

(No Model.)

W. THOMAS.
PNEUMATIC ANNUNCIATOR.

No. 324,500.

Patented Aug. 18, 1885.

Fig. 1.

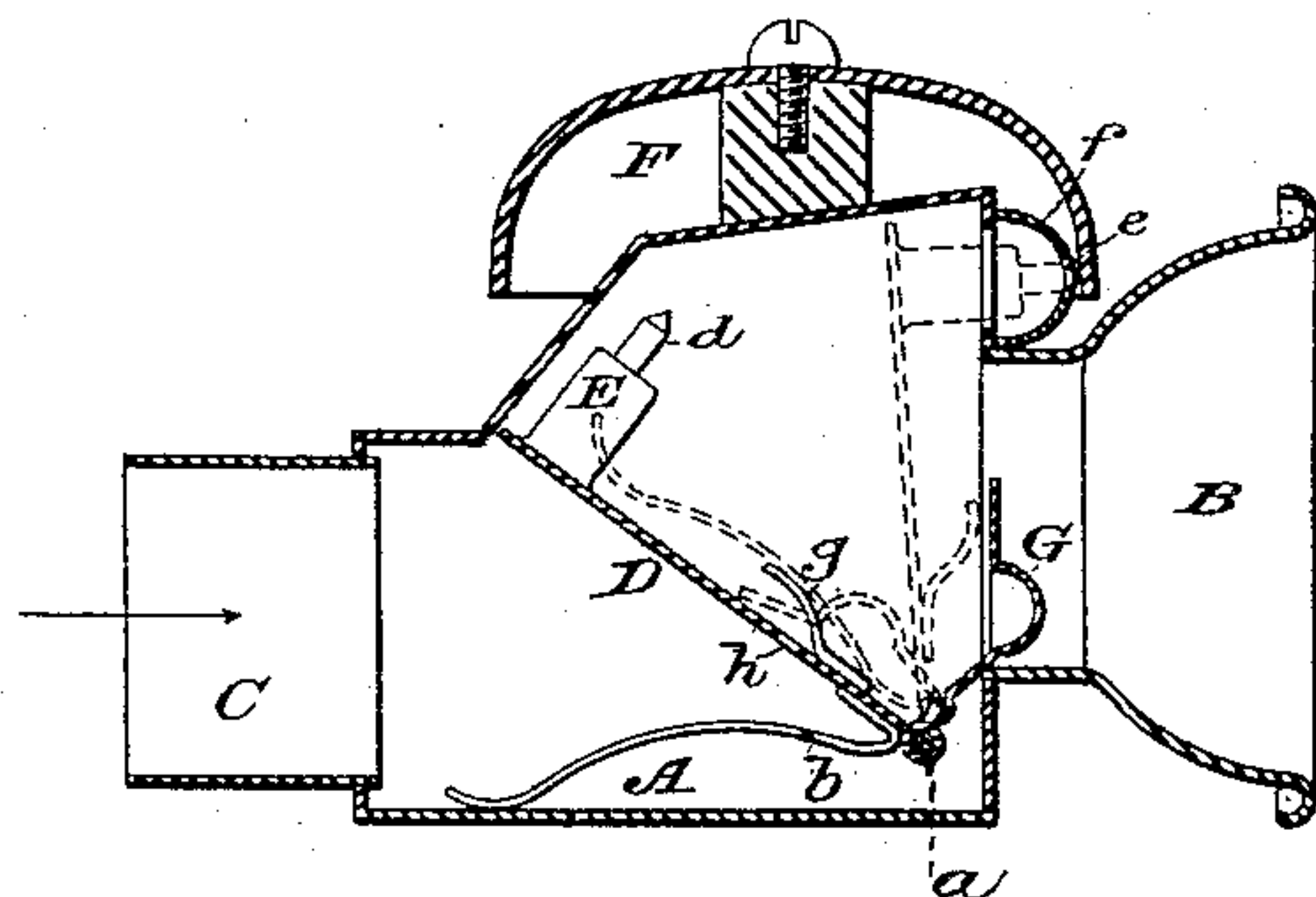


Fig. 2.

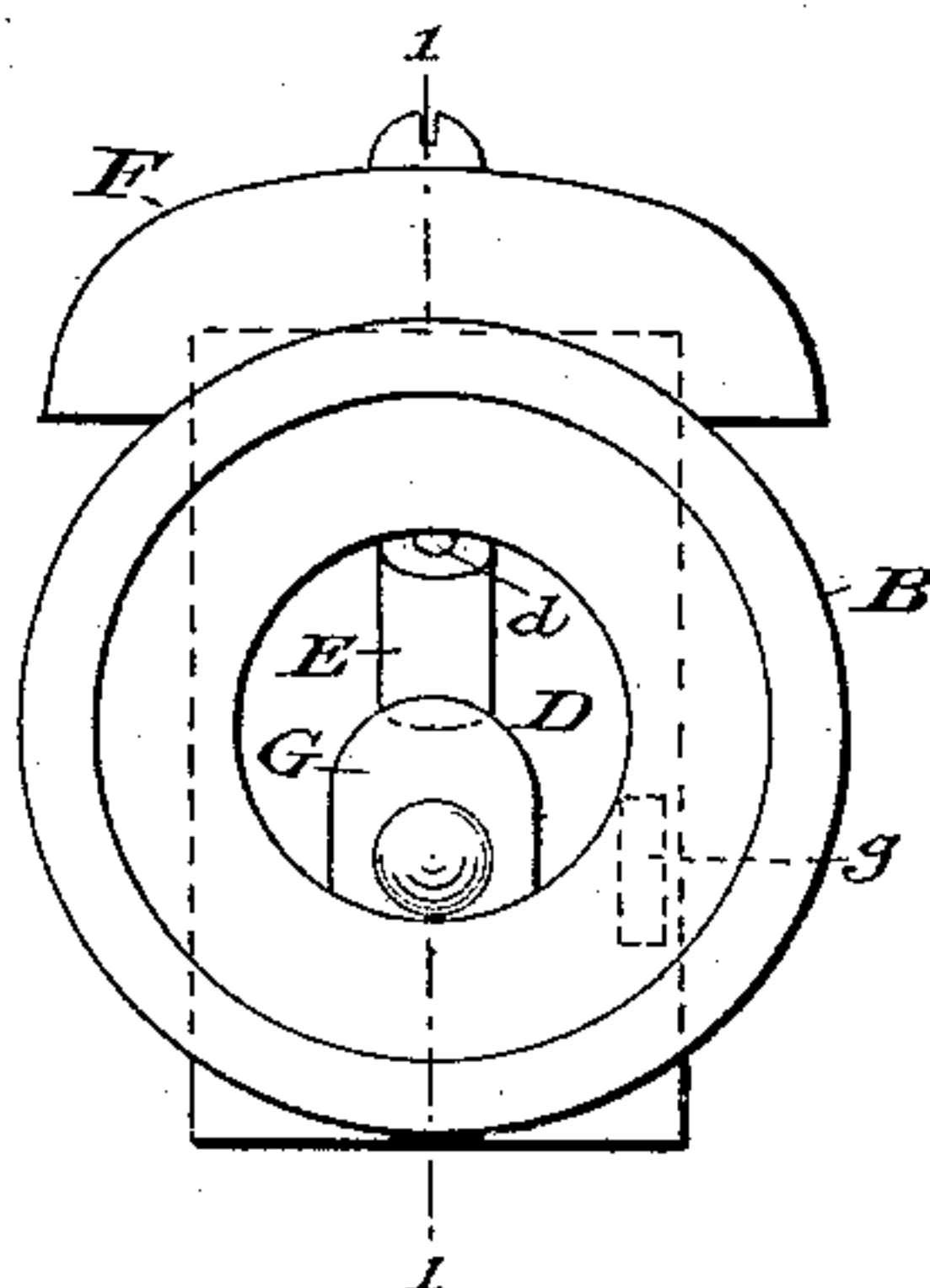
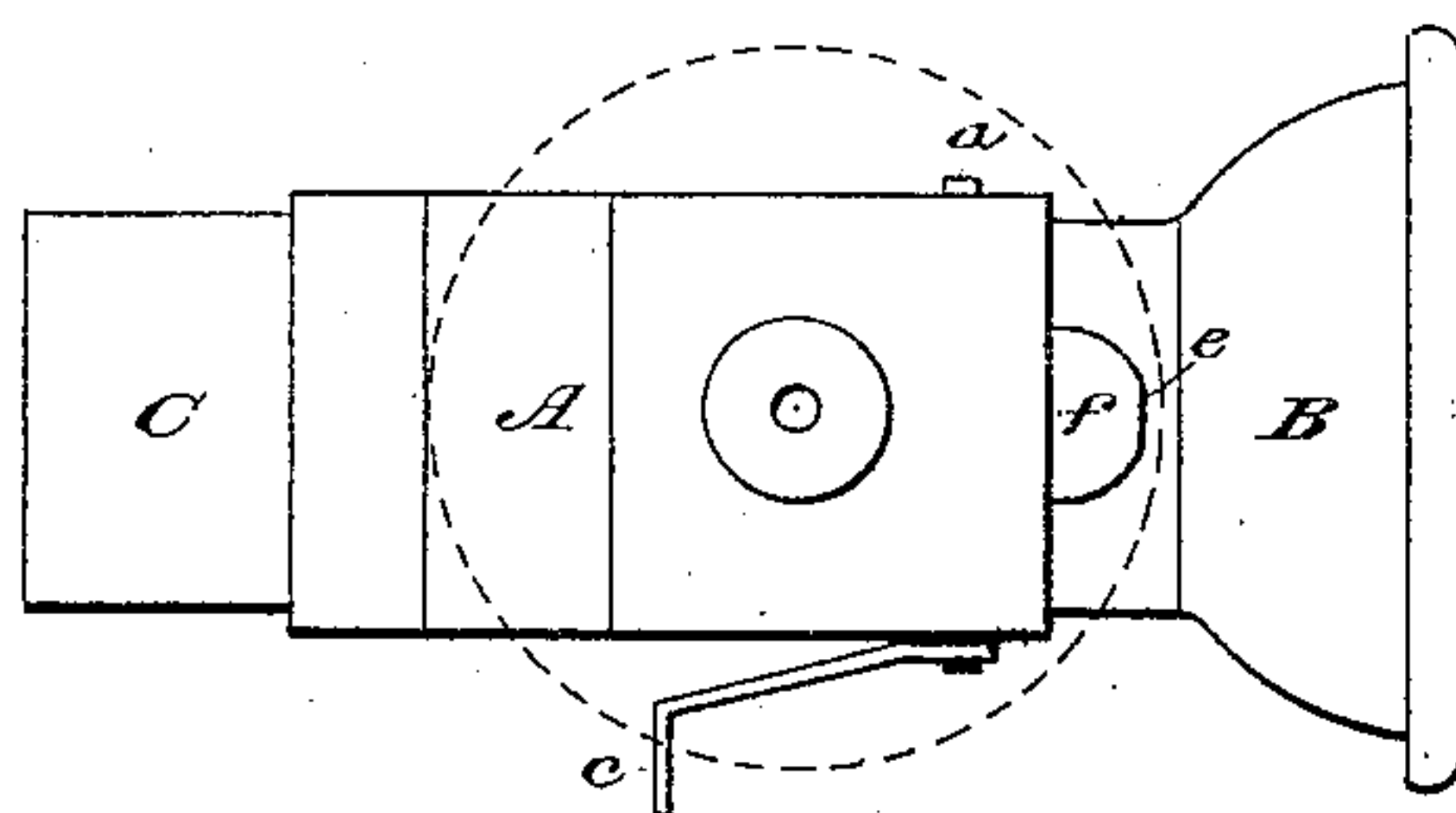


Fig. 3.



WITNESSES:

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INVENTOR:

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By his Attorneys,
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UNITED STATES PATENT OFFICE.

WILLIAM THOMAS, OF JERSEY CITY, NEW JERSEY.

PNEUMATIC ANNUNCIATOR.

SPECIFICATION forming part of Letters Patent No. 324,500, dated August 18, 1885.

Application filed June 19, 1884. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM THOMAS, a citizen of the United States, and a resident of Jersey City, Hudson county, New Jersey, have invented certain Improvements in Pneumatic Annunciators, of which the following is a specification.

My invention relates to that class of pneumatic annunciators wherein a gong or bell is struck by the action of a current of air through a tube on a hinged valve; and it is designed in the main to be applied to what are known as "speaking-tubes." Bells have been applied to these; but they usually have a whistle. The best bell speaking-tube annunciators heretofore made have consisted of a chamber near the mouth-piece, a pivoted valve swinging in said chamber, and a hammer exterior to the casing mounted on an arm radiating from the pivot of the valve, and striking the bell when the valve is deflected by a puff of air within the tube.

My improvements relate, in the main, to the mounting of the bell-hammer directly on the hinged valve, to the arrangement of the rim of the bell close to the casing of the mouth-piece, and to constructing the hammer with a slender striking point or tip, which passes through a correspondingly small hole in the casing in order to reach the bell. This construction avoids undue leakage of air at this hole.

It also relates to the construction of the casing of a rectangular form, whereby the valve may be soldered to the wire forming its hinge-axis previous to insertion, which latter is effected by springing the sides of the casing and then securing the ends and top of the casing afterward. The valve is also provided with a spring to retract the hammer after the bell is struck, so as to insure a clear tone, and with a spring on its rear or under side to form a stop for the valve and permit it to be turned down out of the way in speaking.

Another feature of the invention relates to the construction of the indicator, which will be fully set forth hereinafter.

In the drawings which serve to illustrate my invention, Figure 1 is a vertical longitudinal section taken on line 1 1 in Fig. 2. Fig. 2 is a front view. Fig. 3 is a plan, with the gong removed.

A represents what I term the "casing," which I make of thin metal, rectangular in form, the sides and bottom being in one piece and the top and ends in one piece, these being soldered together in the process of construction.

B is the ordinary flaring mouth-piece proper, which may be of thin metal, as shown, or of porcelain or other material. This is secured to the front of the casing in the usual way.

C is a tube secured to the rear of the casing, and which may connect with the ordinary speaking-tube, which has a mouth-piece on the other end, as usual in such annunciators.

D is a valve, which is hinged at its lower edge or portion on an axis, *a*, that has bearings in the sides of the casing. This valve stands normally at about the angle shown in Fig. 1, being supported on a spring, *b*, attached to the said valve, its free end bearing on the bottom of the casing. This spring allows the valve to be turned down nearly horizontal, when required, by means of the crank *c* (see Fig. 3) on the projecting end of axis *a*.

On the face of the valve D is mounted a hammer, E, provided with a pointed or slender tip, *d*, which, when the valve is thrown forward by a current of air—as a blast of the breath—through the speaking-tube, passes through a small aperture, *e*, in a bulb, *f*, formed on the front of the casing, and strikes sharply a gong or bell, F, mounted on the top of the casing. A light spring, *g*, preferably mounted on the valve, impinges against the front of the casing when the valve is thrown forward, and the elastic reaction of this spring throws the valve back and prevents the hammer from remaining in contact with the bell. The object in bringing the rim of the bell up close to the aperture *e* is to prevent, as far as may be, the escape or waste of air thereat while blowing in the mouth-piece B in order to sound the annunciator at the opposite end of the tube. The valve plays snugly between the walls of the casing, and the top of the casing is so shaped that the upper end of the valve may play close to it in its movement. As the casing is angular in plan, and the gong employed circular, I employ the bulbous projection *f*, in order to bring the hole *e* close to the gong.

G is the indicator to enable one to tell which

of several annunciators has been sounded. Instead of placing this indicator outside of the casing, as heretofore, I arrange it inside, so that when the bell is rung it appears in the mouth-piece. This may be hinged on an axis soldered to the valve, as shown, or on an independent axis. When the valve is thrown forward and flies back, this indicator is thrown forward and remains standing, as shown, until pushed or blown back so as to rest on the valve in its normal position. The upright position of the indicator is assured by so arranging its axis with reference to the angle of the casing it rests against that it will lean forward beyond the perpendicular, as shown in Fig. 1. In order that the indicator may not fall back by the rebound when the valve D falls, I usually provide the valve with a hole, *h*, behind the indicator, through which part of the jet or current of air will pass and act upon the back of the indicator and keep it up to its place.

Any kind of gong or bell may be employed, but for compactness I prefer that shown. My construction allows of great compactness, and its simplicity permits of considerable economy in the manufacture over annunciators of this kind as ordinarily constructed.

The spring *b* might be mounted on the casing instead of on the valve, but I prefer to mount it on the valve.

The top of the casing might be curved to conform to the swing of the valve, but for convenience in mounting the gong I prefer the form shown. This also allows the superfluous air, when a strong blow is given, to pass over the valve, thus ringing the bell more uniformly.

A knob may be substituted for the crank *c*.

Having thus described my invention, I claim—

1. A pneumatic annunciator comprising a casing, a gong or bell mounted on the same, an aperture in the casing adjacent to said bell, a pivoted valve arranged within the casing, and a hammer mounted on the free end of said valve and adapted, when the valve is thrown forward, to strike the bell through said aperture, combined and operating substantially as set forth.

2. A pneumatic annunciator comprising a casing, a gong or bell mounted thereon, an aperture in the casing adjacent to said bell, a

pivoted valve arranged within the casing, a hammer mounted on the free end of said valve and adapted to strike the bell through said aperture, and a spring, *g*, adapted to throw back the valve and hammer after the bell is struck, all combined and arranged to operate substantially as set forth.

3. In a pneumatic annunciator, the combination, with the casing provided with a small aperture, *e*, for the hammer to strike through, of the gong or bell *F*, mounted on the casing with its rim in close proximity to the aperture *e*, and the valve *D*, hinged in the casing and provided with the pointed hammer *E*, all arranged to operate substantially as set forth.

4. In an annunciator, the combination of the casing provided with a mouth piece proper, the valve *E*, hinged within the casing, and the indicator hinged within the casing and adapted to come in contact with the valve *D* and to be thrown forward by the forward movement thereof, whereby said indicator is caused to show itself in the mouth-piece, substantially as set forth.

5. In a pneumatic annunciator, the combination, with the casing, of the valve hinged at its lower edge to said casing and arranged within the same, the spring *b*, arranged to support the valve in its normal inclined position, the crank *c* on the axis of the valve for depressing the latter, the hammer, and the gong, all arranged to operate substantially as set forth.

6. In a pneumatic annunciator, the combination, with the casing provided with an aperture for the bell-hammer to strike through, of the bell mounted on the casing, the valve hinged in the casing and at its lower edge, the hammer mounted on the free end of said valve, an indicator, *G*, hinged at its lower edge inside the casing and adapted, as shown and described, to be thrown forward by the forward movement of the valve, and an air-hole, *h*, in the valve, substantially as set forth.

In witness whereof I have hereunto signed my name in the presence of two subscribing witnesses.

WILLIAM THOMAS.

Witnesses:

HENRY CONNETT,
ARTHUR C. FRASER.