

(No Model.)

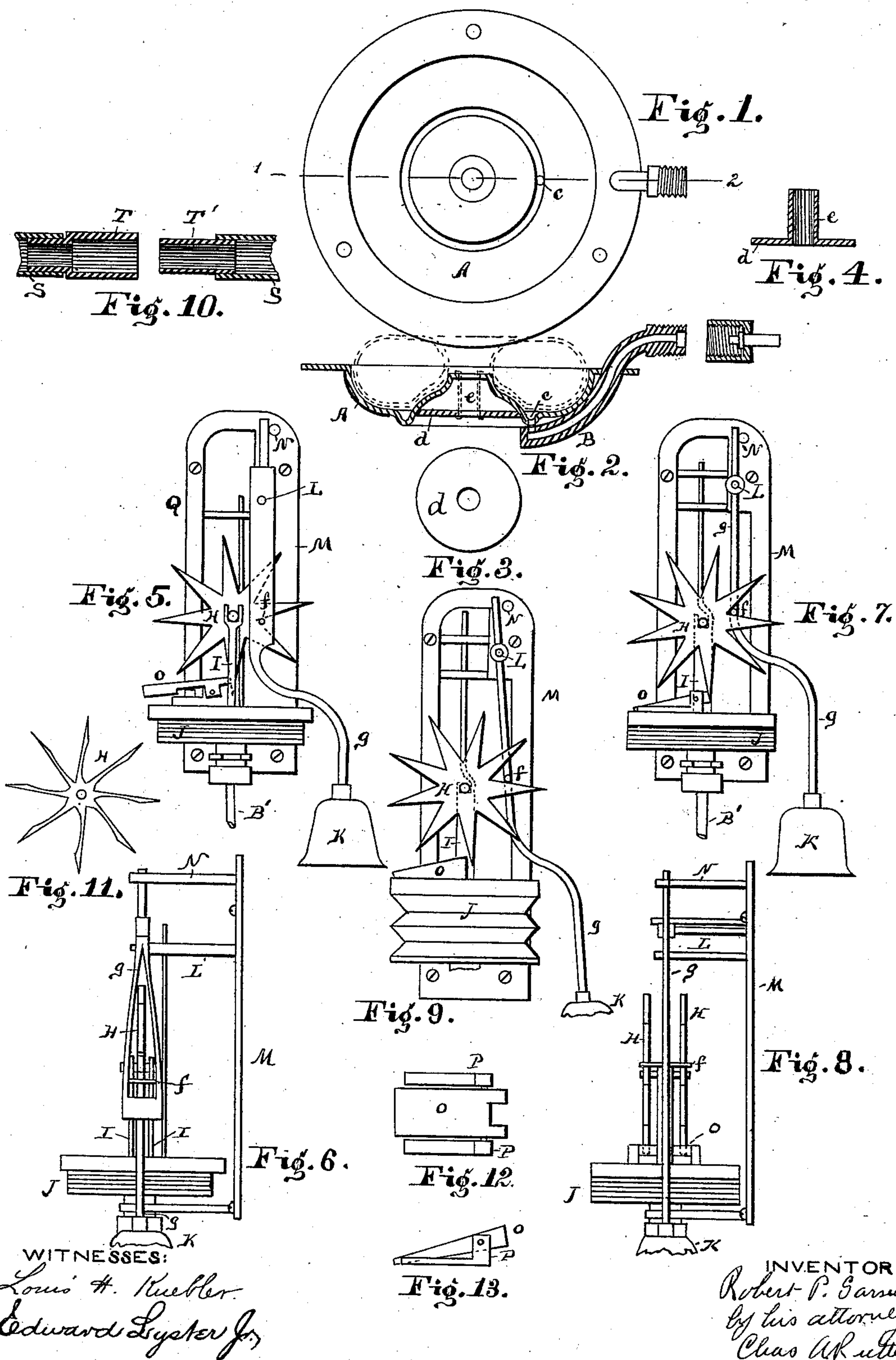
2 Sheets—Sheet 1.

R. P. Garsed.

PNEUMATIC BELL RINGING APPARATUS.

No. 299,636.

Patented June 3, 1884.



(No Model.)

2 Sheets—Sheet 2.

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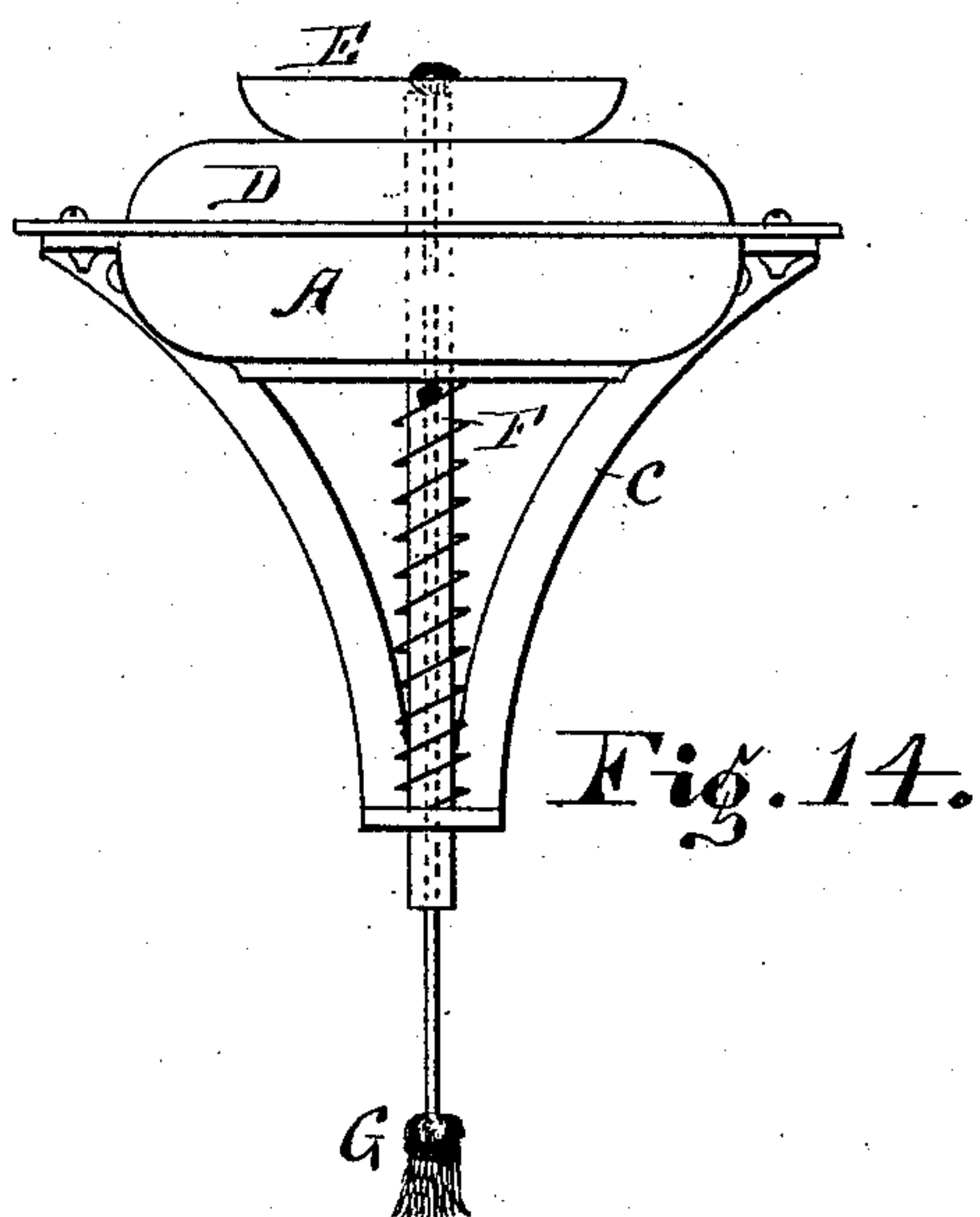


Fig. 14.

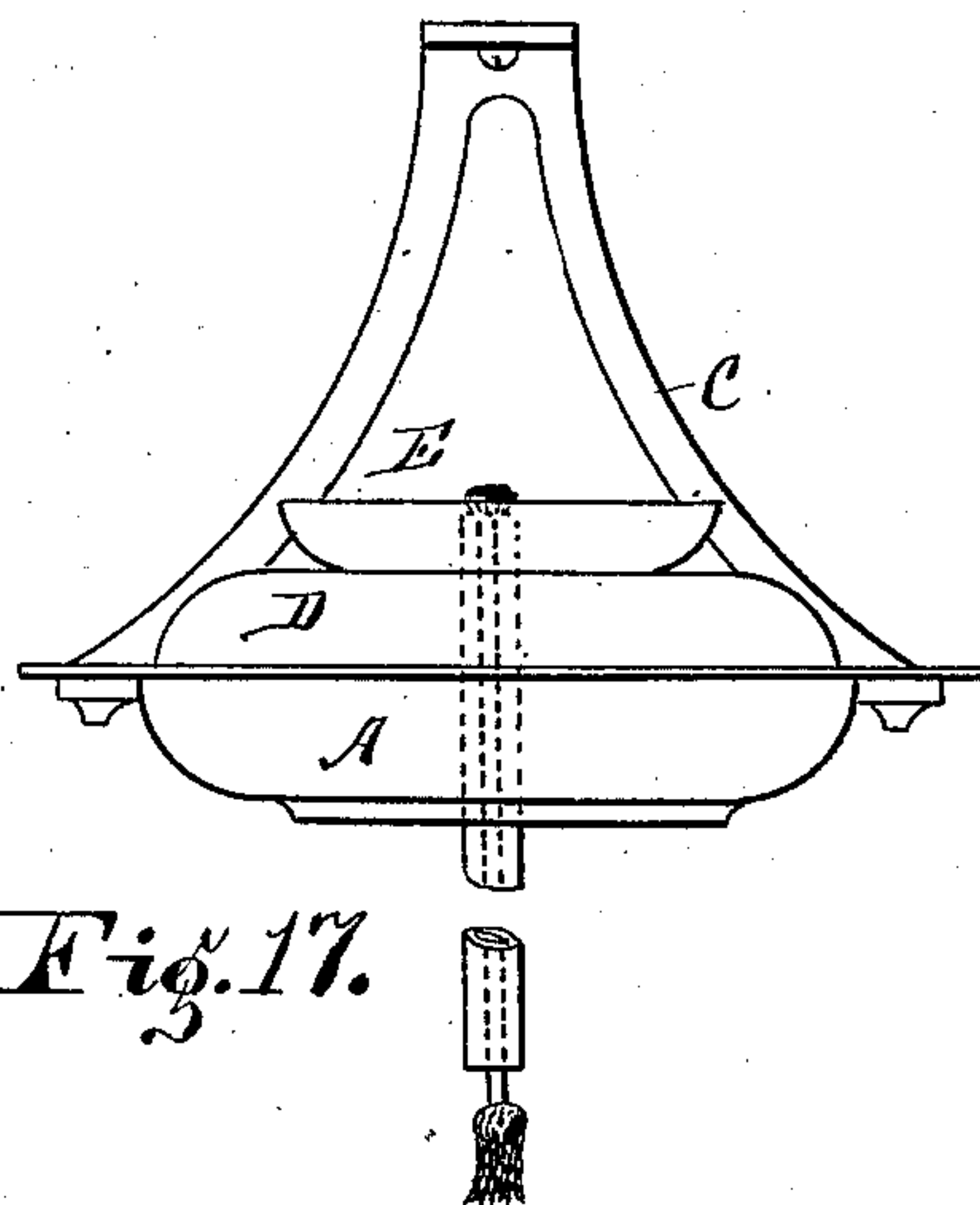


Fig. 17.

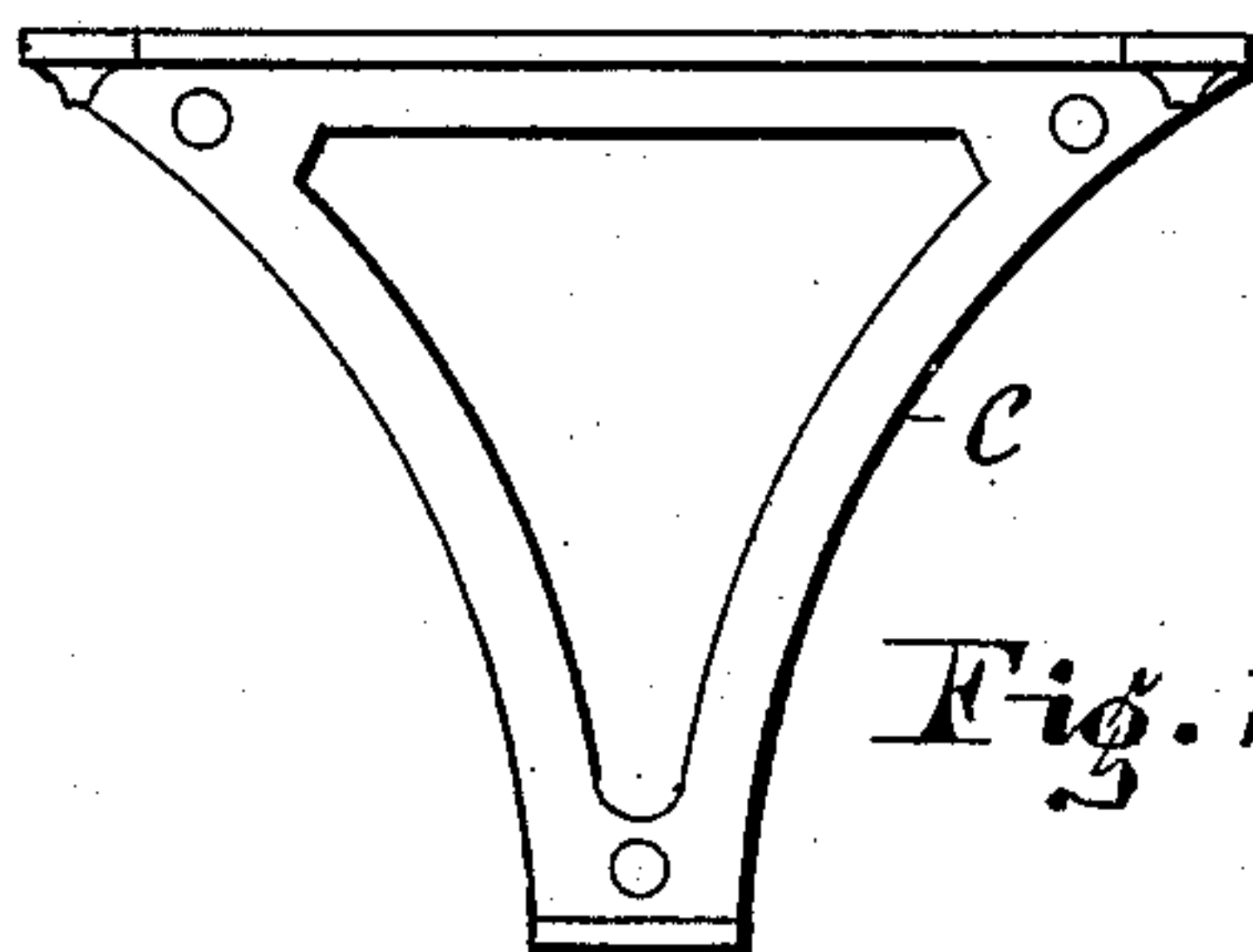


Fig. 15.

Fig. 18.

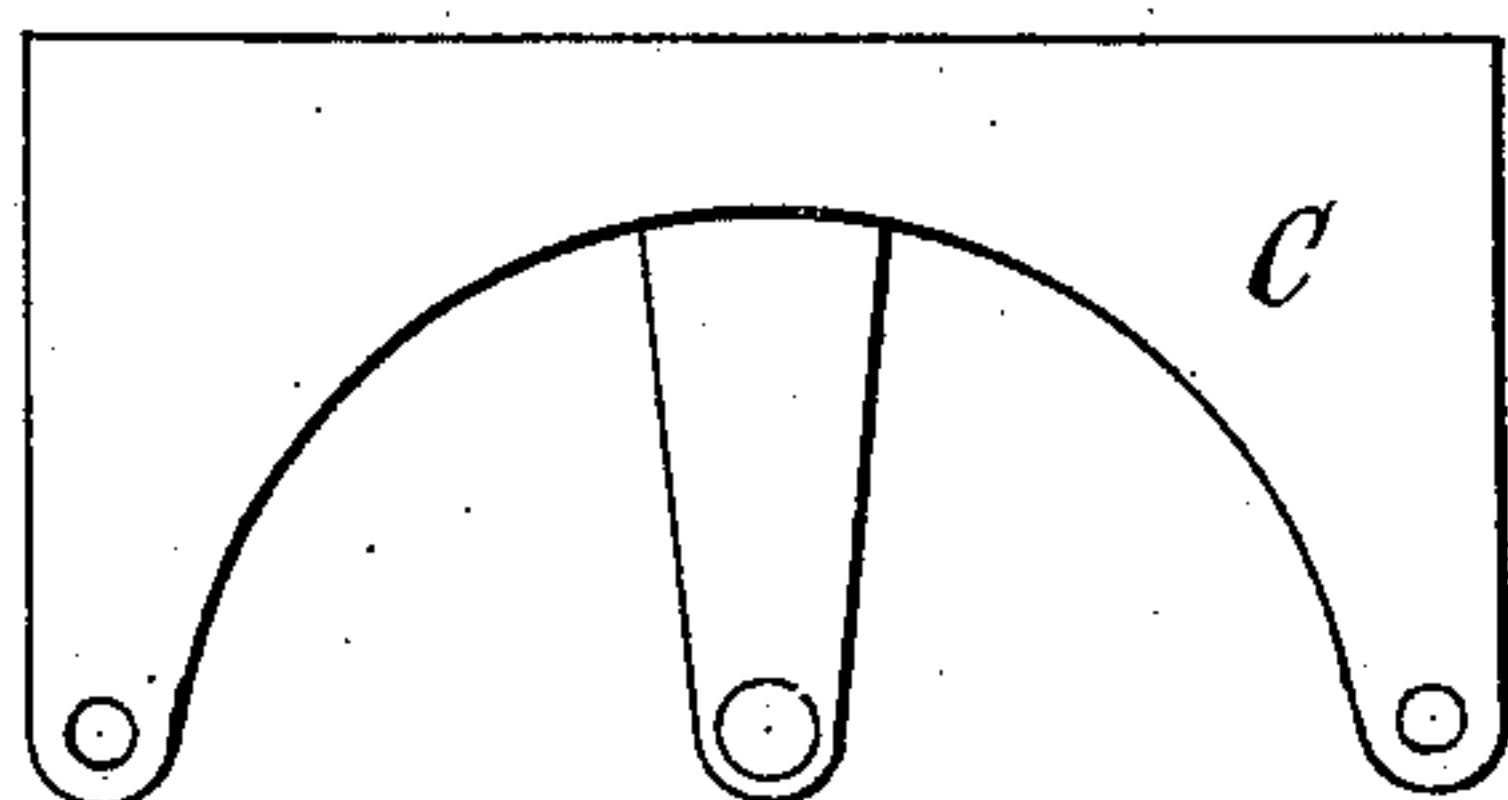
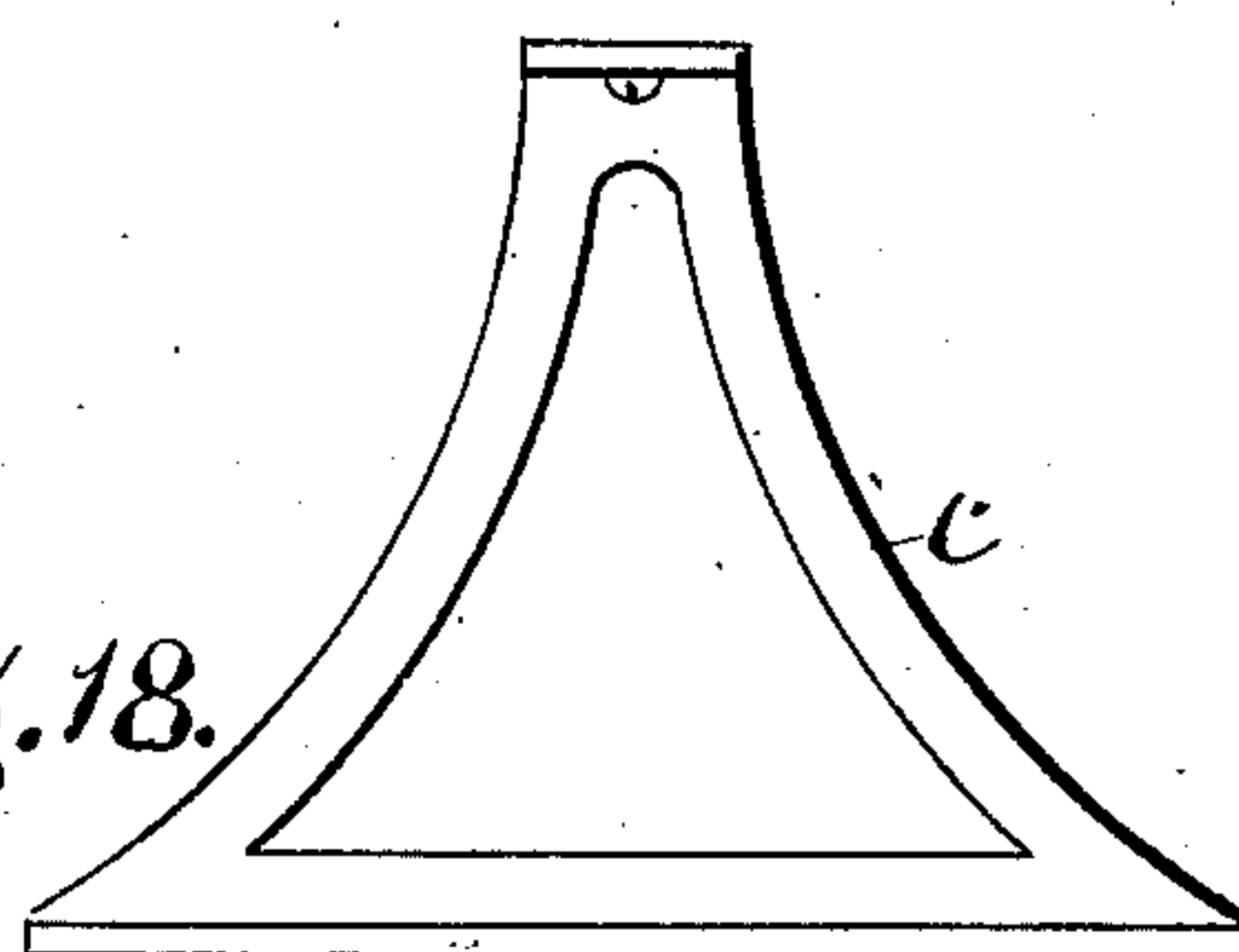


Fig. 16.

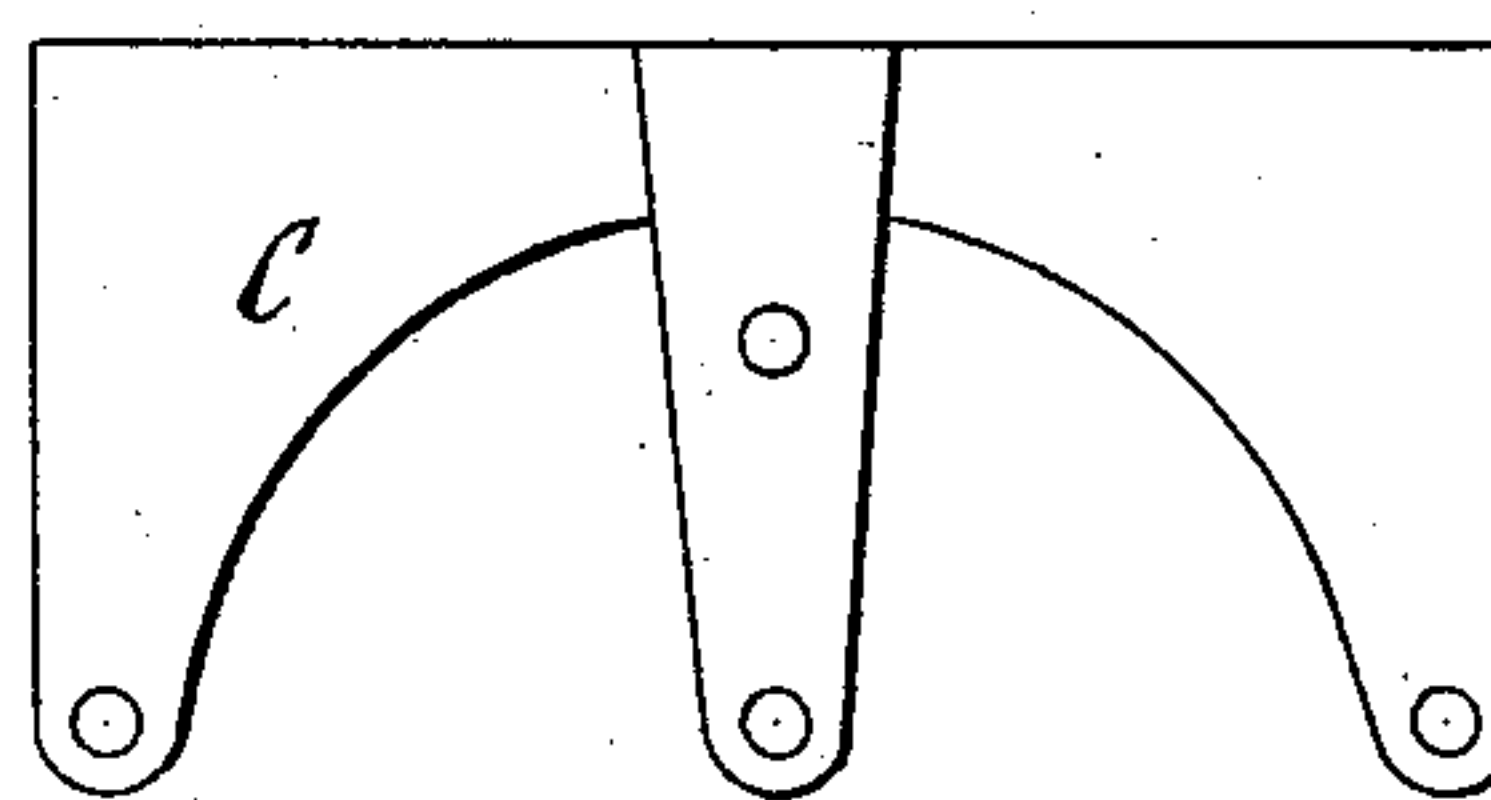


Fig. 19.

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UNITED STATES PATENT OFFICE.

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PNEUMATIC BELL-RINGING APPARATUS.

SPECIFICATION forming part of Letters Patent No. 299,636, dated June 3, 1884.

Application filed February 21, 1884. (No model.)

To all whom it may concern.

Be it known that I, ROBERT P. GARSED, a citizen of the United States, and a resident of Norristown, Montgomery county, Pennsylvania, have invented a new and useful Improvement in Signals, of which the following is a specification.

The object of my invention is to furnish a cheap and effective signal for railroad and household use.

In the accompanying drawings, forming part of this specification, and in which similar letters of reference indicate like parts throughout the several views, Figure 1 is a plan of a pump-holder; Fig. 2, a central sectional elevation of the same on line 1 2, Fig. 1; Fig. 3, a plan of disk *d*, Fig. 2; Fig. 4, a modification of this disk; Fig. 5, a front view of bell-ringing mechanism in which one star is used to actuate bell; Fig. 6, a side view of the same; Fig. 7, a front view of bell-ringing mechanism in which two stars are used to actuate bell, the bell-rod passing between them; Fig. 8, a side view of the same; Fig. 9, a front view of Fig. 7, with rigid stop-piece and with bellows being raised; Fig. 10, a sectional elevation of a coupling for flexible pipes as used between cars, &c.; Fig. 11, a side view of a modification of a star; Fig. 12, a top view of tripping device for holding star in place; Fig. 13, a side view of the same; Fig. 14, a front view of pump, bracket, &c.; Fig. 15, a front view of a wall-bracket; Fig. 16, a top view of the same; Fig. 17, a front view of a pump, &c., with a ceiling-bracket; Fig. 18, a front view of ceiling-bracket, and Fig. 19 a top view of the same.

My pump-holder A is spun, cast, or stamped in one piece, and has an orifice, *c*, Figs. 1 and 2, in it, through which the air passes from the pump to the connecting-pipe B, which connects the pump and the bell-ringing mechanism with main pipe B', Figs. 5 and 7. In Figs. 1 and 2 the connecting-piece B is shown passing through the flange on the pump-holder, and it is soldered to said pump-holder and furnished with a coupling at its end, as shown, to connect it with the main pipe, which leads to bell-ringing mechanism.

d, Figs. 2 and 3, is a disk, which is soldered to the bottom cavity of pump-holder, and furnished with a hole for bell-rod to pass through.

e, Fig. 2, represents a pipe, which may be riveted at its ends and join the orifices in A and *d* and serve as well to hold disk *d* in place without soldering, and through which the bell-rod may pass.

Fig. 4 shows a modification of *d*, in which *d* and *e* are cast in one piece.

Fig. 5 shows a front view of a bell-actuating device. H is a star supported upon a bellows, J, by standards I. K is the bell, carried by a rod, *g*, and supported by and pivoted upon a pin, L, attached to bracket M. In this case the rod *g* is bifurcated, as shown in Fig. 6, and furnished with a pin, *f*, which rests between the points of the star H. In Figs. 7, 8, and 9 the star is a double one, and the pin *f* passes through the rod, as shown. O is a tripping device, Figs. 5, 7, 8, 9, 12, and 13, which prevents the star from revolving in more than one direction. This device may be arranged on a pivot, as shown in Figs. 12 and 13, so that it will tilt; or it may simply be a piece of metal having an inclined top, as shown in Fig. 9; or, instead of this device, a pawl and ratchet may be used, the first on the star and the second on the standards.

The operation of the bell-ringing device is as follows: The compressed air from the pump when operated causes the bellows J to be raised, and with it the star H, when the pin *f* will travel out toward the point of the star until it reaches the end, when it will slip off and the bell will return by gravity to its first position, and the bell-rod will strike against the abutting-pin N and cause the bell to be sounded. During the ascent of the star the pin *f* rests against the top of one of the points, and the star is kept from revolving by the stop or tripping device O; but during the descent of the star the pin *f* rests against the bottom of the point, and as the star falls, which is owing to its weight or the weight of mechanism on bellows, it is revolved, and one point passes over the tripping device and takes the place of the one that has been moved, and hence the apparatus is in trim to be again operated. The star shown in Fig. 11 has the under sides of its points cut away, to allow a greater swing of the bell-rod by giving a longer face on upper part of star-points.

Fig. 10 shows a sectional elevation of a coupling for flexible pipes. S S' represent the

pipes, and T T' the metal sleeve-joints, which are used to overcome the trouble that arises from rubber tubing sticking to metal. The operation of this device is obvious.

5 Fig. 14 shows a pump, &c., supported by a wall-bracket, C. D is the flexible pump, A the metal pump-holder, E the plunger, F the plunger-rod, and G the pull. The rod F is hollow, and the cord G passes through it, and
10 is knotted at its upper end. The spring surrounding the plunger-rod in this figure rests at its one end upon the lower arm of bracket, and abuts at its other end upon a small collar or pin upon the rod, and upon the operation
15 of pump aids in returning the same to its normal position. A front view of this bracket is shown in Fig. 15, and a top view in Fig. 16.

Fig. 17 shows a pump, &c., on a bracket to be bolted to a ceiling. Fig. 18 shows a front
20 view of this bracket, and Fig. 19 a top view. The advantages of these brackets are that they can be used by inversion for either wall or ceiling.

Having thus described my invention, I
25 claim—

1. In combination, the pump D, of flexible material, with central walled opening, and supported by metal holder A, having a peripheral raise on its outside bottom and a hollow
30 central upwardly-extending form on its inside adapted to extend within the pump D, and the metal disk d, suited for being held within the hollow opening; and forming a guide for the plunger-stem, and said plunger-stem, as and for the purposes set forth.

2. In combination, the pump D, of flexible material, with central walled opening, and supported by the metal holder A, having a peripheral raise on its outside bottom, with hole
40 for the passage of air, and a tube with a connecting-hole on its face, and with a coupling-device on its end, and so shaped as to pass through a hole in pump-holder flange around pump-holder, and form a connecting device
45 for an air-conveying pipe with pump, as and for the purposes set forth.

3. In combination with a bell, a connected pump, pipe, and bellows, and a star supported upon the latter, which upon one motion of
50 the bellows remains rigid and actuates the bell and upon the other motion revolves, whereby it is again placed in position to actuate the bell, substantially as set forth.

4. A free vibrating bell actuated through a pump, pipe, and bellows, and a supported star
55 carried upon the latter, and whose rigidity is maintained in one direction by a shouldered head attached to the bellows, in combination with a supported shaft for such star, substantially as set forth.

5. In combination, a suspended vibrating bell, a pump, connected pipe, inflatable bellows, and an inclined sliding arm supported by said bellows, and adapted by its movement to actuate the bell, a vertical-moving
60 guide pin or standard connected with bellows, and guiding the same in its motions as well as supporting sliding arm, and the bracket M, with guide-piece attached thereto, substantially as and for the purposes set forth.

6. In combination, the pump-supporting bracket C, adapted by reversal of position of its parts for ceiling or wall attachment, the air-pump, with plunger and tubular rod attached thereto, the handle, with cord passing
75 through the plunger-rod, an air-conveying pipe attached to pump, and an air-operated bell, substantially as and for the purposes set forth.

7. In combination, a pump-supporting
80 bracket adapted by reversal of its parts for ceiling or wall attachment, an operative air-pump, connected pipe, and an actuated bell, substantially as and for the purposes set forth.

8. In combination, a supported air-pump,
85 an actuating-plunger having a tubular rod passing through the pump, a handle with attached cord passing through the rod, an air-conveying pipe attached to pump, and an actuated bell, substantially as and for the purposes set forth.

9. In combination, a pump-supporting bracket with vertical and horizontal arm, an air-pump with tubular plunger-rod passing through its center, a handle with cord passing
95 through plunger-rod, a spring surrounding said rod and supported upon one of the arms of the bracket, an air-conveying pipe, and an operative bell, substantially as and for the purposes set forth.

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Witnesses:

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