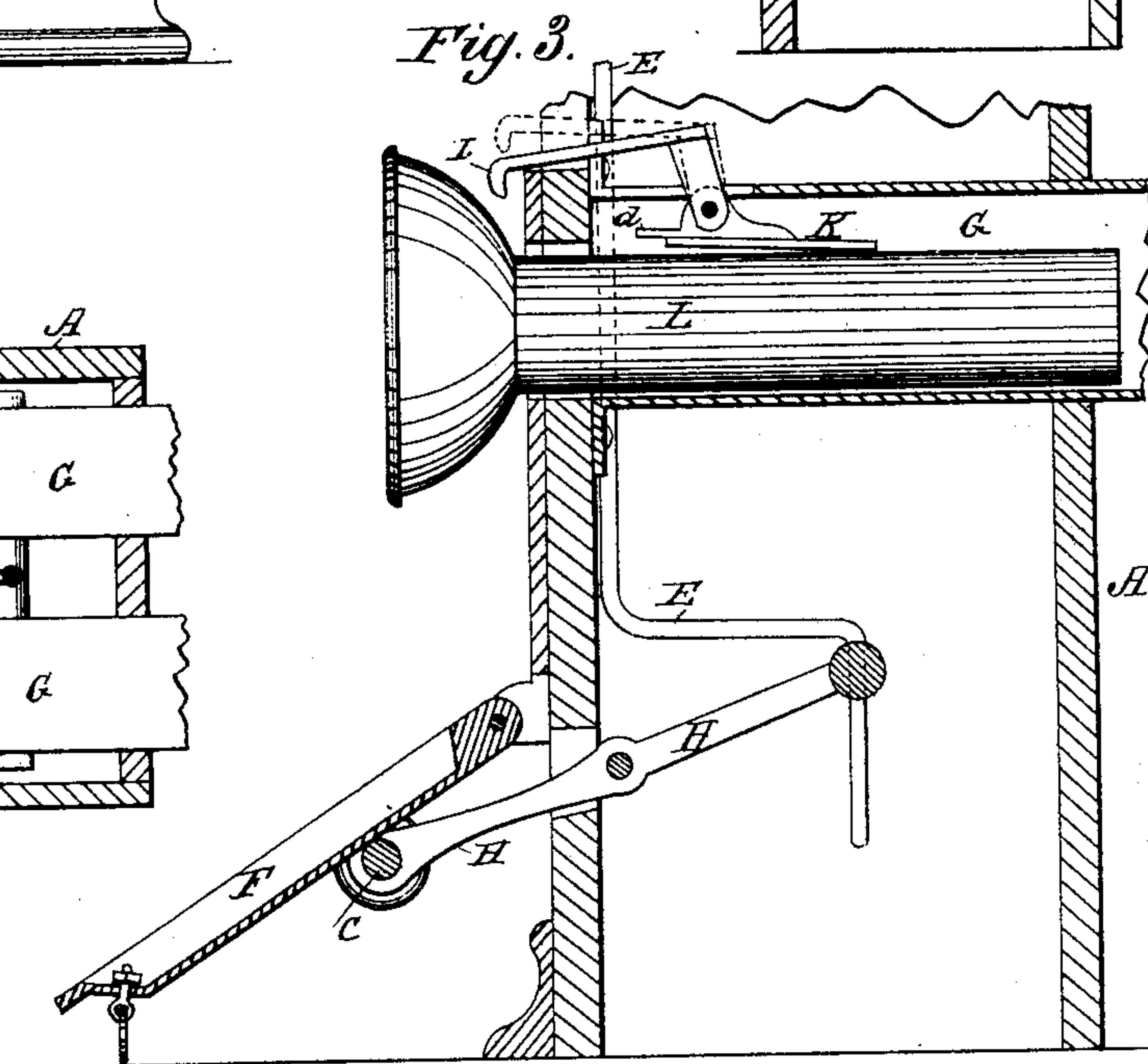
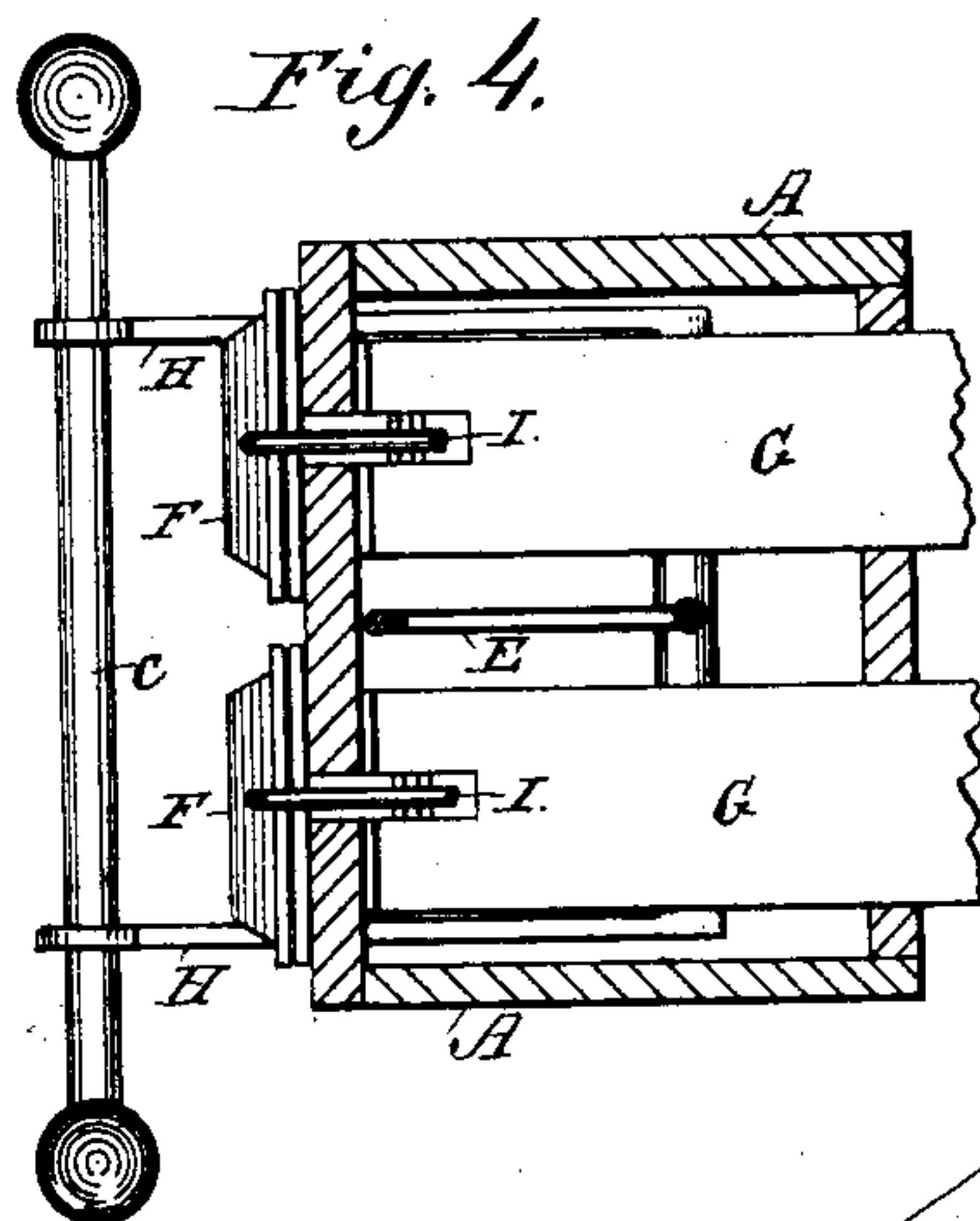
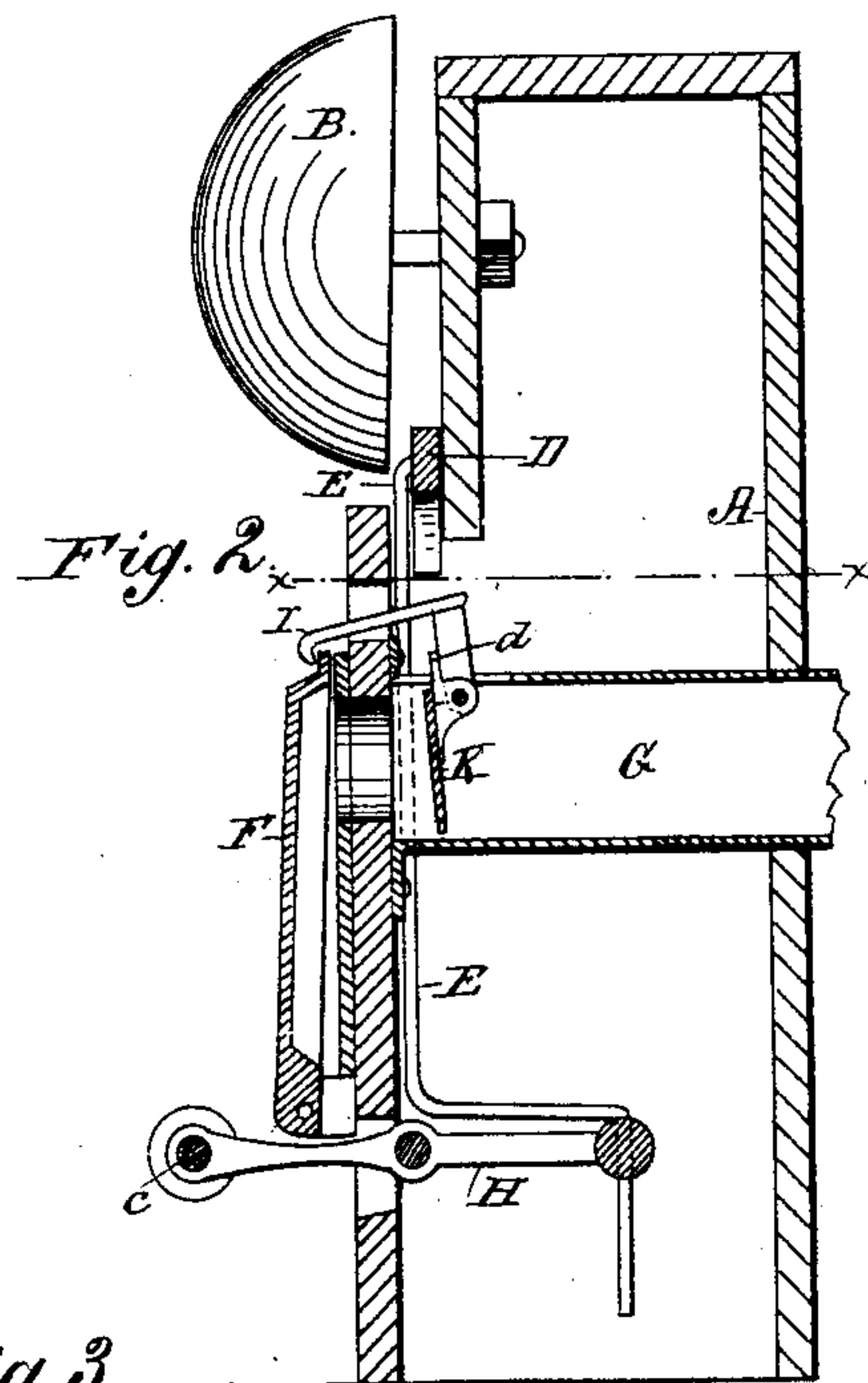
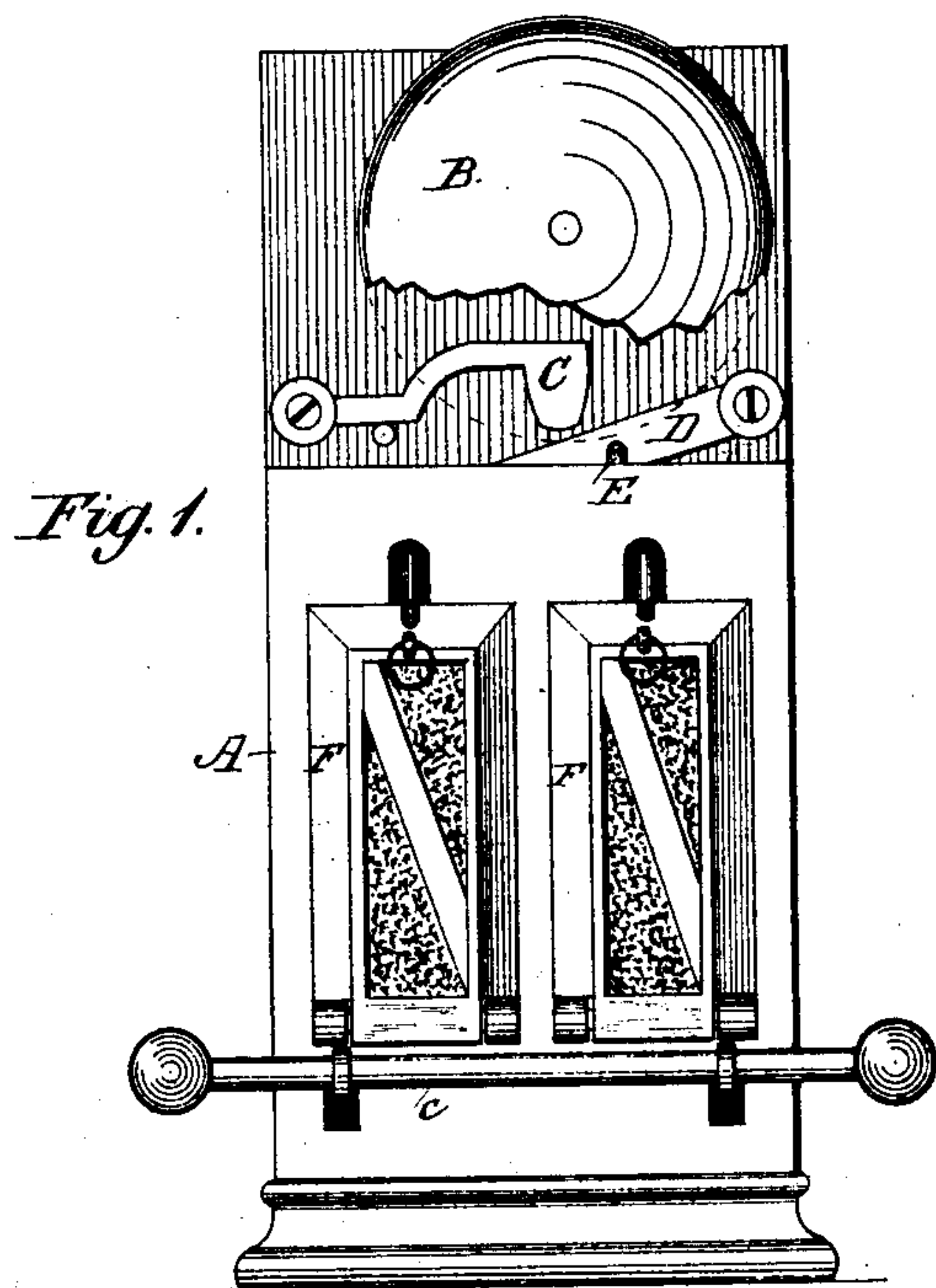


(No Model.)

W. R. OSTRANDER.
SPEAKING TUBE ANNUNCIATOR.

No. 253,092.

Patented Jan. 31. 1882.



WITNESSES:

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INVENTOR:

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UNITED STATES PATENT OFFICE.

WILLIAM R. OSTRANDER, OF NEW YORK, N. Y.

SPEAKING-TUBE ANNUNCIATOR.

SPECIFICATION forming part of Letters Patent No. 253,092, dated January 31, 1882.

Application filed November 19, 1881. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM R. OSTRANDER, of the city, county, and State of New York, have invented a new and useful Improvement in Speaking-Tube Annunciators; and I do hereby declare that the following is a full, clear, and exact description of the same.

The object of my invention is to render more reliable the operation of annunciators the mouths of whose speaking-tubes are provided with drop-valve or hinged covers, which, when a person blows in the other end of the tube, fall and operate an alarm, and thereby give notice of the desire of such person to communicate with another who is within hearing of the alarm. The drop-valves are set vertical, or else slightly inclined inward, in order to prevent them from falling accidentally; but in practice it is found that the concussion arising from the slamming of doors, or jars of the building from the passage of heavy vehicles in the street, or other causes, frequently disturbs the valves, so that they fall, and thus give a false alarm. To this extent, therefore, such annunciators are inoperative and unreliable. To remedy this defect I employ a catch for holding the drop-valves normally closed and a device for tripping it, which is located in the speaking-tube and operated by the breath of the person desiring to communicate, as will be hereinafter more fully described.

In the accompanying drawings, forming part of this specification, Figure 1 is a front elevation of an annunciator-box, with part broken away, provided with my improvements. Fig. 2 is a vertical section of the same, the parts being shown in their normal position. Fig. 3 is a similar section, enlarged, illustrating the position the parts assume when the annunciator is in use. Fig. 4 is a cross-section on line *x x*, Fig. 2.

My present invention is shown in said drawings applied to an annunciator substantially similar in construction to that which forms the subject of Letters Patent No. 242,360, granted to me May 31, 1881.

All the parts constituting the annunciator proper are appendages of a box, A, which in practice is either set in a recess in the wall or a partition of a building, or else attached to

the face of said wall or partition, as convenience may require or taste suggest.

The bell B is provided with a pivoted gravity-hammer, C, that is operated by a trip-lever, D, carrying a pivoted trigger, which engages the hammer when moving upward, but not when moving in the reverse direction. The said trip-lever D is raised by a rigid vertical push-rod, E, whose shouldered or bent lower end is loosely connected with the rocker H. Thus when the latter is tilted the rod E is pushed upward, which raises the trip-lever D and hammer C, and the latter then falling upon the bell B produces the desired alarm. This rod is a substitute for the cord and pulley employed in my former invention.

The rocker H is tilted automatically by the drop-valves F, which normally cover the mouths of the speaking-tubes G. The latter open in the front of the box A, and the valves F are hinged at their lower ends and stand normally vertical, or else slightly inclined inward. The aforesaid rocker H is rectangular in form and pivoted in the front of the box A, so that one half of it projects on the front side of the box A, and the other half is inclosed within the box. The valves F are weighted, so that when one falls on the front portion, *c*, of the rocker H it will tilt the latter, as shown in Fig. 3, and thus raise the push-rod E, trip-lever D, and hammer C, and thereby sound the alarm. Normally the valves F should thus fall and give an alarm only at such time as a person at the farther end of the speaking-tube G desires to communicate with another who is within hearing of the bell B, and for this purpose blows in the tube, thus causing the valves to fall upon the rocker H, which results in producing the desired alarm. In order that the valves F may be thus opened by the air-current with the required ease and certainty, they require to be set vertical, or nearly so; but when so placed a concussion, such as may be produced by slamming or shutting a door violently, or a jar producing a vibration or trembling of the building, will frequently cause them to fall accidentally, and thereby give a false alarm, to the annoyance of persons at one or both ends of the speaking-tube G. To prevent such accidental fall of the drop-valves F and the false

alarm consequent thereon, I employ catches or latches I, which engage the upper end of the valves, and may be automatically released therefrom, as hereinafter described. The said catches are preferably constructed of a stout wire, which passes through an opening in the front of the box A, is bent downward within the latter, and pivoted in the upper side of tube G. The catch is held engaged with a valve, F, by its own gravity, and hence must be raised in order to release the valve. To effect this I employ a swinging trip-plate, K, which is pivoted at the same point as the catch I, and is of such dimensions as to obstruct the passage of air through the tube G to a considerable extent, yet allowing sufficient leakage to pass for acting against and opening the valve F. The plate K has a vertical projection or finger, *d*, which presses against the vertical arm of catch I when the plate is pressed or swings outward.

When a person at the farther end of the speaking-tube desires to communicate with another who is within hearing of the bell B, he blows in the tube G, and the force of the air-current thus created, acting first on the swinging plate K, trips or raises the catch I, as shown in dotted lines, Fig. 3, which operation releases the valve F, so that it drops upon and tilts the rocker H, thus producing the desired alarm. To enable the person thus called to respond with the required distinctness, the plate K must be raised, and for this purpose I employ a portable or detached tube or mouth-piece, L, which is inserted into the fixed speaking-tube G past the plate K, so as to raise and hold it raised, as in Fig. 3. Said tube L may be suspended by a chain or cord from the box A, so as to be convenient for use. So soon as the tube L is withdrawn the gravity of plate K causes it to resume its former vertical position, as shown in full lines, Fig. 2, and the annunciator is then

ready for use, as before. It is obvious that to open the valves from the front of the box A it is only necessary to push up the catch I. The portable tube L being then inserted as above described, the person desiring to communicate blows into it, which operates an alarm (not shown) located at the other end of the tube G.

What I claim is—

1. The combination, with the drop-valve or cover for the mouth of a speaking-tube, of a catch or latch therefor, a trip-plate which swings in said speaking-tube and trips the catch for the purpose of automatically releasing the valve, substantially as shown and described.

2. The combination, with the pivoted catch or latch for the drop-valve, of a plate which swings vertically in the speaking-tube, so as to interrupt an air-current therein, and is adapted to act on said catch for raising it and thereby releasing the valve automatically, as hereinbefore set forth.

3. The combination, with the gravity drop-valve catch, pivoted as shown, of the trip-plate K, which swings in the speaking-tube and is provided with the vertical extension or finger *d*, for acting on the catch to raise it for the purpose of releasing the valve, as set forth.

4. The combination, with the drop-valve catch and the swinging trip-plate, which are hinged independently within the fixed speaking-tube, of a detachable mouth-piece or tube whose diameter is less than that of said speaking-tube, all as shown and described, whereby said plate may be raised or displaced by inserting the mouth-piece, and will automatically resume the vertical position when said mouth-piece is withdrawn, as and for the purpose specified.

WILLIAM R. OSTRANDER.

Witnesses:

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JAMES M. TULLY.