June 14, 1927. 1,632,518

L. H. STRAYER

SOUNDING TOY FILM BURSTER

Filed Dec. 18, 1926 2 Sheets-Sheet 1

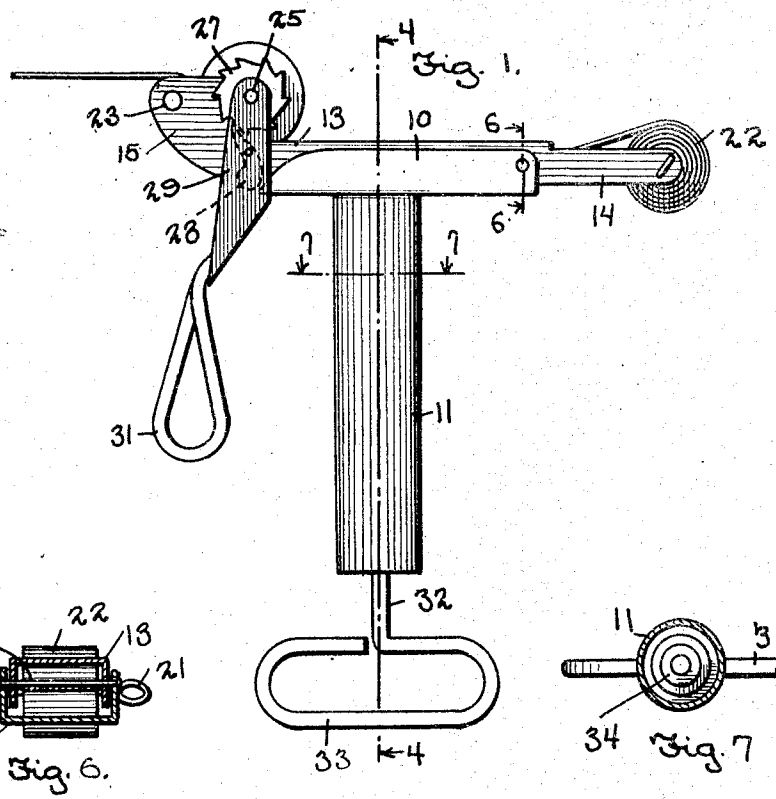

Fig. 1.

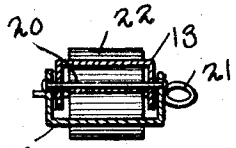

Fig. 6.

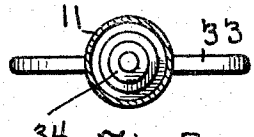

Fig. 7

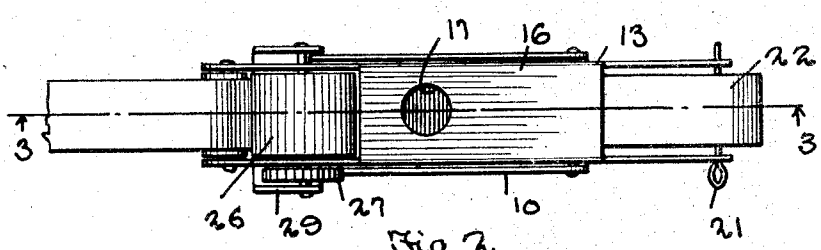

Fig. 2.

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SOUNDING TOY FILM BURSTER

Filed Dec. 18, 1926 2 Sheets-Sheet 2

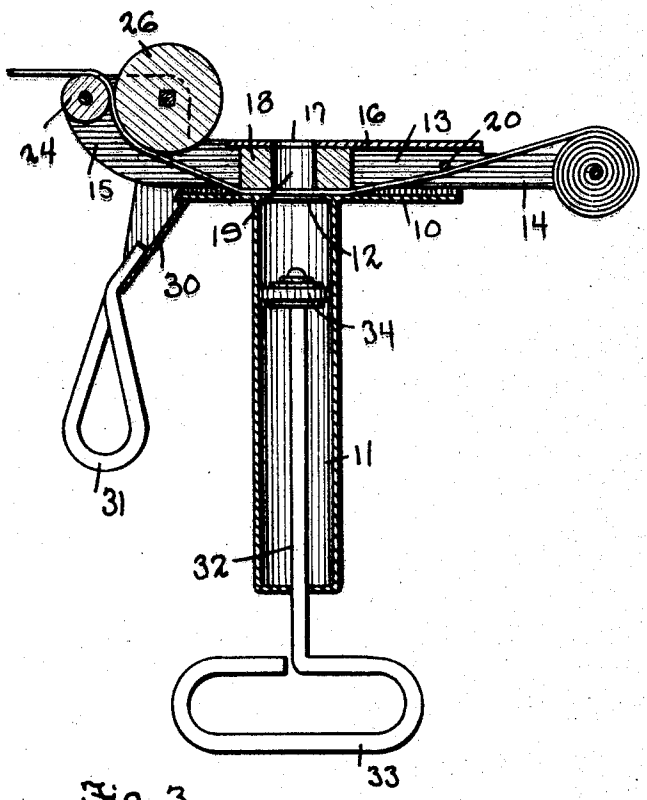

Fig. 3.

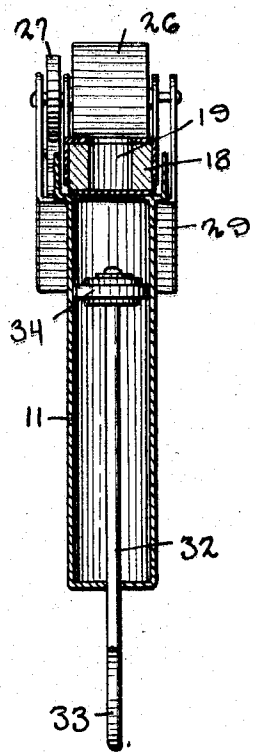

Fig. 4.

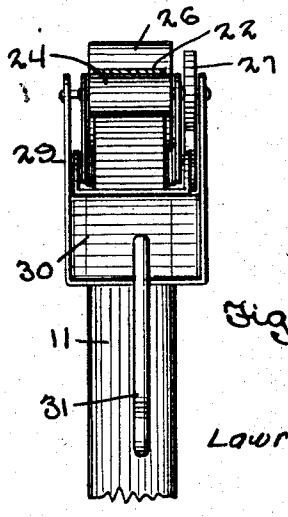

Fig. 5.

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Patented June 14, 1927. 1,632,518

UNITED STATES PATENT OFFICE.

LAWRENCE H. STRAYER, OF KENT, OHIO.

SOUNDING-TOY FILM BURSTER.

Application filed December 18, 1926. Serial No. 155,736.

The present invention relates to improvement in air guns and has for its primary object to provide a gun of this type designed to produce a loud report.

A further object of the invention is the provision of a gun of the above character which is capable of producing a series of rapid reports by repeated operation of the mechanism.

A further object of the invention is the provision of a noise producing gun operated by means of compressed air.

Still another object of the invention is the provision of a gun of the above character which is simple and durable of construction, efficient for the purpose intended and which can be manufactured at a relatively low cost.

Other objects and advantages of the invention will become apparent as the description progresses.

In the accompanying drawings forming a part of this specification, and in which like reference characters are employed to designate corresponding parts throughout the same:

Figure 1 is a side elevational view of a gun constructed in accordance with my invention,

Figure 2 is a top plan of the same,

Figure 3 is a longitudinal vertical sectional view taken on the line 3—3 of Figure 2.

Figure 4 is a transverse sectional view taken on the line 4—4 of Figure 1,

Figure 5 is a fragmentary front elevational view of the gun,

Figure 6 is a vertical transverse sectional view taken on the line 6—6 of Figure 1, and,

Figure 7 is a horizontal sectional view taken on the line 7—7 of Figure 1.

Referring to the drawings, wherein for the purpose of illustration is shown the preferred embodiment of my invention, the numeral 10 generally designates a carrier frame composed of a metallic plate bent in the form of a channel and provided with transversely aligned openings adjacent its rear end. Secured to or formed integral with the bottom plate of the carrier frame 10 is a vertical downwardly extending cylinder or compression tube 11 of durable metallic construction communicating with the carrier frame 10 by means of an opening 12 and having a comparatively central opening formed in its closed end.

Pivotally connected with the horizontal carrier frame 10 and normally disposed in a horizontal position thereon is a longitudinal magazine frame 13 embodying a pair of parallel longitudinal side plates 14 having upwardly projecting bearing plates 15 formed in their forward ends. A horizontal transverse plate is formed on the intermediate portion of the magazine frame as indicated at 16, this plate being formed with a circular opening 17 in vertical alignment with the opening 12 formed in the bottom of the carrier frame. A rectangular block 18 is rigidly secured to the bottom of the plate 16 adjacent its forward end, this block being formed with a vertical bore 19 arranged in alignment with the opening 17. It will be particularly noted, that the bore 19 and opening 17 are of slightly smaller diameter than the opening 12 of the carrier frame and arranged concentrically thereover. The magazine frame 13 is pivotally connected with the carrier frame 12 by means of a transverse pivot pin 20 extended through openings formed in the sides of the frames and formed with end heads to prevent displacement.

Extending through aligned openings formed in the rear ends of the side plates 14 is a removable roll supporting pin 21 adapted to rotatably support a roll of material, preferably a long comparatively narrow strip of paper 22. Rotatably mounted in the forward ends of the bearing plates 15 is a transverse shaft 23 on which is mounted a comparatively small guide roller 24. A second shaft 25 is mounted in transverse openings in the plate adjacent the rear portion thereof, the central portion of this shaft being of noncircular cross-section and supporting a comparatively large feed roller 26. From this construction, it is apparent that the rollers 24 and 26 are arranged in adjacent positions the purpose of which will become apparent as the description progresses.

Fixed on the outer end of the shaft 25 is a ratchet wheel 27 formed with peripheral ratchet teeth engageable with a pawl 28 pivotally mounted on the side of the magazine frame and normally engageable with ratchet teeth.

Snugly fitted on the extreme ends of the transverse shaft 25 and normally disposed in a downward position therefrom is a U-shaped bracket 29, formed with tapered side

arms connected with an angularly projecting transverse plate 30. Rigidly secured to the lower end of the bracket 29 and depending outwardly thereof is a handle 31 formed of a metallic rod bent in the form of a loop. This structure is arranged so that forward and upward swinging movement of the handle 31 and bracket 29 will rotate the feed roller 26 in a clockwise direction. Due to the engagement of the pawl 28 with the ratchet wheel during the return movement of the bracket 29 the roller will remain in a stationary position.

Slidably fitted in the opening formed in the lower end of the cylinder 11 and arranged for reciprocating movement in the cylinder is a longitudinal piston rod 32, the lower extremity projecting through the lower end of the cylinder and formed with an elongated transversely extending handle loop 33. Firmly secured upon the upper end of the piston rod 32 and snugly fitted within the cylinder 11 is a piston 34 designed to compress the air within the cylinder during the upward stroke of the piston.

In operation, a strip of paper of suitable thickness is rolled upon the pin 21, the free end of the strip being trained to extend in contact with the lower surface of the block 18 and between the rollers 24 and 26.

During the initial arrangement of the paper strip, the magazine frame is tilted at an upward angle to facilitate the feeding operation. The rollers 24 and 26 are arranged so as to firmly engage the paper strip therebetween, as shown to advantage in Figure 3. After the strip is arranged in proper position, the magazine frame is lowered to a horizontal position on the carrier frame and secured thereto by swinging the U-shaped bracket 29 to a downward position so that the transverse plate 30 of the bracket will engage the bottom plate of the carrier frame. In this position, the magazine frame will be tightly fastened on the carrier frame and the strip of material tightly compressed between the block 18 and the bottom transverse plate of the carrier frame.

The piston is then lowered to the bottom end of the cylinder and forced suddenly upward, compressing the air within the upper end of the cylinder until the compression is sufficient to puncture the feed strip. When the air is compressed to a suitable compression, the portion of the feed strip arranged in alignment with the bore 19 and opening 12 of the carrier frame will be punctured and produce a relatively loud report.

This operation may be repeated by swinging the bracket 29 in an upward arc so as to rotate the feed roller and simultaneously release the magazine frame. This movement of the bracket will rotate the feed roller and draw the strip through the frame. The bracket is then returned to its initial position to lock the same and compress an unused section of the strip between the block 18 and the carrier frame. It is thus apparent that a number of successive reports may be produced at short intervals, thus providing an air gun which may be employed as a toy or as a signal.

It is to be understood that the form of my invention herewith shown and described is to be taken as the referred example of the same, and that various changes as to the shape size and arrangement of parts may be resorted to without departing from the spirit of the invention or the scope of the subjoined claims.

Having thus described my invention, I claim:

1. A gun of the class described comprising a carrier frame having an opening formed in the bottom thereof, a cylinder secured to the bottom of the carrier frame and communicating with the opening, a piston arranged for reciprocating movement in the cylinder, a magazine frame pivotally mounted on the carrier frame, a block carried upon the magazine frame adapted to be adjusted above the cylinder and formed with transverse openings through the block, a pair of material actuating rollers rotatably supported on the magazine frame, a strip of material rotatably formed on one end of the magazine frame and fed through the said rollers, and a bracket adapted to actuate one of the rollers to intermediately feed the material through the frames.

2. A gun of the class described comprising a horizontal carrier frame having an opening formed in the bottom thereof, a cylinder secured to the bottom of the carrier frame and disposed at right angles thereto positioned about the opening, a piston mounted for reciprocating movement in the cylinder and adapted to compress air in the cylinder and transmit the same through the opening in the carrier frame, a magazine frame pivotally mounted on the carrier frame, having an opening in its upper portion, a block secured to the magazine frame, having a bore formed therethrough, adapted to align with the opeinng in the bottom of the carrier frame, a pair of feed actuating rollers rotatably mounted on the magazine frame, a strip of material mounted for movement through the frames and rollers and a bracket adapted to intermittently feed the strip of material through the frames at each operation of the gun.

3. An air gun comprising a horizontal carrier frame having an opening in the bottom thereof, a cylinder secured to the bottom of the carrier frame and extending vertically downward therefrom, a piston mounted for reciprocating movement in the cylinder and adapted to compress the air in the upper

end thereof, a magazine frame pivotally connected with the carrier frame and having an opening formed therein, a block secured to the magazine frame having a bore formed therethrough arranged in alignment with the opening formed in the carrier frame, a pair of feed rollers rotatably mounted in the forward end of the magazine frame, a strip of material rotatably mounted on one end of the magazine frame and disposed in contact with the lower edge of the block and extending through the rollers, and a bracket adapted to rotatably actuate one of the rollers to intermittently feed the strip of material through the frames after each report of the gun.

4. An air gun comprising a channel shaped carrier frame having an opening in the bottom thereof, a cylinder rigidly secured to the frame in communication with the opening and projecting downwardly therefrom, a piston mounted for reciprocating movement in the cylinder adapted to compress the air in the upper end of the cylinder, a longitudinal magazine frame pivotally mounted on the carrier frame, a transverse plate formed on the intermediate portion of the magazine frame provided with an opening adjacent its forward end, a block secured to the lower side of the transverse plate having a bore formed therethrough in alignment with the plate and in alignment with the carrier frame, a pair of feed rollers rotatably mounted on the forward portion of the magazine frame, a strip of material rotatably mounted in one end of the magazine frame and adapted to be fixed through the frame so as to align with the openings in the block and carrier frame and operable through the rollers, and a bracket adapted to intermittently actuate one of the feed rollers in one direction to feed the strip through the frame after each report of the gun.

5. An air gun comprising a carrier frame having an opening in its bottom, a compression cylinder secured to the carrier frame in alignment with the opening, a piston mounted for reciprocating movement in the cylinder adapted to compress the air in one end thereof, a magazine frame pivotally connected with the carrier frame, a block secured on the magazine frame provided with a bore extended therethrough adapted to extend in alignment with the opening in the carrier frame, a strip of material adapted to be fed through the frame between the block and the carrier and punctured by the air compression in the cylinder to produce a loud report, a pair of feed rollers mounted in the forward end of the magazine frame and disposed in adjacent positions to feed the strip of material through the same upon movement of the rollers, and a bracket operatively connected with one of the rollers, adapted to intermittently actuate one of the rollers in one direction to feed the material through the frame and also lock the frame in operative position.

In testimony whereof I affix my signature.

LAWRENCE H. STRAYER.