C. M. CRANDALL.

TOY-CANNONS.

No. 187,104. Patented Feb. 6, 1877.

Fig: 1.

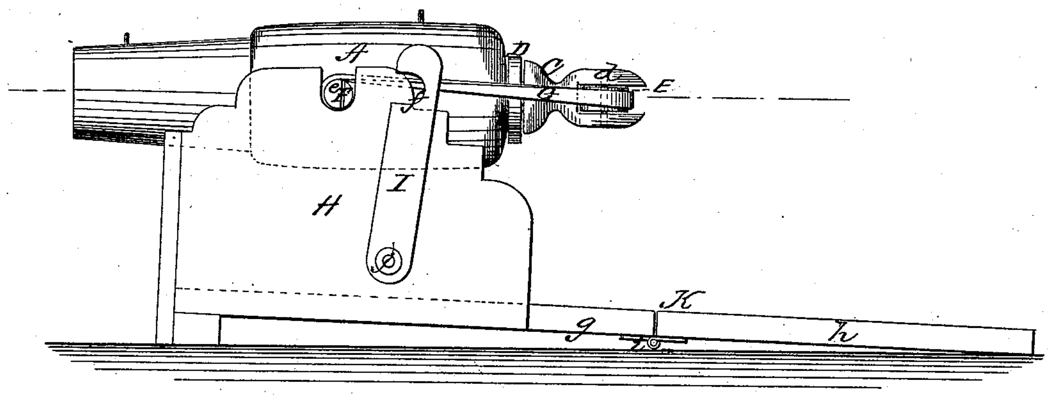


Fig: 2.

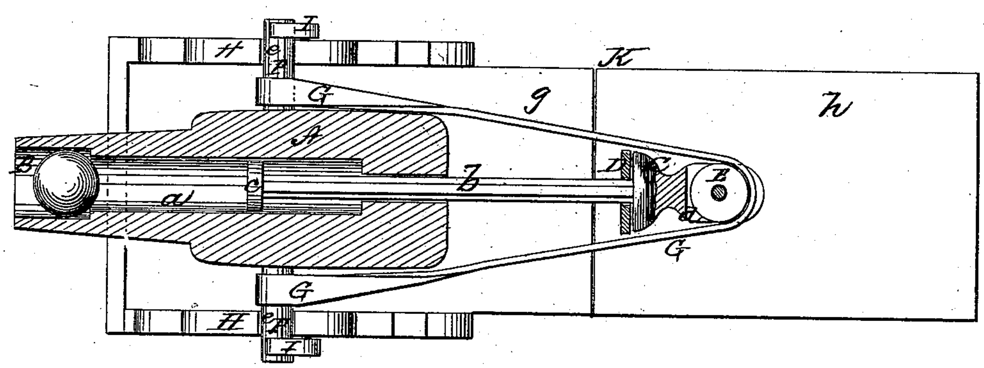
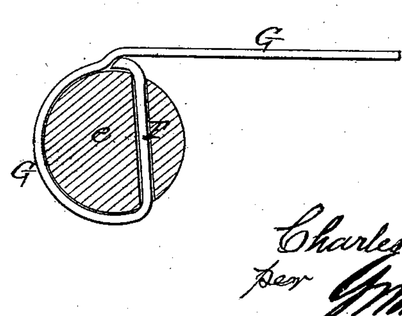


Fig: 3.



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UNITED STATES PATENT OFFICE.

CHARLES M. CRANDALL, OF MONTROSE, PENNSYLVANIA, ASSIGNOR TO C. M. CRANDALL & CO., OF SAME PLACE.

IMPROVEMENT IN TOY CANNONS.

Specification forming part of Letters Patent No. **187,104**, dated February 6, 1877; application filed December 15, 1876.

To all whom it may concern:

Be it known that I, CHARLES M. CRANDALL, of Montrose, in the county of Susquehanna and State of Pennsylvania, have invented a new and Improved Toy Cannon; and that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, making part of this specification.

This invention is in the nature of an improvement in toy cannons; and the invention consists in a toy cannon constructed with a rubber or other yielding substance interposed between the cascabel and the breech of the gun to receive and protect the breech of the gun and the cascabel from being fractured by the percussive force of the spring when the gun is operated; and, also, the knob of the cascabel provided with a sheave, and the trunnions of the gun having saw-kerfs formed therein, within which is secured the spring by which the gun is operated; the cheeks of the carriage having locking devices, whereby the trunnions are kept in their seats, and the trail divided into sections, which are hinged.

In the accompanying sheet of drawings, Figure 1 is a side view of my toy cannon; Fig. 2, a transverse sectional view of same, and Fig. 3, a section of end of trunnion, showing method of securing ends of spring.

Similar letters of reference indicate like parts in the several figures.

A represents a toy cannon made from wood or other suitable material, the bore *a* of the gun being enlarged near the muzzle, forming a chamber, B, for the reception of the ball to be projected. Within the bore *a* of the gun is fitted a rammer, *b*, the rammer being provided with a head, *c*, fitting loosely within the bore *a* at one end, and the other end of the rammer passing through the breech of the gun and into the cascabel C, the staff of the rammer being proportioned so as to permit the head *c* to project slightly into the chamber B when the cascabel is in contact with the breech of the gun.

Onto that part of the staff of the rammer which projects through the breech of the gun, and between the breech and the cascabel, is fitted a washer, D, of rubber or other yielding material. Into the knob *d* of the cascabel is formed a sheave, E. The trunnions *e e* have made in them saw-kerfs F F, and into these saw-kerfs are inserted and secured the ends of the spring G. The spring G, thus secured, is stretched with suitable tension into the sheave E resting upon the wheel of the sheave.

To the cheeks H H of the carriage are affixed, by a yielding joint *j*, locking devices I I, the upper ends of these devices being provided with notches *f f*, within which are received that portion of the trunnions which projects beyond the outer surface of the cheeks, confining the trunnions firmly in their seats. The trail K of the carriage is divided into two or more parts, *g* and *h*, the two parts being united by a hinge-joint, *i*.

My gun being constructed substantially as I have described it, it is operated by opening out the trail K to its full extent, which the hinge-joint *i* readily admits of, and, by pressing the hand, or kneeling upon the trail K, keeping the gun fixed in the desired position, and drawing out the cascabel C from the breech of the gun, thereby increasing the tension of the spring G, inserting the ball or projectile to be used into the chamber B of the bore, pointing the gun in the desired direction, and releasing the cascabel from the grasp of the hand, when the recovering elasticity of the spring G projects the head of the rammer within the gun against the projectile, ejecting it from the chamber B with considerable force in the direction in which the gun is aimed.

To prevent the percussive force from fracturing the breech of the gun and the cascabel, when the cascabel is returned against it by the action of the spring *g*, the yielding or elastic washer D is interposed between the breech and the cascabel to receive and cushion the blow, thus preventing the injury that, but for its presence, would be likely to ensue.

To retain the trunnions of the gun within their seats in the cheeks of the carriage, the locking devices I I are applied, and effect this purpose. They are secured to the cheeks by a yielding or pivotal joint, *j*, at their lower end, so that they may be turned back from the trunnion to enable the gun to be removed

from the carriage when it is desired to fit a new spring, or for any other purpose.

The advantage derived from the folding or adjustable trail is, that the trail may be reduced in length for the purpose of packing, or otherwise.

The sheave E in the knob of the cascabel is of special value, for, by means of it, the tension of the spring G is equalized, more particularly when a new spring is applied, but also, to some extent, at all times.

Having now described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. A toy-cannon, the knob of the cascabel thereof constructed with a sheave and combined with a yielding washer, a spring, and the breech of the cannon, substantially as shown and described.

2. In a toy cannon, the trunnions thereof provided with saw-kerfs, within which is secured the operating-spring, substantially as and for the purpose described.

3. In a toy cannon, the knob of the cascabel constructed with a sheave, whereby the tension of the spring is equalized, substantially as described.

4. In a toy cannon, the cheeks thereof provided with locking devices, secured by an adjustable joint at their lower ends, and a notch at or near their upper ends for the reception of the trunnions, substantially as described.

5. In a toy cannon, the trail of the carriage, formed in two or more pieces and united with a hinge-joint, substantially as and for the purpose described.

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Witnesses:

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