

(No Model.)

W. LEGGETT.
TOY.

No. 277,581.

Patented May 15, 1883.

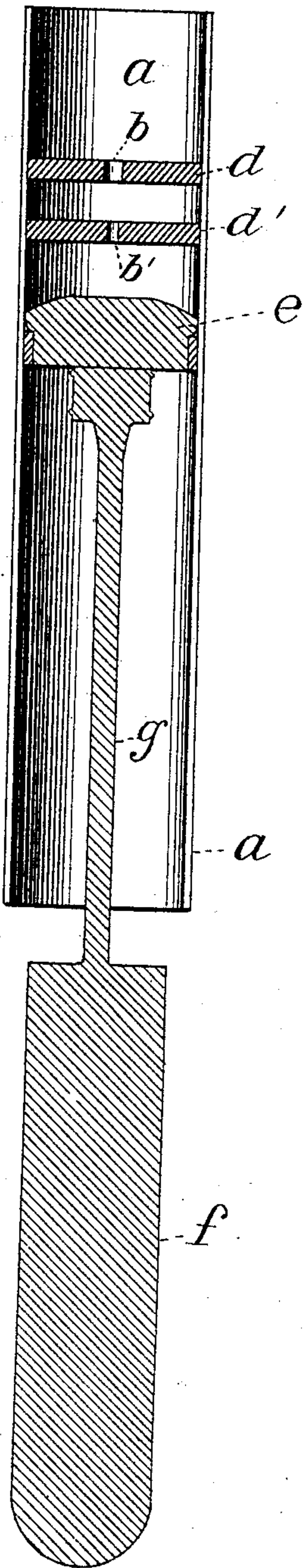


Fig 1

Witnesses:
Chas. B. Bull
Nathan Storm

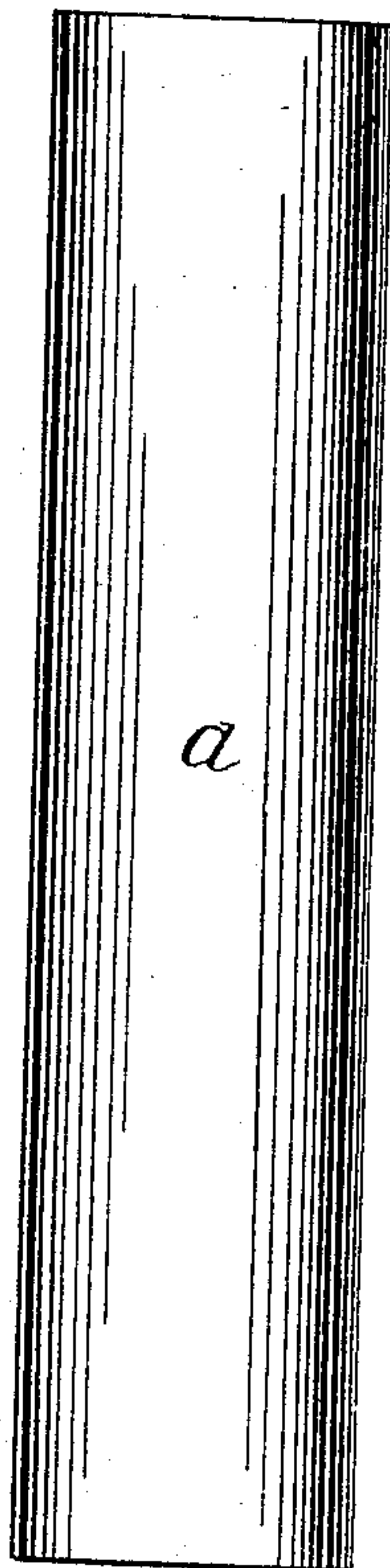


Fig 2

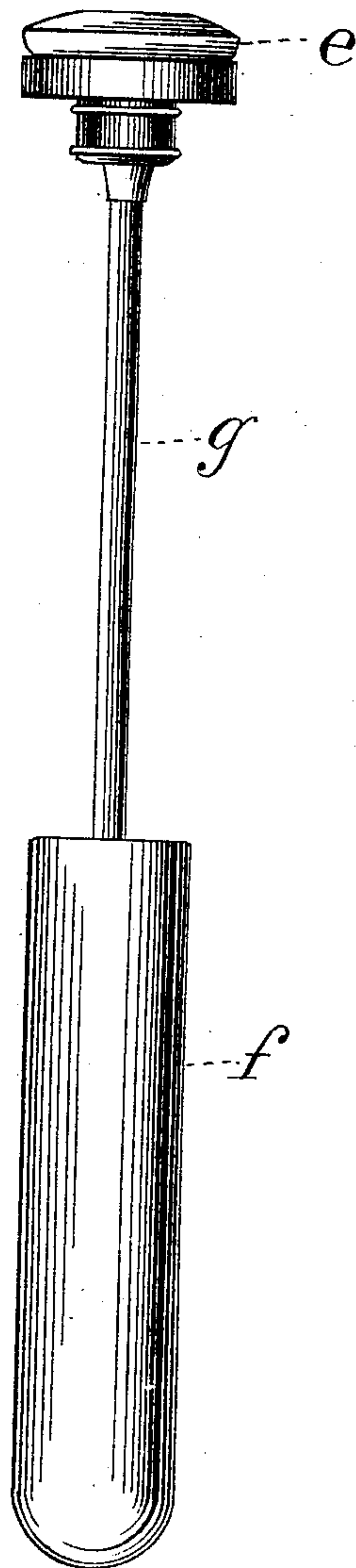


Fig 3

Inventor:
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UNITED STATES PATENT OFFICE.

WILLIAM LEGGETT, OF NEW YORK, N. Y.

TOY.

SPECIFICATION forming part of Letters Patent No. 277,581, dated May 15, 1883.

Application filed March 19, 1883. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM LEGGETT, a citizen of the United States, residing in the city, county, and State of New York, have invented a certain new and useful Toy, of which the following is a description in such full, clear, concise, and exact terms as will enable any one skilled in the art to which my invention appertains to make and use the same, reference being had to the accompanying drawings, making part of this specification, and to the letters and figures of reference marked thereon.

The invention which I desire to secure by Letters Patent consists of a toy which is capable of producing a noise resembling very closely the sound of a high-pressure steam-engine.

Reference being had to the accompanying drawings, Figure 1 is a longitudinal section through my improved toy, partly in section; and Figs. 2 and 3 represent detail parts of the same.

I first take a cylinder or tube of metal, wood, or any suitable material, *a*, having parallel sides and being open at both ends. In this tube, near one end, I insert two diaphragms or disks, *d* and *d'*, separated by a suitable intervening space. These diaphragms may be made of any suitable material—such as metal, wood, hard rubber, &c.—and should be perforated at their centers with holes *b* and *b'*. The hole in the diaphragm *d'* nearer the plunger must be made very small, and considerably smaller than that in the other diaphragm, *d*; but the relative sizes of the holes will be in some degree governed by the precise character of sound it is desired to produce by the toy. These disks or diaphragms should fit the cylinder *a* snugly, and may be held or fastened in the tube in any well-known manner. I prefer to make them form the heads of a drum, which drum is inserted in the cylinder and retained in position by friction or otherwise.

g is a plunger fitted in the cylinder *a*, and made in the ordinary form. By means of this plunger, as will be readily understood, the air in the chamber formed by the sides of the tube *a* and the head of the plunger can be forced through the holes *b'* and *b*, and thereby produce the desired noise. The lower end of the tube *a* I usually close with a suitable cap or cover, (not shown in the drawings,) which is

perforated for the purpose of allowing the plunger-rod *g* to pass freely through the same, and which may be perforated with holes to admit of the free passage of air to and from the cylinder during the action of the piston, the purpose of this cap being to prevent the plunger from being withdrawn carelessly from the tube and to guide and steady the plunger-rod when in operation.

In the toys of this description which I am at present manufacturing I use a cylinder about seven (7) inches in length and one and a half (1½) inch in diameter, and I place the diaphragm *d'*, having the smaller perforation, a distance from the end of the tube equal to about one-fourth of the entire length of the tube, and the diaphragm *d*, having the larger perforation, about three-quarters of an inch distant and above the other diaphragm. The relative position of these disks and their position in the tube may, however, be varied for the purpose of producing various qualities of noises of substantially the same character, and for this purpose, also, the relative size of the perforations *b* and *b'* may be modified; but at present I make the smaller perforation about one-eighth the diameter of the larger perforation. Such perforation may not, however, be extended without limit, as for the purpose of this invention it is essential that the perforation in the disk nearer the plunger be very small—say one-thirtieth of an inch in diameter in a cylinder of the size described, and at the same time be much smaller than that in the disk farther from the same. It may also be observed that the center of these perforations should be on a line parallel with the sides of the inclosing-tube.

My invention may not only be manipulated by hand, but can also be attached to a shaft and wheel and worked by means of any of the well-known mechanical devices for operating piston-rods, as it is obvious that any means that will accomplish this end will force air through the perforations in my device and produce the desired result, and it can not only be used as a toy to amuse children, but may, among other things, form a valuable adjunct to stage property.

I am aware that it is old to force air through perforations suitably arranged with reference to each other for the purpose of producing a

"whistle;" but this is not the object of my invention. By observing the proper relations of the diameters of the perforations and the positions of the diaphragms in the inclosing chamber, as hereinbefore set forth, I am enabled to produce a sound that resembles the puffing of a high-pressure steam-engine. To accomplish this result I find it essential that the perforation aforesaid be of unequal diameter, and the air be forced first through the smaller perforation and then the larger one.

Having thus described my invention, I claim and desire to secure by Letters Patent—

1. The method, substantially herein described, of producing a noise resembling that

of a high-pressure steam-engine, which method consists of forcing air through first a smaller and then a larger perforation in corresponding diaphragms, said diaphragms being separated by a suitable space and inclosed in a cylinder. 20

2. A toy consisting of the following parts in combination: a tube, *a*, intersected by diaphragms *d* and *d'*, being perforated with holes of different diameters, in combination with a plunger, substantially as described, for the purpose specified. 25

WILLIAM LEGGETT.

Witnesses:

CHAS. C. BULL,
WALTON STORM.