

(No Model.)

J. CHADWICK.
PNEUMATIC TOY.

No. 362,606.

Patented May 10, 1887.

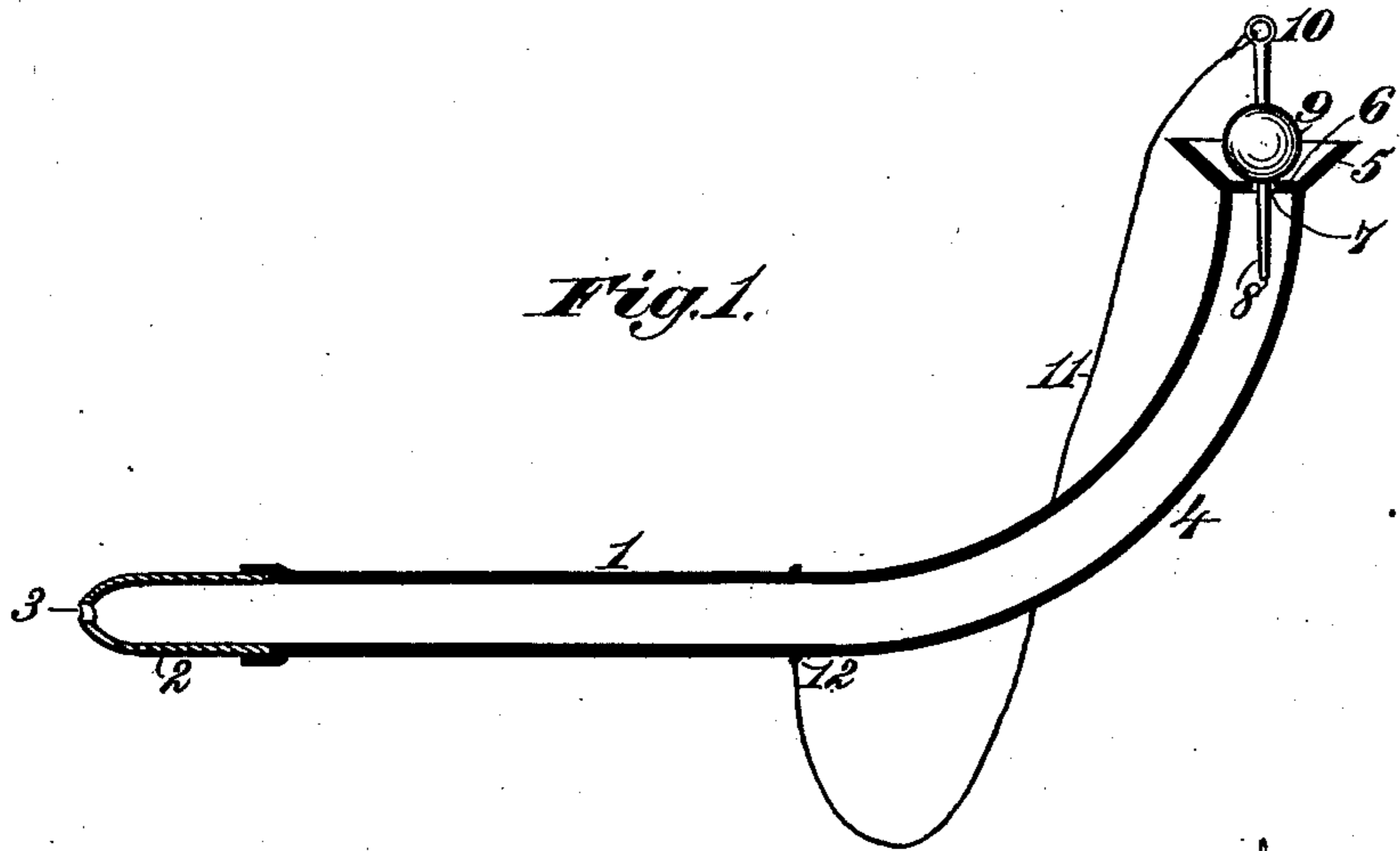


Fig. 1.

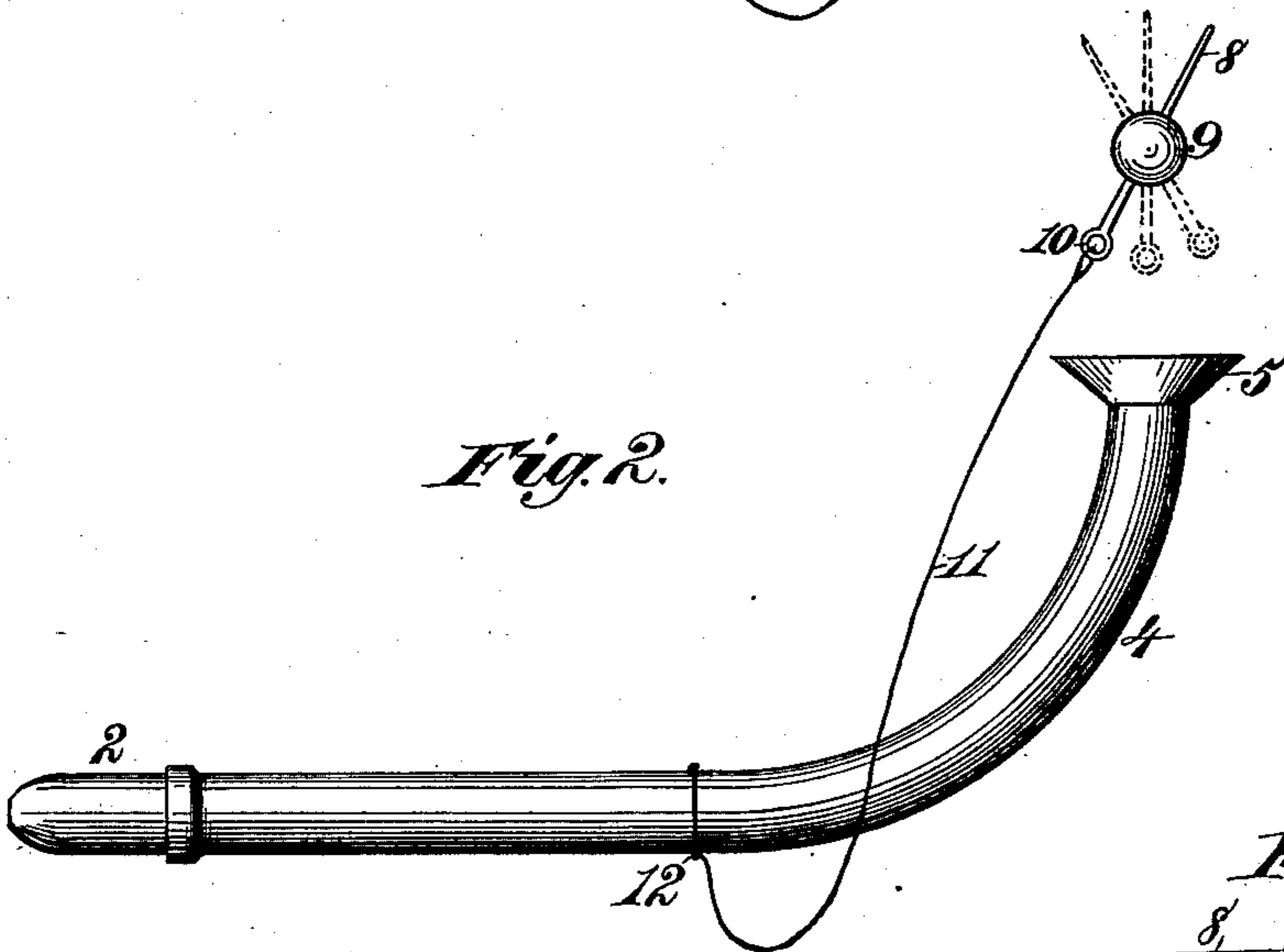


Fig. 2.

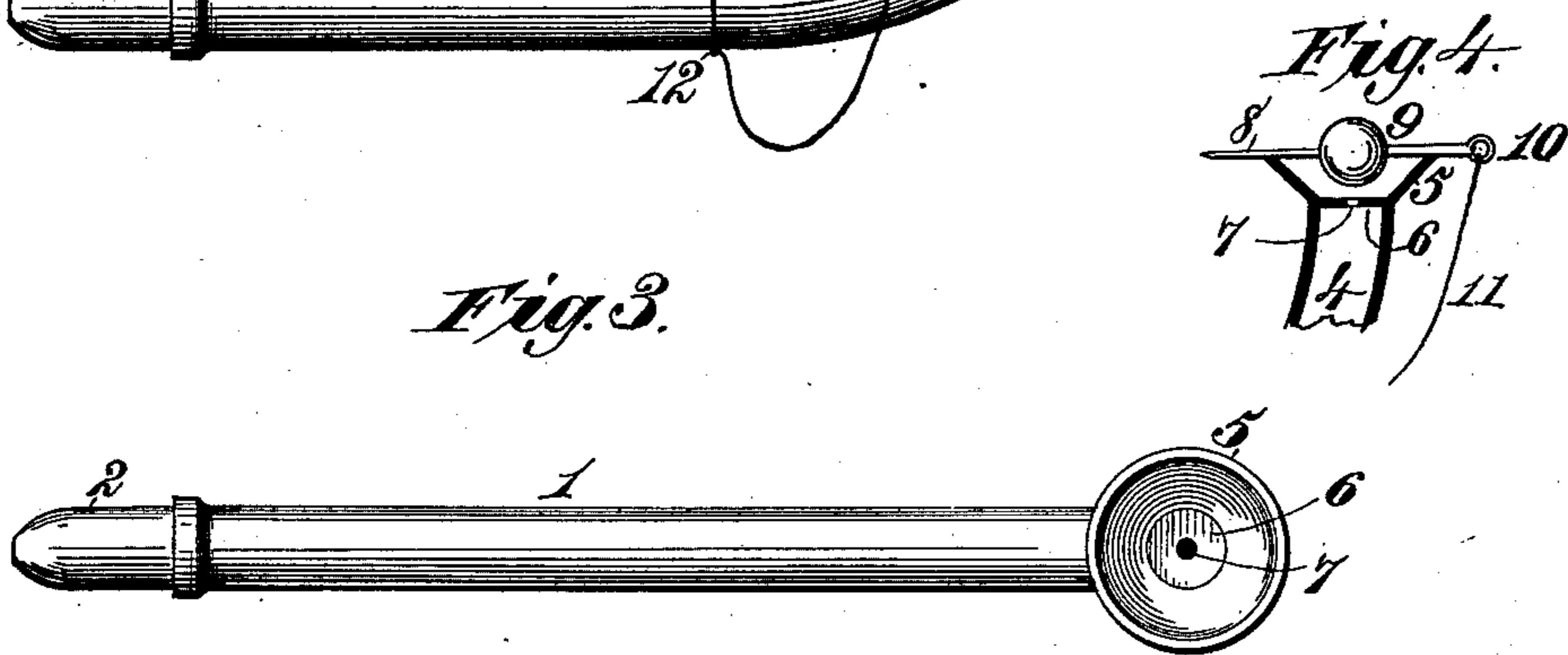


Fig. 3.

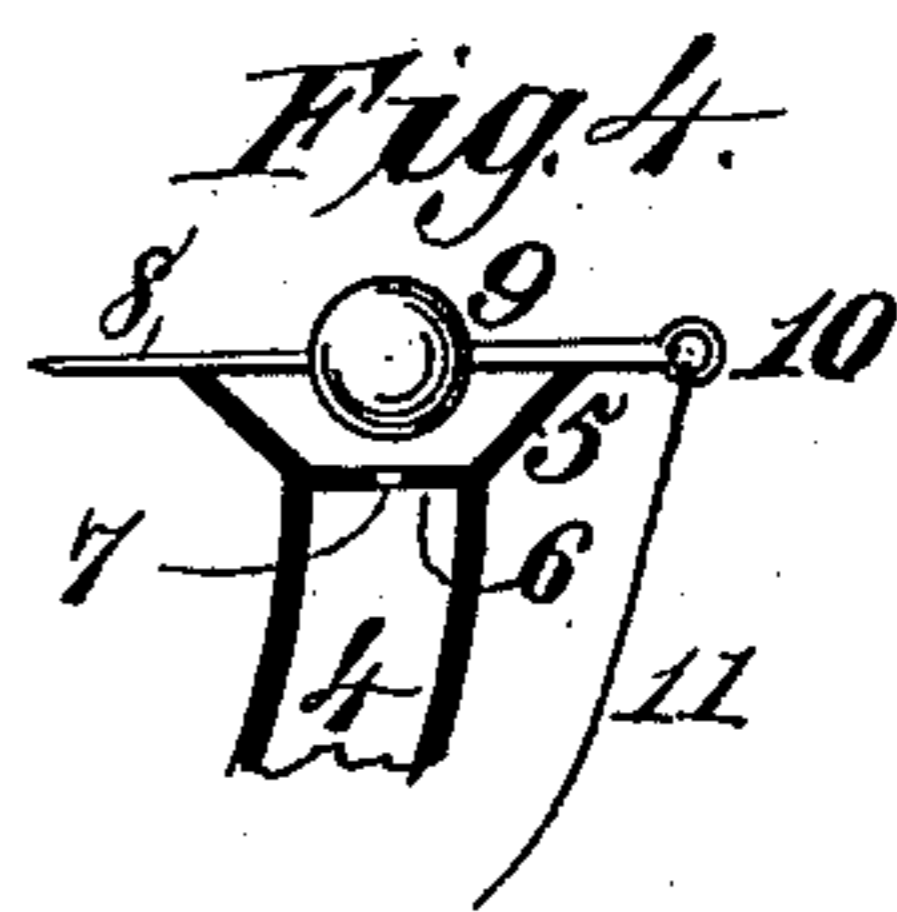


Fig. 4.

Witnesses.
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UNITED STATES PATENT OFFICE.

JOHN CHADWICK, OF BOLTON, COUNTY OF LANCASTER, ENGLAND.

PNEUMATIC TOY.

SPECIFICATION forming part of Letters Patent No. 362,606, dated May 10, 1887.

Application filed October 28, 1886. Serial No. 217,447. (No model.) Patented in England August 28, 1886, No. 10,976.

To all whom it may concern:

Be it known that I, JOHN CHADWICK, residing at Bolton, in the county of Lancaster, England, have invented new and useful Improvements in a Pneumatic Toy, (for which I have obtained a patent in Great Britain, No. 10,976, dated August 28, 1886,) of which the following is a specification.

The object of this invention is to provide a novel and simple pneumatic toy for amusing children; and it consists, essentially, in the combination of a tube having one end turned or bent laterally and provided at its extremity with a bell-mouth, a ball or sphere mounted on a pin adapted to enter a contracted outlet-orifice in a diaphragm fixed in the base of the bell-mouth, and a cord or thread connecting the ball and pin with the tube.

The invention is illustrated in the accompanying drawings, in which—

Figure 1 is a longitudinal sectional view of a pneumatic toy embodying my invention; Fig. 2, a side elevation of the same, showing the ball and pin floating or dancing in the air; Fig. 3, a top plan view of the tube, omitting the ball and pin; and Fig. 4 a detail view showing another use of the ball and pin.

In order to enable those skilled in the art to make and use my invention, I will now describe the same in detail, referring to the drawings, where—

The numeral 1 indicates a tube having at one end a suitable tip, 2, adapted to be inserted between the lips of the person using the toy, and provided with an inlet-orifice, 3, by which a current of air can be forced through the tube. The tube at its other end portion is curved or turned laterally, as at 4, and the extremity of this curved or bent portion is provided with a bell-mouth formed by an outwardly-flaring rim, 5. A diaphragm, 6, is located in the base of the bell-mouth and provided with a central outlet-orifice, 7, adapted to receive a pin, 8, on which is mounted a ball or sphere, 9. The ball or sphere is secured to the pin at or adjacent to the middle of its length, and one end of the pin is furnished with an eye, 10, to which is secured one end of a cord or thread, 11, the other end of which is secured to the tube by an eye, 12. The cord or thread loosely connects the pin

and ball with the tube and prevents the ball from being blown too far away, and also from falling on the floor.

When the pin is inserted in the outlet-orifice, the ball rests directly over the latter and is supported by the diaphragm, and the relative diameters of the pin and orifice are such as to provide for the passage of the air-currents around the pin and through the orifice to act upon the ball. The tip 2 being placed between the lips of the operator and a current of air forced through the tube, the ball and pin will be raised and caused to float or dance in the air-current, as in Fig. 2, the pin oscillating back and forth in a fantastic manner. By increasing and decreasing the force of the air-current the ball and pin will be caused to rise and fall, and thus recede from and approach the bell-mouth, the latter serving to receive said ball and pin and the pin acting in a manner as a balance to the ball. The tube and tip may be of tin or any other metal, or of any desired material, and the ball and pin will be of any light material suitable for the conditions required.

The perforated diaphragm forms a contracted outlet in the base of the bell-mouth, to concentrate the air-current directly on the ball or sphere, and is very important in that it increases the force of the air-current similar to that of a blow-pipe, which admits of the pin being laid across the bell-mouth with the ball directly over the contracted outlet in the diaphragm, as in Fig. 4, so that the device can be efficiently and effectively used in this way.

Heretofore a toy has been composed of a tube bent laterally at one end and provided with a flaring mouth and a ball adapted to rest in the said mouth and mounted on a balancing spear or pin, so that a current of air forced through the tube will raise the ball and spear or pin. In another instance a toy has been composed of a bent tube having a circular flat plate at one end having a central orifice and a disk connected by a string with the tube, so that when the disk is placed on the plate and a current of air is forced through the tube the disk will be held on the plate. Such devices I do not therefore claim.

The construction provides a novel, simple, and very amusing toy for children.

Having thus described my invention, what I claim is—

1. A pneumatic toy consisting of a tube turned or bent laterally at one end, and provided with a bell-mouth having a perforated diaphragm in its base, and a pin adapted to enter said orifice and provided with an attached ball or sphere, substantially as described.
2. A pneumatic toy consisting of a tube turned or bent laterally at one end, and provided with a bell-mouth having a centrally-

perforated diaphragm in the base, a pin adapted to enter the perforation in the diaphragm and carrying a ball or sphere, and a cord or thread connecting the ball and pin with the tube, substantially as described. 15

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

JOHN CHADWICK.

Witnesses:

E. CHADWICK,

E. A. CHADWICK.