Aug. 22, 1944. J. A. SIGG 2,356,706

TOY GUN

Filed Dec. 11, 1943 3 Sheets-Sheet 1

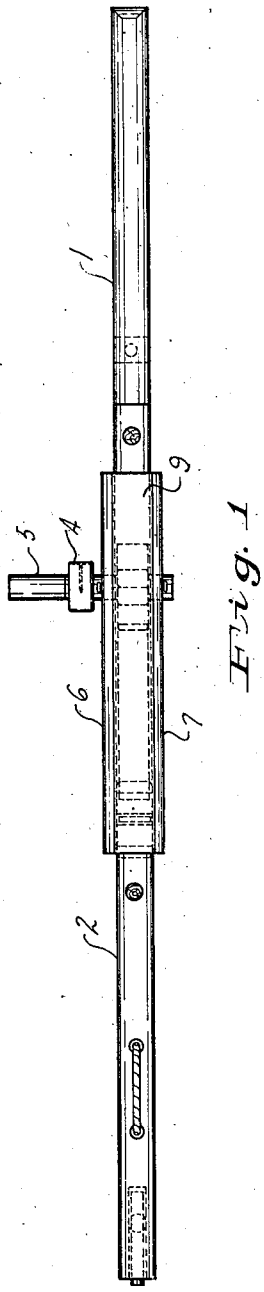


Fig. 1

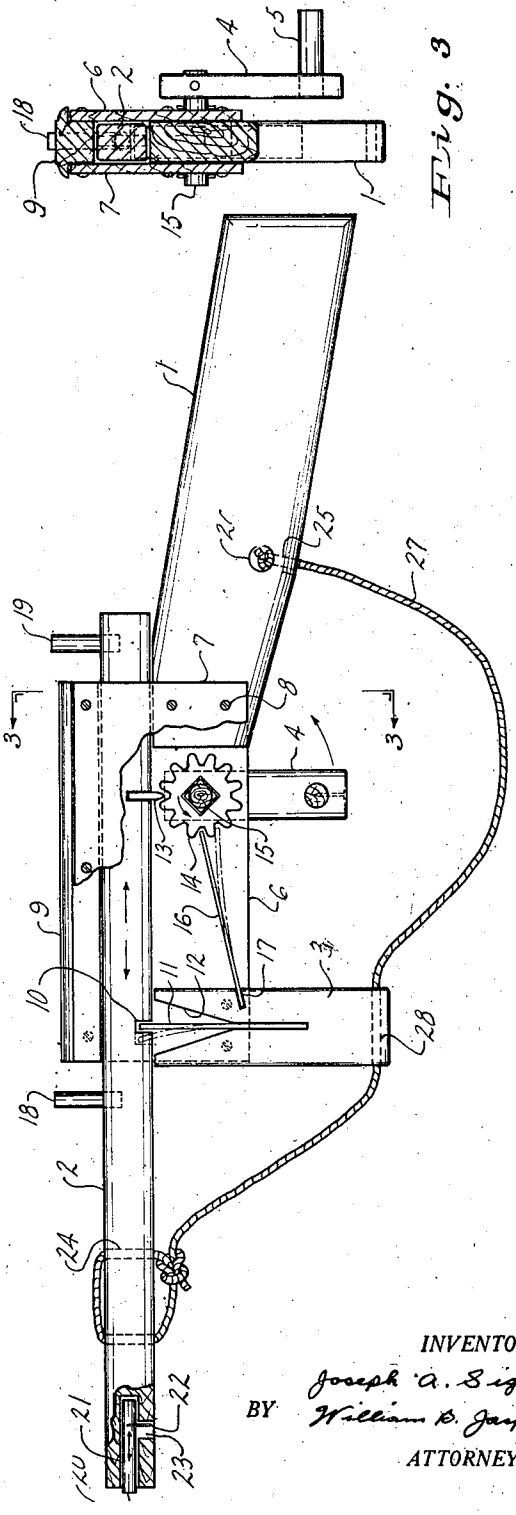


Fig. 2



Fig. 3

INVENTOR.
Joseph A. Sigg
BY William B. Jaspert
ATTORNEYS.

Aug. 22, 1944. J. A. SIGG 2,356,706

TOY GUN

Filed Dec. 11, 1943 3 Sheets-Sheet 2

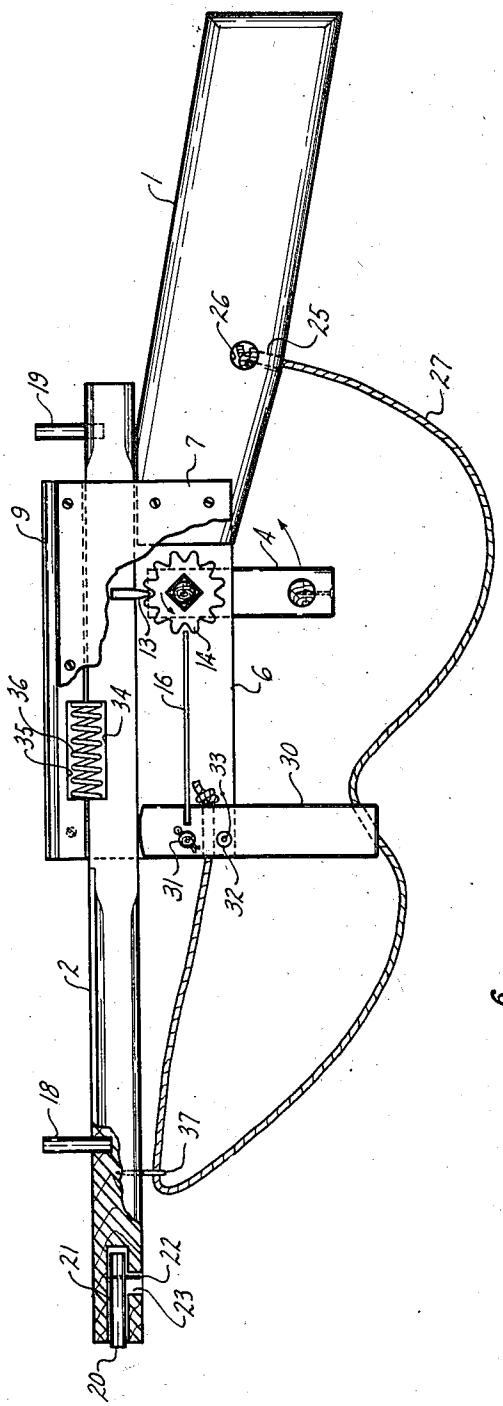



Fig. 4

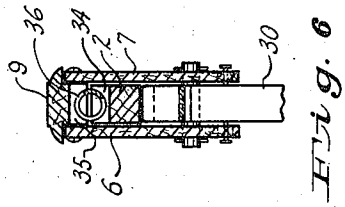



Fig. 6

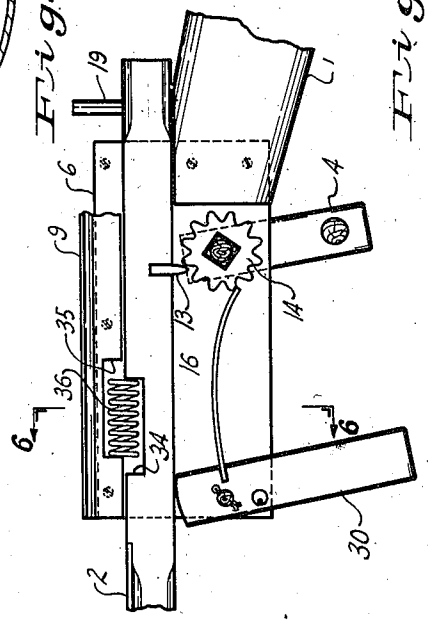



Fig. 5

INVENTOR.
Joseph A. Sigg
BY William B. Jaspert
ATTORNEYS.

Aug. 22, 1944. J. A. SIGG 2,356,706

TOY GUN

Filed Dec. 11, 1943 3 Sheets-Sheet 3

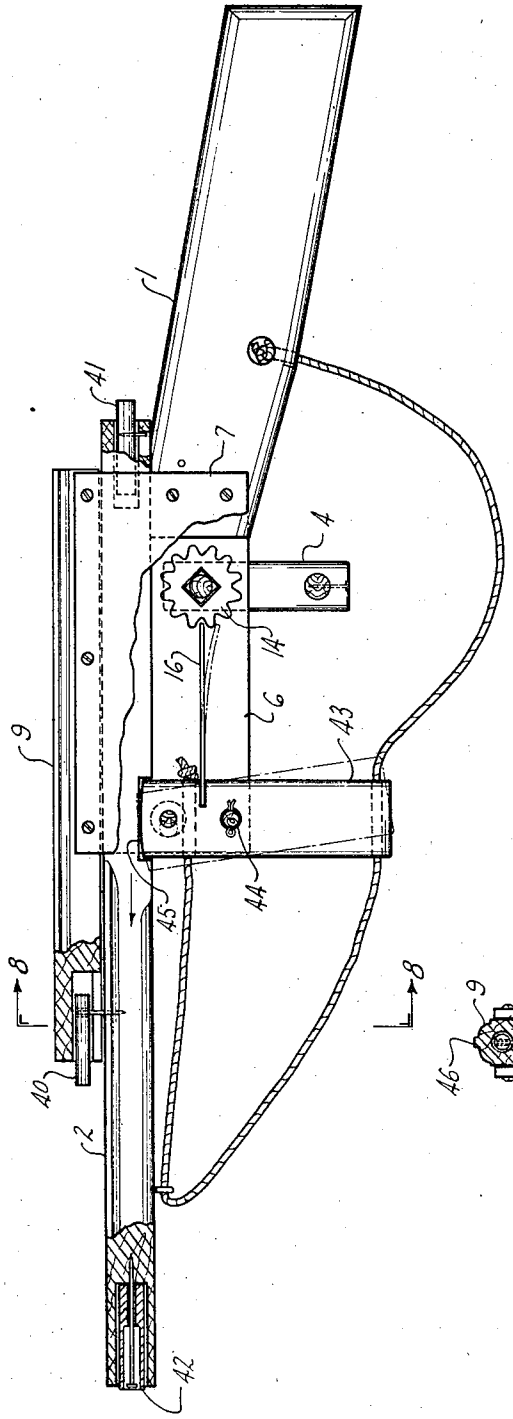



Fig. 7

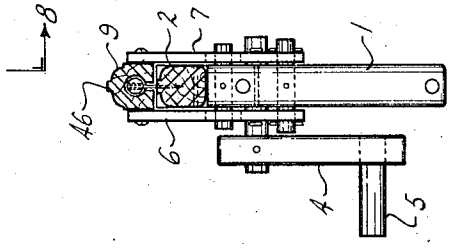



Fig. 8

INVENTOR.
Joseph A. Sigg
BY William B. Jaspert
ATTORNEYS.

Patented Aug. 22, 1944 2,356,706

# UNITED STATES PATENT OFFICE

2,356,706

## TOY GUN

Joseph A. Sigg, Pittsburgh, Pa.

Application December 11, 1943, Serial No. 513,903

14 Claims. (Cl. 46—192)

This invention relates to toy or play guns and it is among the objects of the invention to provide a toy gun simulating the sound and movement of a sub-machine gun.

It is a further object of the invention to provide a toy gun of the above designated character which shall be of simple and inexpensive construction and of a ruggedness that will permit of long use without great wear or breakage of the operating parts.

The invention will become more apparent from a consideration of the accompanying drawings constituting a part hereof in which like reference characters designate like parts and in which,

Fig. 1 is a top plan view of a toy gun embodying the principles of this invention;

Fig. 2, a side elevational view with the cover plate partially cut away to illustrate the working mechanism;

Fig. 3, a cross-sectional view taken along the line 3—3 of Fig. 2;

Fig. 4, a side elevational view with the cover plate partially cut away of a modified frame of toy gun;

Fig. 5, a partial side elevational view illustrating the functional characteristics of the operating mechanism;

Fig. 6, a cross-sectional view taken along the line 6—6 of Fig. 5;

Fig. 7, a side elevational view with the cover plate partially cut away of still another form of the toy gun, and

Fig. 8, a sectional elevational view taken along the line 8—8, Fig. 7.

With reference to the guns shown in Figs. 1 to 3 of the drawings, the numeral 1 designates the stock, 2 the barrel, 3 the grip and 4 the crank, the latter having a handle 5 for turning the crank. Side plates 6 and 7 are secured to the stock 1 and the grip 3 by screws 8, a top piece 9 spanning the side plates to form a guide within which the barrel is slidable. The barrel is slotted at 10 to receive a leaf spring of wood or other suitable material 11 which is fastened in a crotch 12 of the grip 3. The barrel 2 is further provided with a pin or pawl 13 for engaging the teeth 14 of a ratchet or gear wheel which is mounted on a shaft 15 that is rotated by the crank 4. A paddle 16 is fastened in slot 7 of the grip 3 and extends to the ratchet wheel 14 to interact with the teeth thereof as shown.

Front and rear gun sights 18 and 19 are provided in the barrel as shown and plug 20 is mounted for oscillating movement in the muzzle 21 of the barrel, the plug 20 having a pin 22 movable in a slot 23. Barrel 2 is provided with openings 24 and the stock 1 with an opening 25, the latter leading to a drill hole 26 for mounting a sling or rope 27 which extends through a drill hole 28 in the grip 3.

The operation of the gun shown in Figs. 1 to 3 is briefly as follows. By turning crank handle 5 the ratchet wheel 14 interacting with pawl 13 and paddle 16 subjects barrel 2 to oscillating movement simulating the recoil of a sub-machine gun, the spring blade 11 constituting a spring which returns the barrel 2 to maintain the pin 13 in cooperative engagement with the ratchet wheel 14. While the barrel is thus subjected to oscillatory movement the paddle 16 makes a slapping sound against the teeth of the wheel 14 similar to that of the well-known ratchet rattle commonly used at carnivals. By operating crank 4 at more or less speed, the sound of the paddle 16 striking the teeth may be varied in intensity to simulate the staccato of the machine gun. While the barrel 2 is subjected to oscillating movement, the plug 20 in the nozzle will oscillate back and forth within the limits of the slot 23 and is colored to simulate fire spitting from the muzzle. At the same time the rope 27 is subjected to a dangling movement to accentuate the appearance of powerful recoil action of the gun.

In the form of gun shown in Figs. 4 to 6 inclusive of the drawings the stock and barrel construction is similar to that shown in Fig. 2, the gun differing mainly in the construction of the grip designated by the numeral 30 which is pivotally mounted at 31 to the side plates 6 and 7 for purposes to be hereinafter stated. The degree of pivotal movement being limited by the dimension of a circular recess 32 which co-acts with a stop pin 33. The sound paddle 16 is secured to the upper portion of the grip 30. The barrel 2 is provided with a transverse slot 34 and the cover member 9 is similarly provided with a slot 35. These slots when in register are adapted to receive a coil spring 36 which retains the pin 13 in cooperative relation to the teeth 14 of the ratchet wheel similar to the leaf spring 11 of the structure shown in Fig. 2. The rope or sling 27 is fastened in the stock in the same manner as in the device of Fig. 2, but is otherwise secured through an eye screw 37 fastened on the barrel 2 and to the grip 30 as shown.

The operation of the toy gun of Figs. 4 to 6 is briefly as follows. By holding the grip 30 vertically as shown in Fig. 4 and by turning the crank 4 the gun barrel is subjected to oscillating movement by means of the pin and ratchet movement and the action of the coil spring 36. The rattle paddle 16 is also contacted by the ratchet wheel 14 to produce the sound effect. By pulling on grip 30 as shown in Fig. 5 the spring in the paddle 16 is made stiffer thereby increasing the intensity of the sound produced by the rattling action of ratchet 14.

In the form of toy gun shown in Figs. 7 and 8 of the drawings the barrel 2 is subjected to oscillating movement to a lesser degree and a plu-

rality of plugs 40, 41 and 42 are provided which, due to the vibratory action set up by ratchet wheel 14 and paddle 16 are subject to oscillating movement to simulate recoil. The form of Fig. 7 is the less expensive device but functions to produce the desired sound effects and sufficient vibration to make it an interesting toy. The grip 43 is pivoted at 44 to the side plates 6 and 7 and is capable of moving the barrel somewhat by interacting with the slot 45 of the barrel when the paddle 16 is actuated by the ratchet 14. In Fig. 7 the top member 9 is provided with a sight 46 extending the full length of the barrel.

It will be evident from the foregoing description of my invention that toy guns made in accordance therewith may be relatively inexpensive in construction and operated in a manner to be very alluring to children playing at war games. Various parts of the gun may be differently colored by painting and most all of the parts may be made of wood with the exception of the coil spring used in the structure in Fig. 4.

Although several embodiments of the invention have been herein illustrated and described it will be evident to those skilled in the art that various modifications may be made in the details of construction without departing from the principles herein set forth.

I claim:

1. A toy gun comprising a stock and barrel the latter being mounted for sliding movement, a ratchet device, a pawl on the barrel for engaging the ratchet device and a hand crank for actuating said ratchet to subject the barrel to oscillating movement.

2. A toy gun comprising a stock and barrel the latter being mounted for sliding movement, a ratchet device, a pawl on the barrel for engaging the ratchet device, a hand crank for actuating said ratchet to subject the barrel to oscillating movement and a sound paddle mounted for engaging the teeth of the ratchet member.

3. In a toy gun a stock and barrel, a housing for said barrel, the latter being mounted for sliding movement therein, a ratchet wheel, a pawl mounted on the barrel for engaging the teeth of said wheel, a hand crank for the wheel to actuate the same to thereby subject the barrel to oscillatory movement and a grip extending beneath the barrel for holding one end of the gun.

4. In a toy gun a stock and barrel, a housing for said barrel, the latter being mounted for sliding movement therein, a ratchet wheel, a pawl mounted on the barrel for engaging the teeth of said wheel, a hand crank for the wheel to actuate the same to thereby subject the barrel to oscillatory movement and a grip extending beneath the barrel for holding one end of the gun, said grip having spring means engaging the gun barrel to maintain the pawl of the barrel in register with the ratchet wheel at all times during the operation thereof.

5. In a toy gun a stock and barrel, a housing for said barrel, the latter being mounted for sliding movement therein, a ratchet wheel, a pawl mounted on the barrel for engaging the teeth of said wheel, a hand crank for the wheel to actuate the same to thereby subject the barrel to oscillatory movement and a grip extending beneath the barrel for holding one end of the gun, said barrel and housing having a coil spring for maintaining the pawl of the barrel in operative alignment with the teeth of the ratchet wheel.

6. In a toy gun a stock, a housing for said stock and a barrel slidably mounted in the housing, a ratchet wheel and a pawl mounted in cooperative alignment, the pawl being mounted for movement with the barrel, spring means engaging the barrel for maintaining alignment of the pawl and ratchet, a grip for said gun having a sound paddle secured therein, the extended end of which is disposed in the teeth of the ratchet, said grip being pivotally mounted to vary the fulcrum of the sound paddle whereby to vary the sound emitted thereby.

7. In a toy gun described in claim 1 a movable plug disposed in the muzzle of the gun barrel said plug being subjected to relative reciprocatory movement when the gun barrel is reciprocated.

8. In a toy gun a stock, a barrel having a recess at the bottom thereof, a housing for said barrel, the latter being mounted for sliding movement in said housing, a ratchet wheel mounted in the housing having a crank for rotating the same, a grip pivotally mounted on the housing and extending into the recess of the gun barrel and a sound paddle mouned on the grip and extending into the path of the movement of the ratchet wheel teeth to be actuated thereby in its sound producing movements.

9. A toy gun as set forth in the next preceding claim in which opposite ends of the gun barrel and the gun sight are provided with sliding pin members which are adapted for oscillating movement.

10. In a toy gun, a stock, a barrel mounted for oscillatory movement thereon, crank operated means for actuating said barrel, and means actuated by said crank means for producing the staccato sound of a repeating gun.

11. In a toy gun, a support having a barrel slidably mounted thereon, a pawl and ratchet mechanism for actuating said barrel to oscillate the same, and means for maintaining said pawl in cooperative alignment with the teeth of the ratchet.

12. In a toy gun, a support having a barrel slidably mounted thereon, a pawl and ratchet mechanism for actuating said barrel to oscillate the same and reslient means for maintaining said pawl in cooperative alignment with the teeth of the ratchet.

13. In a toy gun, a support having a barrel slidably mounted thereon, a pawl and ratchet mechanism for actuating said barrel to oscillate the same, means for maintaining said pawl in cooperative alignment with the teeth of the ratchet and vibratory sound producing means coacting with said ratchet to be operated threby.

14. In a toy gun, a support having a barrel slidably mounted thereon, a grip pivoted on said support having one end disposed in a notch of said barrel, a ratchet mechanism mounted on said support and a resilient blade secured to said grip and disposed in the path of movement of the ratchet teeth to oscillate the grip to subject the barrel to sliding movement and to produce a staccato sound.

JOSEPH A. SIGG.