(No Model.) 2 Sheets—Sheet 1.

F. BURNS.

TOY ARM.

No. 560,570. Patented May 19, 1896.

Fig. 1.

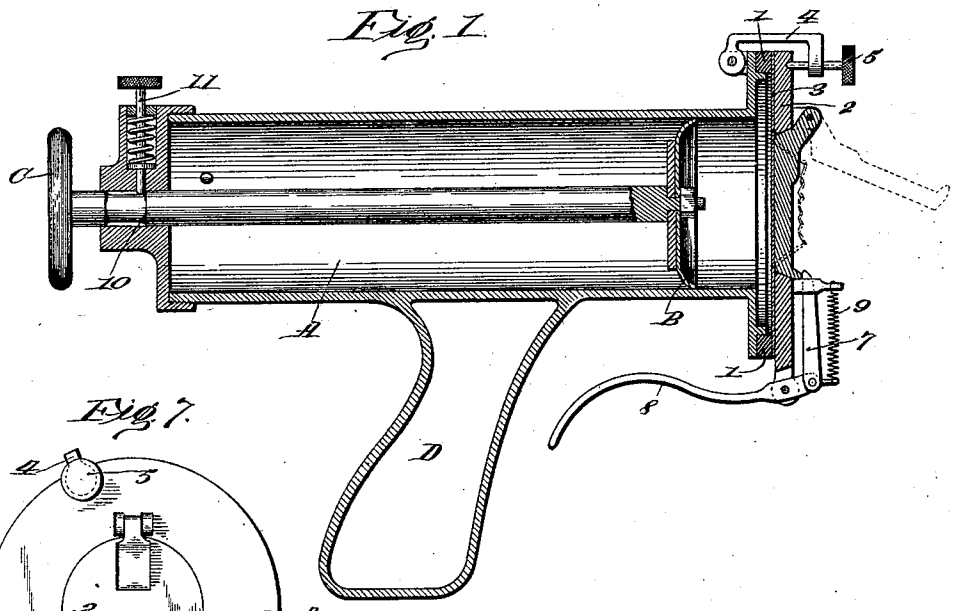


Fig. 7.

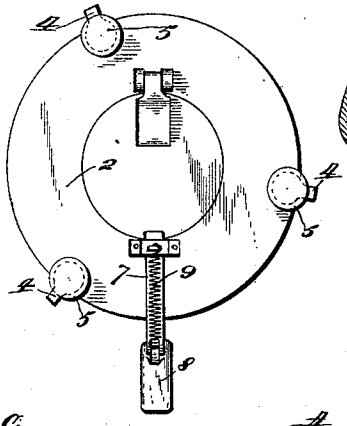
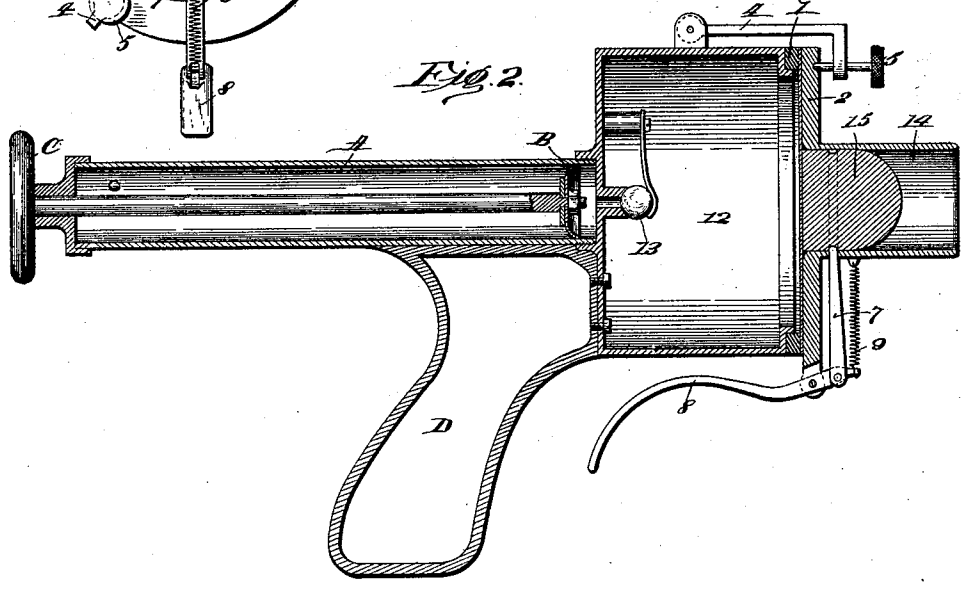


Fig. 2.



Witnesses
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Edwin L. Bradford

Inventor
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his Attorneys.

(No Model.) 2 Sheets—Sheet 2.

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Fig. 3.

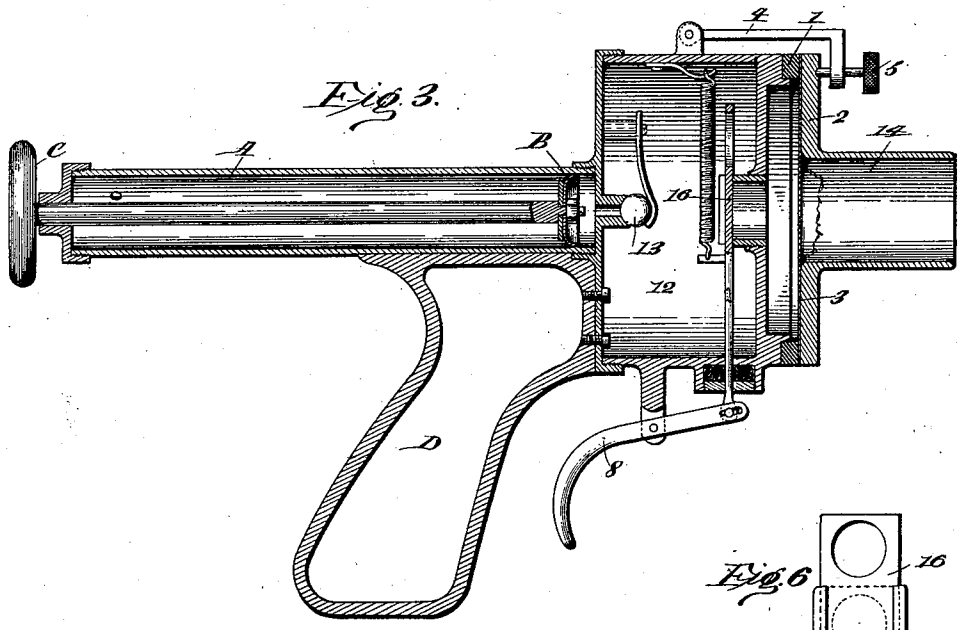


Fig. 6.

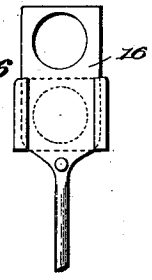


Fig. 4.

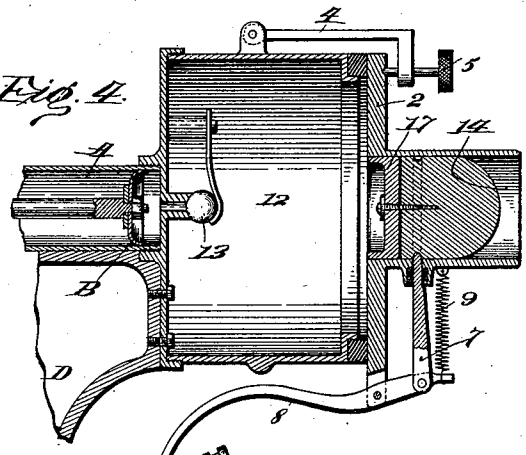
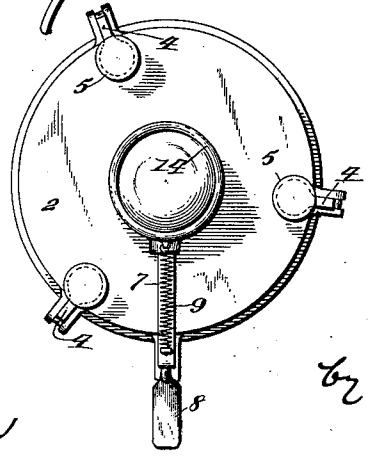


Fig. 5.



Witnesses
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UNITED STATES PATENT OFFICE.

FRANK BURNS, OF WESTFIELD, NEW YORK.

TOY ARM.

SPECIFICATION forming part of Letters Patent No. 560,570, dated May 19, 1896.

Application filed October 23, 1895. Serial No. 566,644. (No model.)

To all whom it may concern:

Be it known that I, FRANK BURNS, a citizen of the United States, residing at Westfield, Chautauqua county, New York, have invented certain new and useful Improvements in Toy Arms; and I do hereby declare that the following is a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to improvements in toy arms or devices for producing sounds in imitation of the explosion of cannon and other firearms.

It is proposed to make the arm in form to imitate the general appearance of a pistol, a shoulder-gun, or a cannon, although the outward appearance constitutes no part of the invention, the main object of which is to produce explosive sounds by harmless means and in an economical manner.

The invention consists in certain constructions and combinations hereinafter described and claimed.

In the drawings forming a part of this specification, Figures 1, 2, 3, and 4 are sections of different forms or applications of my invention. Fig. 5 is a front elevation of the cap-piece shown in Figs. 2 and 4. Fig. 6 is a detail of valve shown in Fig. 3, and Fig. 7 is an elevation of the cap-piece shown in Fig. 1.

In Figs. 1 to 4 an air compressor or pump is shown, consisting of cylinder A, piston B, and operating-handle C. In these figures I have shown a pistol grip or handle D connected with a pump-cylinder for conveniently holding the device at arm's-length to imitate the operation of pistol-shooting. Obviously a shoulder-piece or butt in imitation of a musket or rifle may be substituted for the pistol-grip and the device may be mounted on trucks in imitation of a piece of field-artillery. At the mouth or forward end of the cylinder shown in Fig. 1 I provide a seat for the gasket 1 and detachably connect with the cylinder a ring or a cap 2, having a hole or passage through it, as shown. The object of the ring or cap is to support a sheet of paper or other material 3 across the mouth of the cylinder. The ring is clamped or held against the paper and gasket by any suitable device. The means shown in this application consists of yokes 4 4, pivotally connected with the cylinder and set-screws 5 5, the yokes and screws constituting clamps to press the ring or cap against the interposed paper and hold it firmly in place and prevent leakage of air. In this form a sounding toy of some efficiency is produced. To operate the device so far described, the paper being held over the mouth of the cylinder and the piston withdrawn, the piston is forced rapidly forward through the cylinder. As in a pop-gun, the compressed air bursts the paper and a loud explosive sound is produced.

To augment the efficiency of the instrument and increase the sound, I provide a lid or cover 6 to sustain the paper until great pressure is accumulated in the cylinder and then suddenly release the support, whereupon a loud explosive report is produced. The means for holding and releasing the lid or cover consists of a movable stop 7, a trigger 8, and a spring 9.

Another way of operating the device shown in Fig. 1 is to omit the lid or leave it free, then compress the air to just within the limit of the strength of the paper, and then impart a sudden impulse, as by a blow, to the piston. This mode of operation is facilitated by providing a shoulder or stud 10 on the piston-rod and a stop or detent 11 to hold the piston in a forward position under tension, as shown in Fig. 1, when a blow on the handle C will cause the paper to burst suddenly.

In the form shown in Figs. 2, 3, and 4 I have provided an enlarged air-chamber 12, having a check-valve 13, and have also shown a tubular projection 14 in the nature of a pistol-barrel. By means of this gland or enlarged chamber a considerable volume of air may be compressed to any desired tension and then suddenly released to produce explosion and sound.

In Fig. 2 the means for supporting the paper consists of a plug 15, having an annular groove with which the movable stop 7 engages to lock it in position during the process of compressing the air. In this form and in the form of the invention shown in Figs. 3 and 4 the toy serves to imitate the sound produced by explosive compounds, and also serves to discharge wooden or other light projectiles in further imitation of a real firearm.

The form shown in Fig. 3 has the air compressor or pump, the gland or enlarged chamber, and a valve 16, the valve being between the gland and the mouth of the device to hold the compressed air within the gland and out of contact with the paper until released by trigger-operated connections, as shown.

Fig. 4 shows a way of using my device to some extent for amusement without employing a disk of paper. In this method of operation a light plug in the form of a projectile with a gasket 17 and groove is used and gives a report somewhat of the character of a pop-gun.

It is observed that the efficiency of my invention depends on the fact that the fabric or substance which stops or closes the mouth of the device is held in position with force and the fact that the stopper is suddenly released or gives way to permit the expansion of the air.

Having now described my invention, what I claim is—

1. In a toy arm or gun, the combination of a chamber adapted to be filled with compressed air, means for holding a sheet of fabric or other material over a mouth of said chamber, a cover or support to sustain the surface of the fabric, and mechanism for releasing the surface-support.

2. In a toy arm or gun, the combination of a chamber, an air-compressor discharging into said chamber, a check-valve to retain air in said chamber, means for holding a sheet of fabric or other material over the mouth of the chamber, a movable support for sustaining the paper opposite the mouth, and means for releasing the paper-support.

3. In a sounding toy, the combination of a chamber, means for holding compressed air in the chamber, means for holding a sheet of fabric or other material in front of the mouth of the chamber, and mechanism for releasing the compressed air, for producing sound.

4. In a sounding toy, the combination of a chamber, an air-compressor discharging into said chamber, means for holding the compressed air in the chamber, means for holding a sheet of fabric or other material in front of the mouth of the chamber, and mechanism for releasing the compressed air, for producing sound.

5. In a sounding toy, the combination of a chamber, an air-compressor discharging into said chamber, means to hold the compressed air in the chamber and means for holding a sheet of fabric or other material in front of the mouth of the chamber, for producing sound.

In testimony whereof I affix my signature in the presence of two witnesses.

FRANK BURNS.

Witnesses:
H. M. STERLING,
V. D. STOCKBRIDGE.