

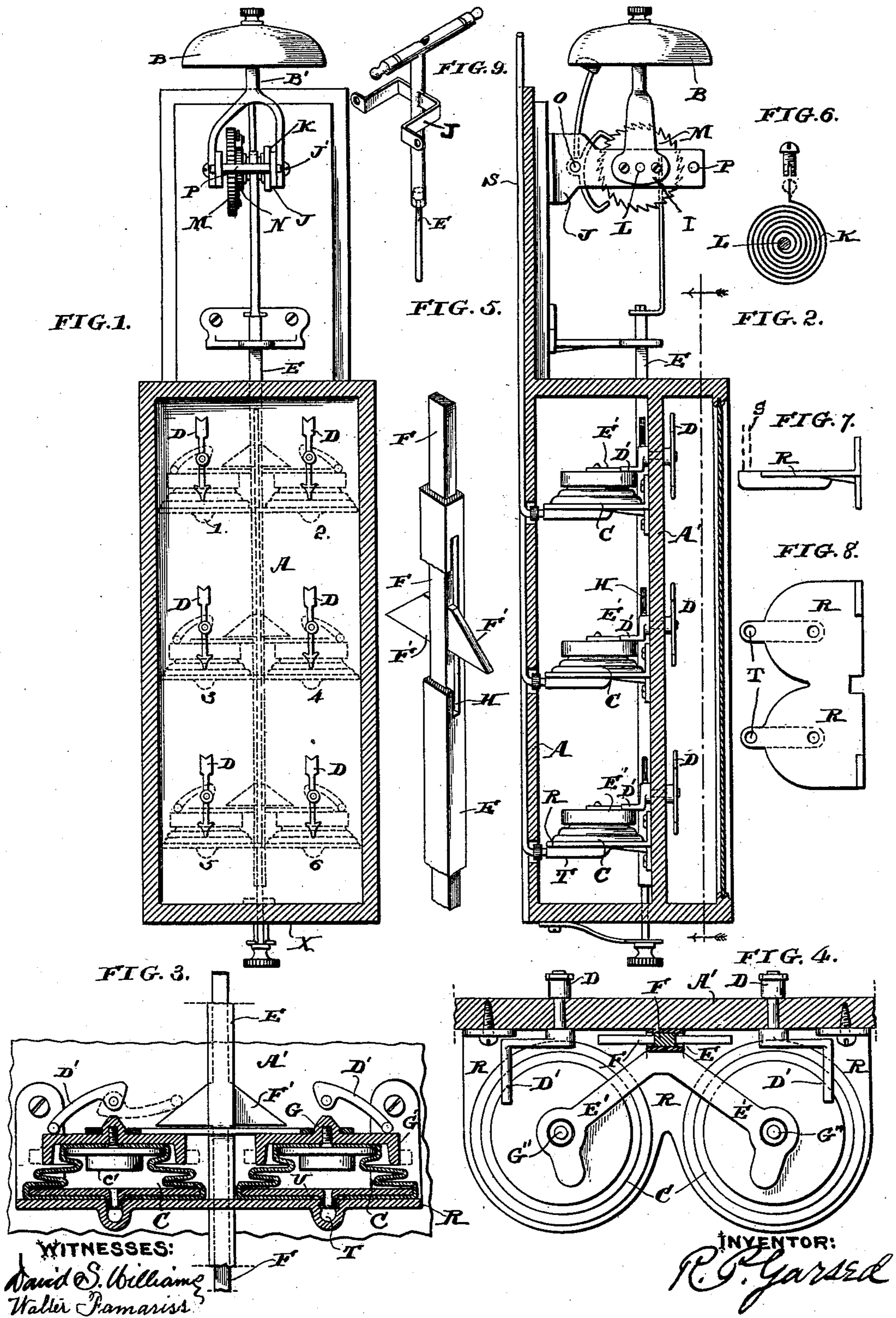
(No Model.)

2 Sheets—Sheet 1.

R. P. GARSED.
ANNUNCIATOR.

No. 428,810.

Patented May 27, 1890.



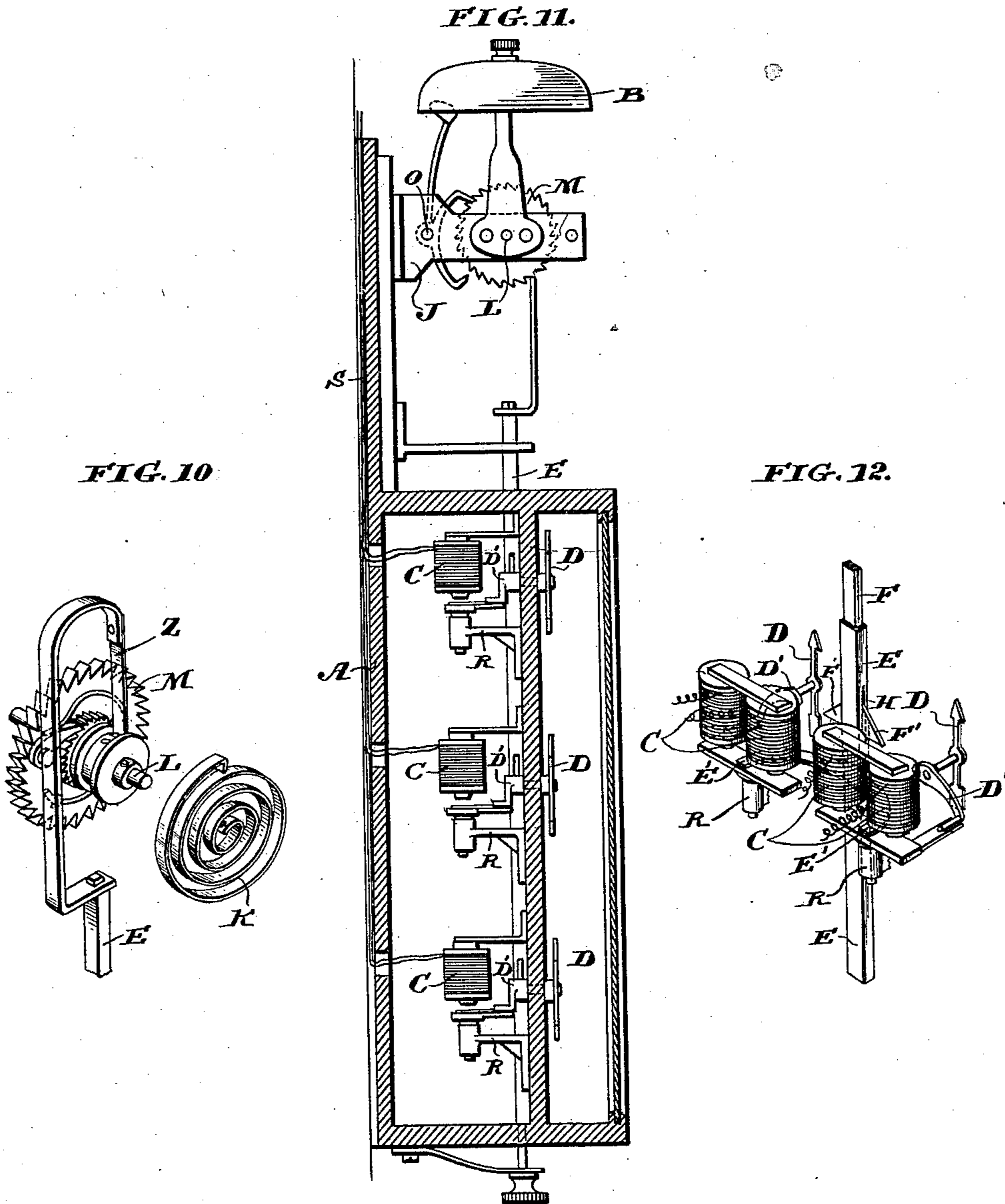
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WITNESSES:

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UNITED STATES PATENT OFFICE.

ROBERT P. GARSED, OF NORRISTOWN, PENNSYLVANIA.

ANNUNCIATOR.

SPECIFICATION forming part of Letters Patent No. 428,810, dated May 27, 1890.

Application filed January 25, 1890. Serial No. 338,140. (No model.)

To all whom it may concern:

Be it known that I, ROBERT P. GARSED, a citizen of the United States, residing at Norristown, in the county of Montgomery and State of Pennsylvania, have invented a new and useful Improvement in Annunciators, of which the following is a specification, reference being had to the accompanying drawings to more clearly illustrate the invention.

The object of my invention is to produce an annunciator that can be worked either pneumatically, electrically, or otherwise, and with as few and as easily-worked parts as possible, and to simplify its recovering and indicating mechanism, which heretofore has been more or less complicated as well as cumbersome. It further has for its object improvements in its alarm-working mechanism.

Figure 1 represents a front view of the device; Fig. 2, a side view of the same, showing the inside of the case; Fig. 3, a sectional view of the bellows and their collapsing weights, as well as their supporting-brackets. Fig. 4 is a top view of a section of the front of the case, showing the lifting-rods with their projecting arms and the index-cranks resting on the bellows. Fig. 5 is a view of the lifting-rods with a section of outer one removed, showing the position of the inner one. Fig. 6 shows a screw which when in place supports gong-staff and holds as well the end of coil-spring shown beneath it. Fig. 7 is a side view of the bellows-bracket used, and Fig. 8 a top view of the same. Fig. 9 shows a modification of the alarm. Fig. 10 shows the flexible band Z, used for revolving the escapement-wheel shaft; and Fig. 11 is a sectional elevation showing magnets substituted for bellows, and Fig. 12 is a detached perspective view showing magnets and their connecting parts. In these means for operating the device electrically, (shown in Figs. 11 and 12,) the actuating element or magnet C corresponds to the bellows C, and the electric-fluid conductors S, leading to within the case, correspond to the air-conductors S.

Referring to the drawings, A is an annunciator-case, with an upwardly-projecting back supporting alarm mechanism, and a face A' supporting the indices with their actuating machinery.

B is a gong adapted to sound upon the influx of air into any of the bellows C.

D are the indices adapted to move in the operation of the device, and having cranks or ends D' passing to the other side of face A'.

E is a hollow lifting-rod with projecting or engaging arms E'.

F is an index lifting or restoring rod having projecting or engaging arms F'.

C' is an inner bellows-collapsing weight, with a central threaded stem extending upwardly through the top of the bellows, and holds the outer collapsing-weight G in position, as well as making an air-tight connection. The outer weight has a downwardly-projecting rim G' and an upwardly-extending center G'', which tends to guide the bellows in its motions by passing through the openings in the projecting arms E' of the lifting or alarm-actuating rod. This interlocking is further advantageous, as when these arms have been raised by any one bellows they in turn find their central position when descending upon the other bellows by such centers G'' being tapered.

H is a slot, and when right and left indices are used is made through both sides of the outer lifting-rod.

B' is a bifurcated gong-staff and equalizes the weight of gong B upon the brackets J. It has feet I on either side held in position to the brackets by screws, as shown, the one screw on the right being adapted to hold one end of spring K in position as well. The other or inner end of said spring being fastened to shaft L causes it to return to its normal position after it has been revolved by the upward motion of the lifting-rod E, at the upper end of which is fastened the end of a flexible band Z, whose other end is attached to shaft L, with its intermediate part wound around said shaft. The escapement-wheel M, with its pawl and ratchet-wheel N, being connected to work together in turning one way, and being also on shaft L and gearing with the pallets, causes the attached hammer to vibrate and sound the gong in the operation of the device. Further explanation of the working of any of the bell-ringing apparatus is unnecessary, as part of it is well known. The feet I I of staff B' being at angles with said staff hold it better to a fixed position necessary for accurate op-

eration of the gong, the bifurcated staff being also essential to give a fixed position to the brackets J, that they may not spring inwardly or outwardly and affect the movements of shafts L and O, the stud P also contributing to this result.

The cranks D' of the indices, it will be seen, have weight on the other side of their pivots opposite their bellows-engaging end, that they may by a small rise of the bellows act by gravity in completing their full motion.

Rare are the bellows-supporting brackets, which will be seen to be made in a space-saving and economical way, obviating any bend in the air-supplying pipes S, with which they are connected, such bend of pipe being objectionable, and when made underneath the brackets taking up much valuable room, as well as being liable to be injured in adjusting the device.

T are the air-channels of the brackets, and U are the flanged couplings of the bellows for connection of brackets, as shown in Fig. 3. They are first inserted through an opening in bottom of bellows and then screwed into the brackets, the center of coupling having an opening for passage of air.

The weight G, with downwardly-projecting rim, if not heavy enough, may be re-enforced, as shown in dotted lines in Fig. 3. The downwardly-projecting rim, besides saving vertical space, renders the bellows less liable to unsteadiness of motion when rising or falling, its collapsion also being best accomplished by the weight bearing as well upon a broader fold than the top. The weights when rising and engaging the index-cranks are also less liable to tilt.

The spring shown in Fig. 6 may be made with an eye on its end, as shown by dotted lines, to slip over end of the screw; otherwise its end may be flat and slip within the slot.

The operation of the pneumatic device is as follows: Air being forced through any of the conductors or pipes S in any of the usual ways by mouth-piece or pump enters through the channels T of the brackets R to the inflatable body or bellows C, and inflating the same causes the crank D' to rise and move the index D to a desired position, thus indicating the source of operation. The lifting-rod E, rising simultaneously with the movement of indices, through the medium of its projecting arm E' engaging the top of the bellows, causes the alarm to sound, as before described, and so calls the attention of a proper person, the rod E returning to its first position as well by gravity as by the operation of spring K. The crank D' having been moved to a position indicated by dotted lines on the left side of Fig. 3, the index is returned to its normal position by raising the index lifting or restoring rod by pressing upwardly upon the knob at its lower end beneath the bottom of case A. The projecting arms of this restoring-rod will then engage and return to their normal position any cranks

that have been operated. Instead of projecting laterally, these crank-moving arms may extend, if desired, through the face A' and engage directly the indices. The inner collapsing-weights C' occupy room otherwise unused, and hence are advantageous in contributing to the collapsion of bellows after they have been made to rise.

In practice the bellows-brackets can be placed much closer vertically than is shown in the drawings.

It will be seen that the two rods E and F, besides having independent movements, can be made interchangeable, the outer rod being suited to hold the projecting arms to move the indices, and the inner rod being suited to hold the projections to engage the tops of bellows. The number of the indices can be increased or lessened, as desired. It will also be seen that when it is intended to have the rising of rod E to cause the whistle to sound, instead of ringing the bell, its upper end may be made in form to force air through the whistle-tube, as may be seen in Fig. 9, said whistle, with its supporting-brackets J, taking the place of the bell mechanism with its supporting-brackets J.

I do not confine myself to the exact mechanism as herein set out, as there are other constructions of an annunciator, either pneumatically or electrically operated, that can be made in which the tubular rod E and its supplemental rod F can be used.

Should at any time too great force be brought within the bellows by sudden or too great an influx of air, the bellows can be made self-relieving of pressure by putting a small hole between the two upper or smaller folds, as during the rise of a tapering bellows its folds move in succession, and not simultaneously, the largest one moving first and the others following, to the smallest, and so the hole would be kept closed at the inner edge of these folds till after the bellows had performed its other functions.

The brackets R (shown in Figs. 7 and 8) are the ones used in operating the device.

The operation of the device by electricity needs scarce any description, as when the electric fluid in any of the well-known ways, through the medium of the wires S, is made to cause the magnet C to attract an arm of the lifting-rod E such rod will rise with the result as before stated.

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

1. The combination, in an annunciator, of a case with an alarm attached thereto, and a pivoted index and a vertical moving hollow lifting-rod supported upon a face of said frame, said hollow lifting-rod having a slot in its side, and a projecting arm E', by which it is actuated, a supplemental rod F, adapted to work within such hollow rod and having an arm F', passing through and adapted to work within such slot, said lifting-rod hav-

ing independent motions, the one upon its one movement adapted to sound the alarm, and the other by its engaging-arm being adapted to restore said index to its normal position, and operative means, substantially as and for the purposes set forth.

2. In an annunciator, a supporting-frame with an alarm and an index, a bracket fastened to a face of said frame, an air-supplying pipe leading to a bellows supported on said bracket, a weight with a downwardly-projecting rim situated on said bellows, a lifting-rod E, adapted to actuate said alarm and having a projecting arm E', suited to bear upon the bellows, and interlocking with the same is guided with it in its motions, and operative means, substantially as and for the purposes set forth.

3. The combination, in an annunciator, of a supporting-frame, an air-conveying pipe leading to within said frame, an attached alarm and an index, a bellows adapted to actuate said alarm and index, being held by a bracket fastened to a face of said frame, said bracket having parts integral with it through which pass channels, whereby connection is made, substantially as shown, with bellows C, through a flanged coupling-piece, to said air-conveying pipe, the bellows having an inner collapsing-weight C', held in place by a connecting-piece passing through the top of the bellows, the parts operating substantially as described, substantially as and for the purposes set forth.

4. The combination, in an annunciator, of a supporting-frame with an alarm attached thereto, an air-pipe leading to a bellows adapted to engage a vertically-moving actuating-rod with arms extending therefrom, an index with an arrow or other indicator on its outer end and a crank on its inner end so formed as

to bear upon the top of the bellows and to tilt when said bellows is operated, a vertically-moving restoring-rod with projecting arms adapted to engage said index and move it to its normal position upon the operation of the device, and operative means, substantially as and for the purposes set forth.

5. In an annunciator, the combination of a frame supporting mechanism consisting of a gong held by staff B', said staff being bifurcated, with feet to hold it to brackets J, a shaft L, journaled in said brackets and holding a coil-spring K, an escapement-wheel M, with its ratchet-wheel, and having a flexible band Z wound round and at one end fastened to it, the pallet-shaft O, with its pallets and hammer, a screw adapted to hold the end of spring K as well as support staff B', the lifting-rod E, with one end of flexible band attached to it, and operative means, substantially as and for the purposes set forth.

6. The combination, in an annunciator, of a supporting-frame with an alarm and an index attached thereto, a conductor S leading to and connected with said frame, and serving as a medium to actuate both the alarm and index, said index formed at its engaging part with a crank or projection and having a pivot holding it to said frame, and further made as to have its weight so arranged with respect to its pivot that gravity becomes a medium, in conjunction with its first actuating element or bellows C, in causing it to perform its functions, and the two vertical lifting-rods, operating substantially as described, substantially as and for the purposes set forth.

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Witnesses:

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FRANK B. GARSED.