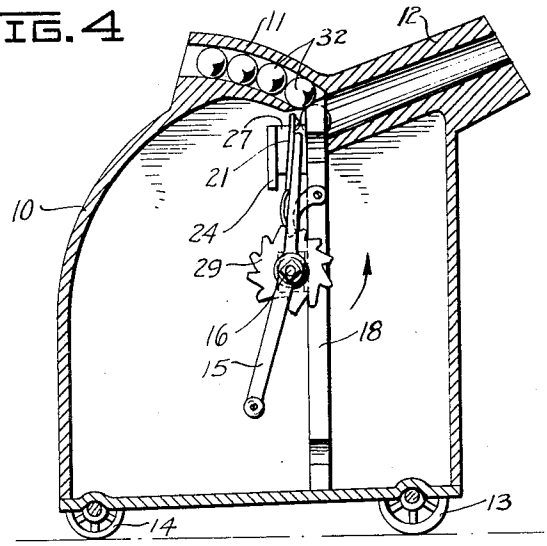


FIG. 3

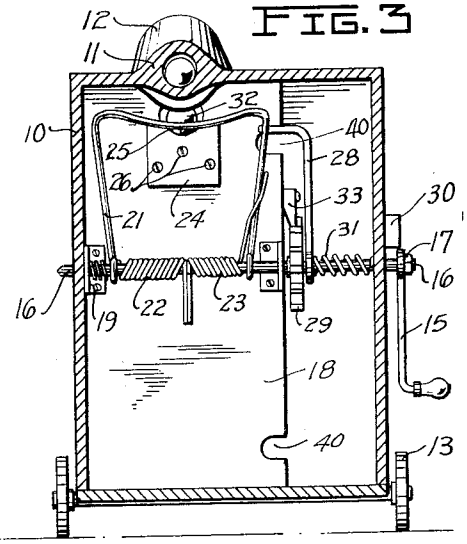
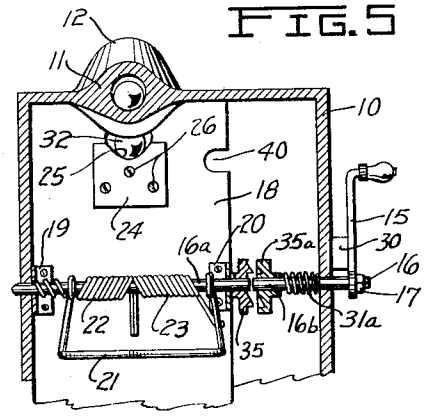


FIG. 5



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UNITED STATES PATENT OFFICE

FREDERICK E. MILLER, OF CLEVELAND HEIGHTS, OHIO

TOY MACHINE-GUN

Application filed August 23, 1932. Serial No. 630,043.

My invention relates to toy guns, and particularly to a toy of the machine gun type which is operated mechanically to shoot a small ball of a soft or resilient material.

One object is to make a novel toy that will be simple in construction and practical in operation at a minimum cost.

Another object is to provide a construction whereby the balls may be fed continuously to the gun.

Other objects and advantages may be noted from the following specification and the accompanying illustrations, in which

Figure 1 is a side elevation of the invention; Fig. 2 is a rear elevation of the invention; Fig. 3 is a section taken on lines 3—3 of Fig. 1; Fig. 4 is a section taken on lines 4—4 of Fig. 2; Fig. 5 is a fragmentary section of a modification showing a clutch device replacing the dog and ratchet shown in Figs. 3 and 4.

Referring to the drawing, the carriage or casing 10 with a ball feed magazine 11 and gun or cannon barrel 12 is mounted on front and rear wheels 13. An operating crank 15 mounted outside of the carriage 10 on a shaft 16 is held in position by nut 17, and said shaft projects through both walls of said carriage 10.

An internal supporting wall 18 is attached by an angle 19 to one side wall of the carriage 10, and a second angle 20 is also attached to said supporting wall 18, and the shaft 16 extends through apertures in both angles 19 and 20, which act as bearings.

A spring hammer or striker 21, in the form of a wire yoke, is mounted on shaft 16 and actuated by coil springs 22 and 23, spring 22 being coiled around the shaft 16 at one end, the opposite end, which is toward the middle of the wall 18, extends downward as does the similar end of coil spring 23, the opposite end extending upwardly and bearing against the hammer 21.

A plate 24 grooved at 25 is attached by bolts 26 through a bracket 27 to the supporting wall 18. A trigger or lever 28 is secured to the shaft 16, to revolve therewith, and the free end of this trigger is bent to normally engage behind the spring hammer 21, as shown in Fig. 3, being normally held to such engagement by the spring 31 coiled around the shaft 16. The shaft also carries a ratchet 29 adapted to be engaged by a detent 33. Secured upon the outer wall of the casing is the cam 30, in position to be wiped over by the crank 15 as it is turned, and when the crank wipes over the cam the shaft 16 and trigger 28 are shifted outwardly until the trigger releases the hammer.

In operation, the balls are fed into the magazine 11 and the foremost ball rests in the bracket 27 at the breech of the barrel 12. Then by turning the handle 15 in counter-clockwise direction the hammer 21 is forced back by the trigger 28 against the tension of the spring 23 until the crank 15 wipes over the cam 30. This releases the trigger from engagement with the spring which then snaps forwardly and strikes the ball and discharges the same through the barrel. The ratchet 29 and detent 33 permit the action referred to but prevent backslip or reverse turn of the shaft. As the crank handle is turned the hammer is operated in succession against the balls as they feed down through the magazine. This gives an imitation of machine gun fire, and the operation may be repeated as long as the magazine is kept supplied with balls. As the trigger 28 revolves with the shaft it passes through notches 40 conveniently made in the edge of the partition 18.

In the form shown in Fig. 5, instead of the trigger and pawl and ratchet device, a clutch consisting of two members 35 and 35*a*, on the shaft 16, may be employed, the shaft 16 being made in two sections 16*a* and 16*b*, the member 35 being secured to one section and the member 35*a* to the other section, with the spring 31*a* tending to hold the clutch members in engagement. As the crank 15 is turned and wipes over the cam 30 it will shift the section 16*b* against the tension of the spring 31 to release the clutch and allow the hammer to snap against the ball under the influence of the springs 23.

The structure may be modified in various ways within the scope of the invention.

I claim:

1. In a toy gun, the combination of a casing

and a barrel, means to feed balls in succession to the breech of the barrel, a shaft extending across the casing, a spring hammer carried by the shaft, a crank handle on the outer end of the shaft, and means actuated by rotation of the shaft to successively cock and release the hammer, the hammer being arranged to strike the ball at the breech, the means to cock and release the hammer comprising a trigger arm rotatable with the shaft and normally engaging the hammer to cock the same, and means to shift the trigger and shaft to release such engagement.

2. In a toy gun, the combination of a hollow casing, a barrel mounted thereon, a magaranged to strike the ball at the breech, the barrel, a shaft extending across the casing, a spring hammer pivotally mounted in the casing and arranged to strike a ball at the breech, and means actuated by rotation of the shaft to successively cock and release the hammer, said means including a clutch associated with the shaft and a cam acting to disengage the clutch successively.

3. The combination stated in claim 2, said means including a trigger engageable with the hammer to retract the same and disengageable therefrom to release the same, the trigger being carried by the shaft to rotate therewith, a crank on the shaft, to turn the same, and a cam mounted on the casing in the path of the crank and acting to shift the shaft endwise to disengage the trigger from the hammer.

In testimony whereof, I do affix my signature.

FREDERICK E. MILLER.