

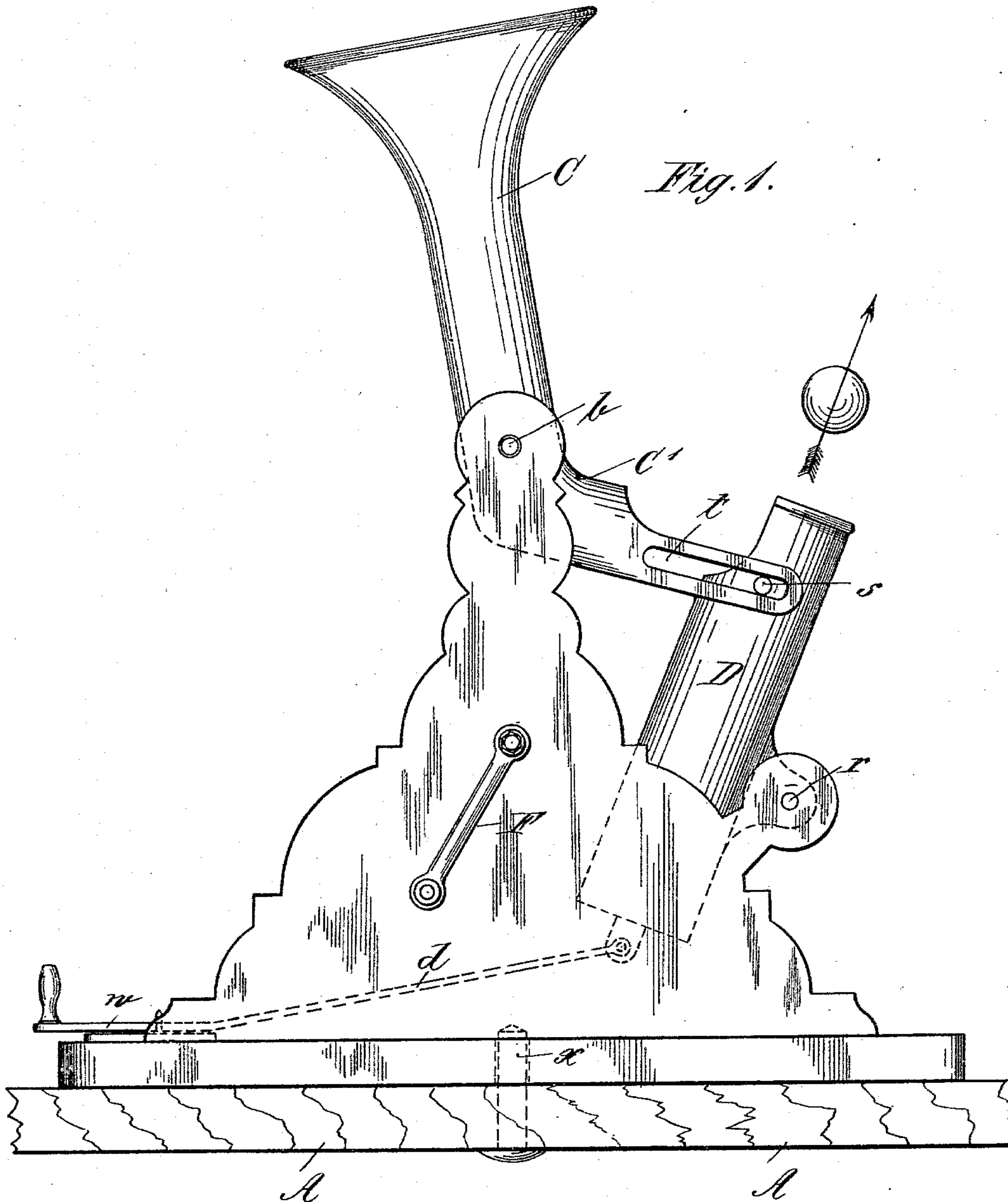
(No Model.)

2 Sheets—Sheet 1.

E. RUDOLPH.  
BALL THROWING DEVICE.

No. 563,807.

Patented July 14, 1896.



Witnesses:  
A. B. Degges.  
L. D. Heinrichs.

Inventor:  
Emil Rudolph  
by G. Pittman Atty.

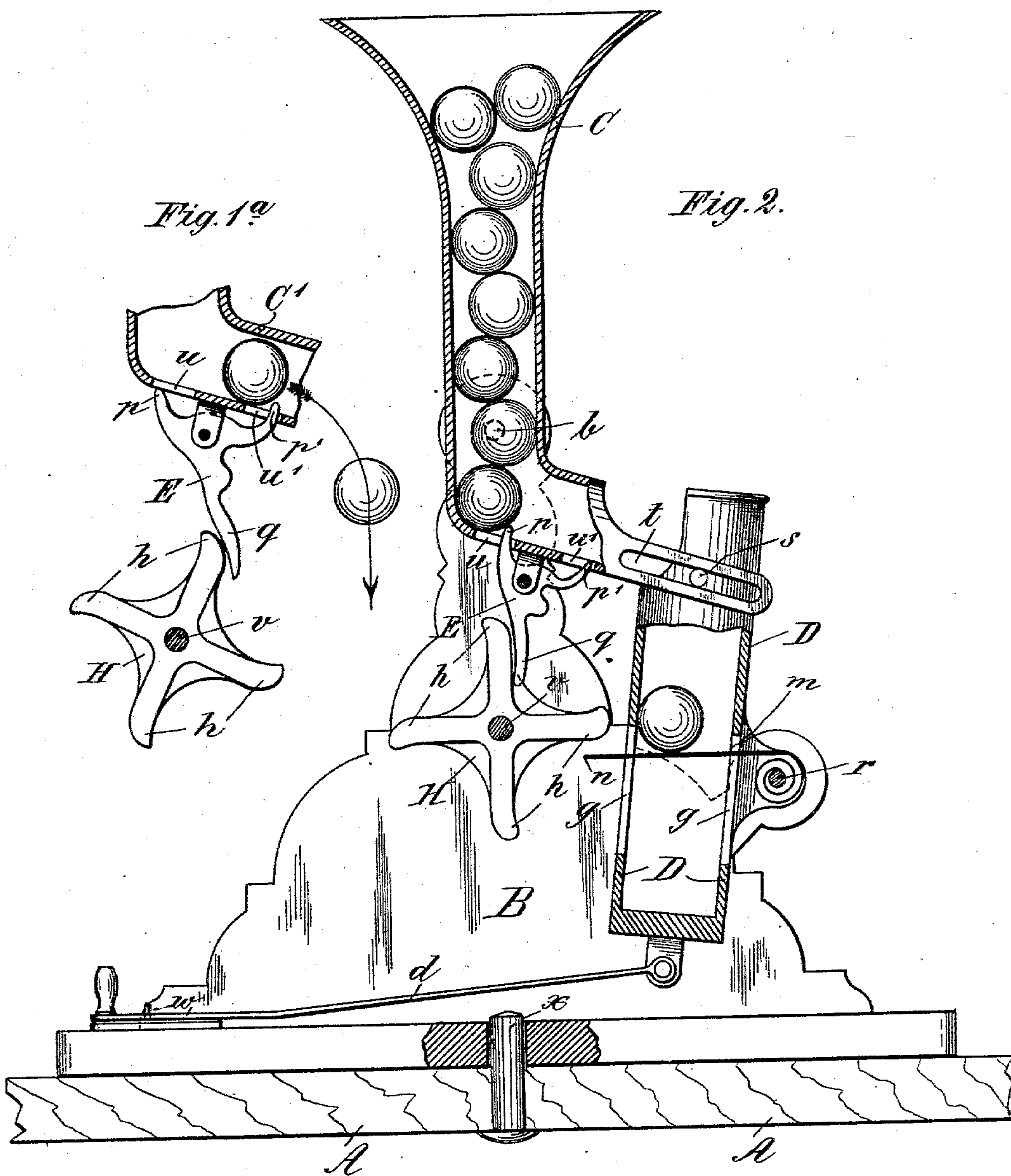
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by G. P. H. H. H. H.



# UNITED STATES PATENT OFFICE.

EMIL RUDOLPH, OF BERLIN, GERMANY.

## BALL-THROWING DEVICE.

SPECIFICATION forming part of Letters Patent No. 563,807, dated July 14, 1896.

Application filed November 23, 1895. Serial No. 569,961. (No model.)

*To all whom it may concern:*

Be it known that I, EMIL RUDOLPH, merchant, a subject of the King of Prussia, German Emperor, and a resident of Berlin, Prussia, Germany, have invented certain new and useful Improvements in Throwing or Slinging Machines, of which the following is a specification.

The present invention has for its object a toy used to throw balls at an elevated target, such as wooden birds or other objects made up in sections, suspended on a string or otherwise supported in the air, and more particularly relates to an apparatus adapted to receive a number of balls and to throw them one by one, either in the same or in various directions.

The apparatus is so constructed that by the turning of a crank a ball is thrown and at the same time another ball is put into position for the next throw as long as the contents of the reservoir for the balls last.

This apparatus is shown in the accompanying drawings, in which—

Figure 1 is a side elevation. Fig. 2 is a vertical section. Fig. 1<sup>a</sup> shows a detail view to illustrate how the parts coöperate.

On a plate A, provided with a pin, the base of the apparatus is made to revolve. Two side plates B, rising from the base, receive at their upper end a reservoir C for the balls to be thrown, which is widened at the top in the shape of a funnel or hopper and which is provided with lateral pivots *b*, engaging in holes of the sides B. In front of the machine is a tube D, oscillating on a small shaft *r*, lodged in the sides B. This tube is closed at the bottom and has near the open top end two lateral pins *s*, engaging into slots *t t* of the chute C', forming part of the hopper C. The bottom of said tube D is pivotally connected to a rod or strap *d*, provided at the free end with a handle and with a number of holes adapted to be placed upon the small pin *w* projecting from the base. This device permits of giving to the tube D any desired inclination from the vertical to about one-half of a right angle, so that balls might be thrown up in the air under any desired angle and in any desired direction by turning the whole apparatus on the pin *a*.

A lever E, having two teeth or fingers *p p'*,

projecting through openings *u u'* in the bottom of the chute C', is fulcrumed in a lug projecting downwardly from the bottom of said chute and is operated by a star-wheel H, lodged with journals *v* in holes of the sides B, which when actuated by the crank F on the outside operates by means of its cams *h* upon the tail end *q* of the lever E. It will be understood from Figs. 1<sup>a</sup> and 2 that by this operation the finger *p'* enters into the chute C', while the finger *p* recedes, so that the lowest ball will roll forward and will be caught by the finger *p'*, as shown in Fig. 1<sup>a</sup>. When the cam *h* has turned far enough to abandon the tail end *q*, the lever E will be returned by gravity into the normal position, Fig. 2, and the ball having been held up by the finger *p'* will become free and will fall into the tube D, upon the spring, which is wound upon the pivot *r* of said tube. The free end *n* of this spring passes through slots *g* in the tube D, and this free end, being also acted upon by the cams *h* of the wheel H, said spring will be tensioned by one cam at the same time as the next following cam actuates the lever E to disengage the lowest ball in the reservoir in the manner above described.

The position of the parts is so arranged that the spring is released before the lever E is released, allowing another ball to roll down into the tube D.

Having thus described my invention, I claim—

1. An apparatus for throwing balls composed of a pivoted reservoir for the balls, having means to feed balls therefrom one by one, of a pivoted tube provided with a spring and means to place the said tube under more or less inclination and of means to actuate the feed mechanism of the balls and the spring to throw the same, substantially as described.

2. An apparatus for throwing balls composed of a pivoted reservoir, having a lever pivoted on its under side with two fingers alternately entering into the chute of said reservoir, the first finger disengaging the lowest ball to allow it to roll down against the second finger and at the return motion disengaging the free ball from said second finger, while the first finger catches up the supply of balls in the reservoir, in combination with a wheel, having cams, actuating said lever and in com-



bination with a pivoted tube having a spring within the path of said cams adapted to be tightened thereby and to throw the balls, substantially as described.

- 5 3. An apparatus for throwing balls composed of a pivoted reservoir, having a lever pivoted on its under side with two fingers alternately entering into the chute of said reservoir, the first finger disengaging the lowest  
10 ball to allow it to roll down against the second finger and at the return motion disengaging the free ball from said second finger, while the first finger catches up the supply of balls in the reservoir, in combination with a crank-  
15 actuated wheel, having cams, operating said

lever and in combination with a pivoted tube provided with means to vary its inclination and having a spring wound upon the pivot of said tube and passing through longitudinal slots in the tube with the free end in the path 20 of said cams, substantially as described and for the purpose set forth.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

EMIL RUDOLPH.

Witnesses:

M. W. WILRICH,  
W. HAUPT.