

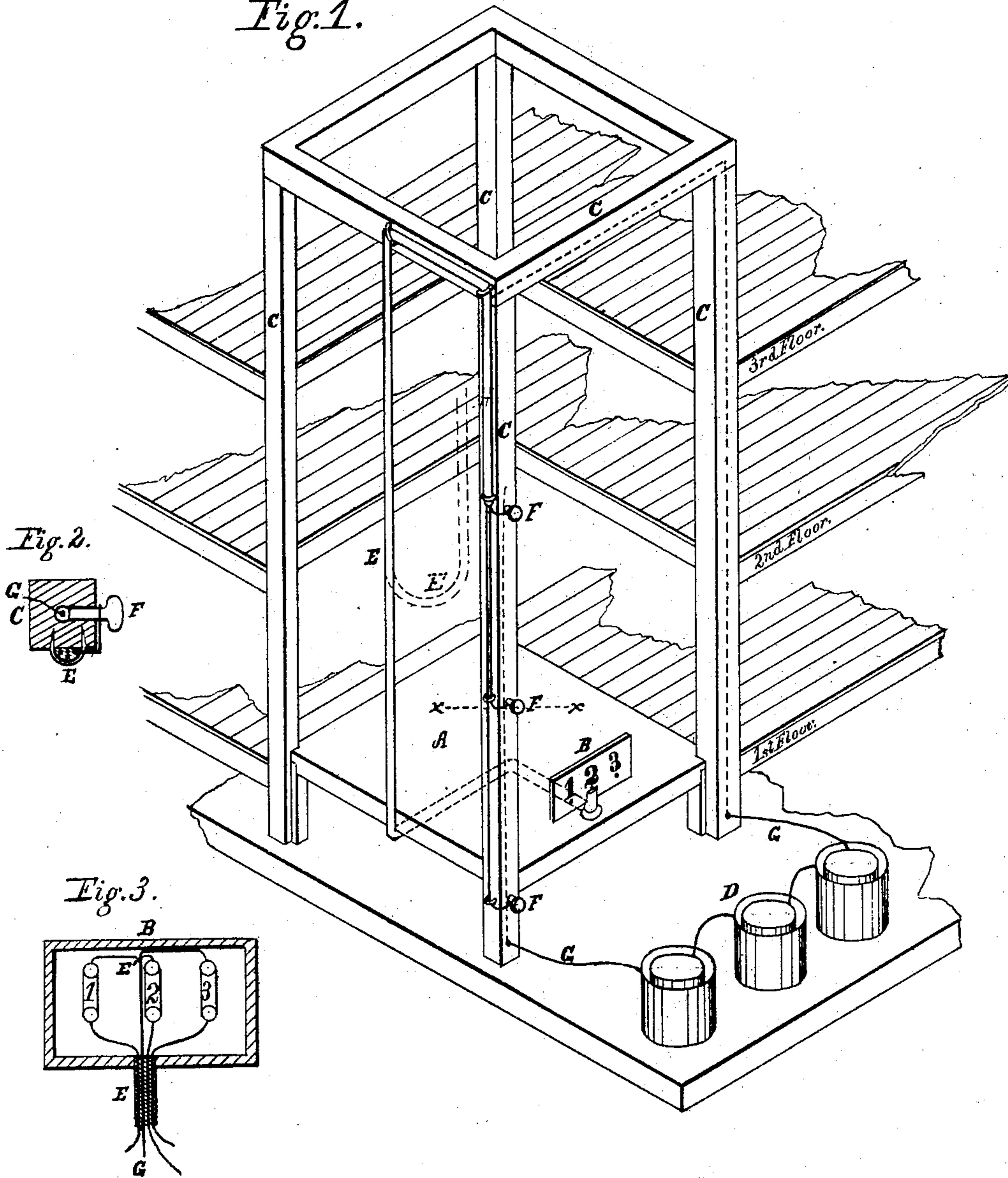
E. GRAY.

ELECTRIC ANNUNCIATOR FOR ELEVATORS.

No. 172,993.

Patented Feb. 1, 1876.

Fig. 1.



WITNESSES_

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Fig. 4.

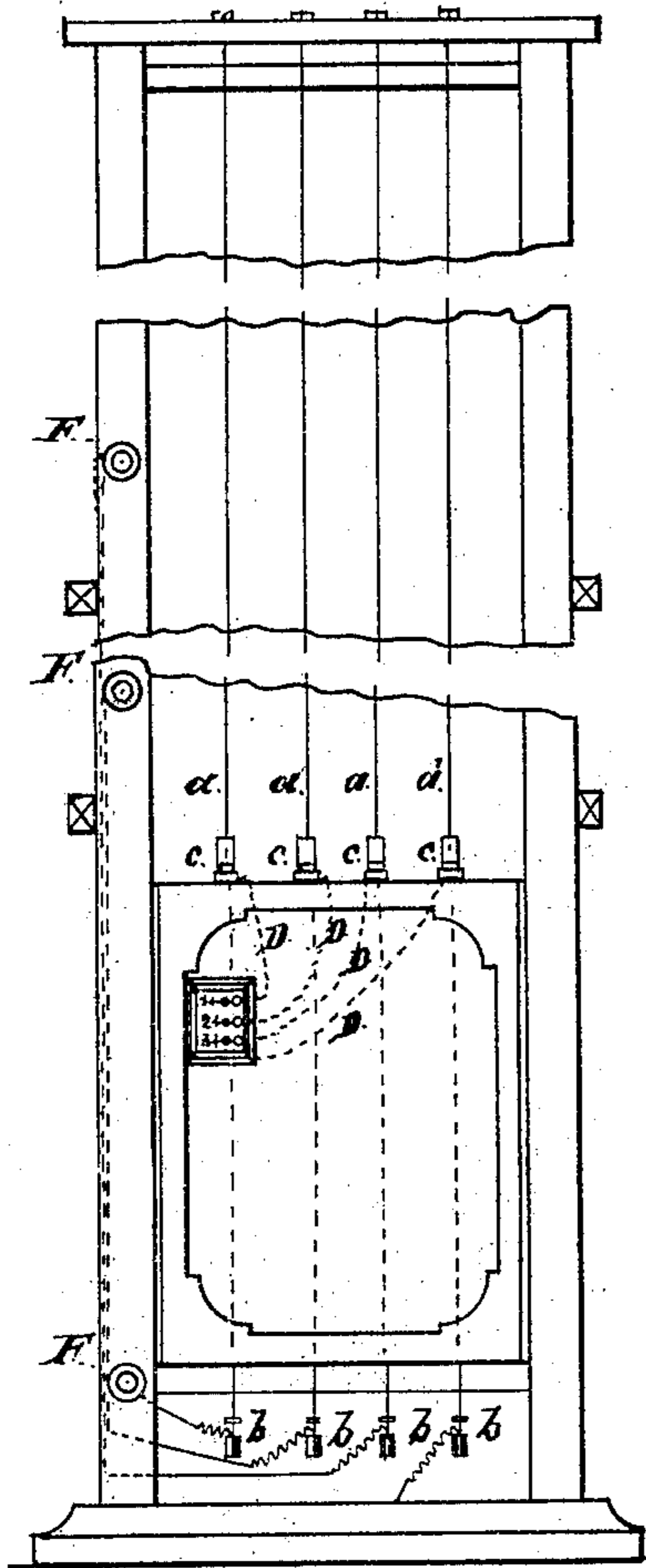


Fig. 5.

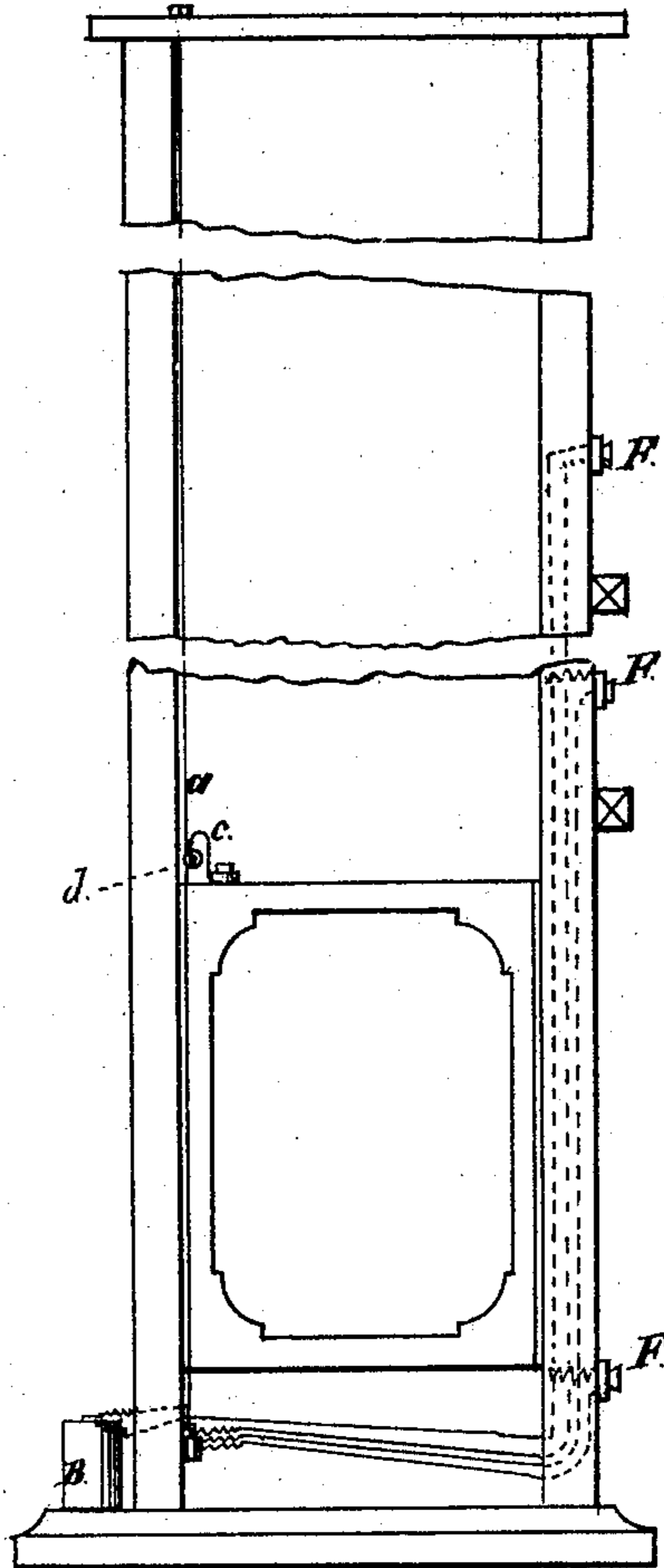
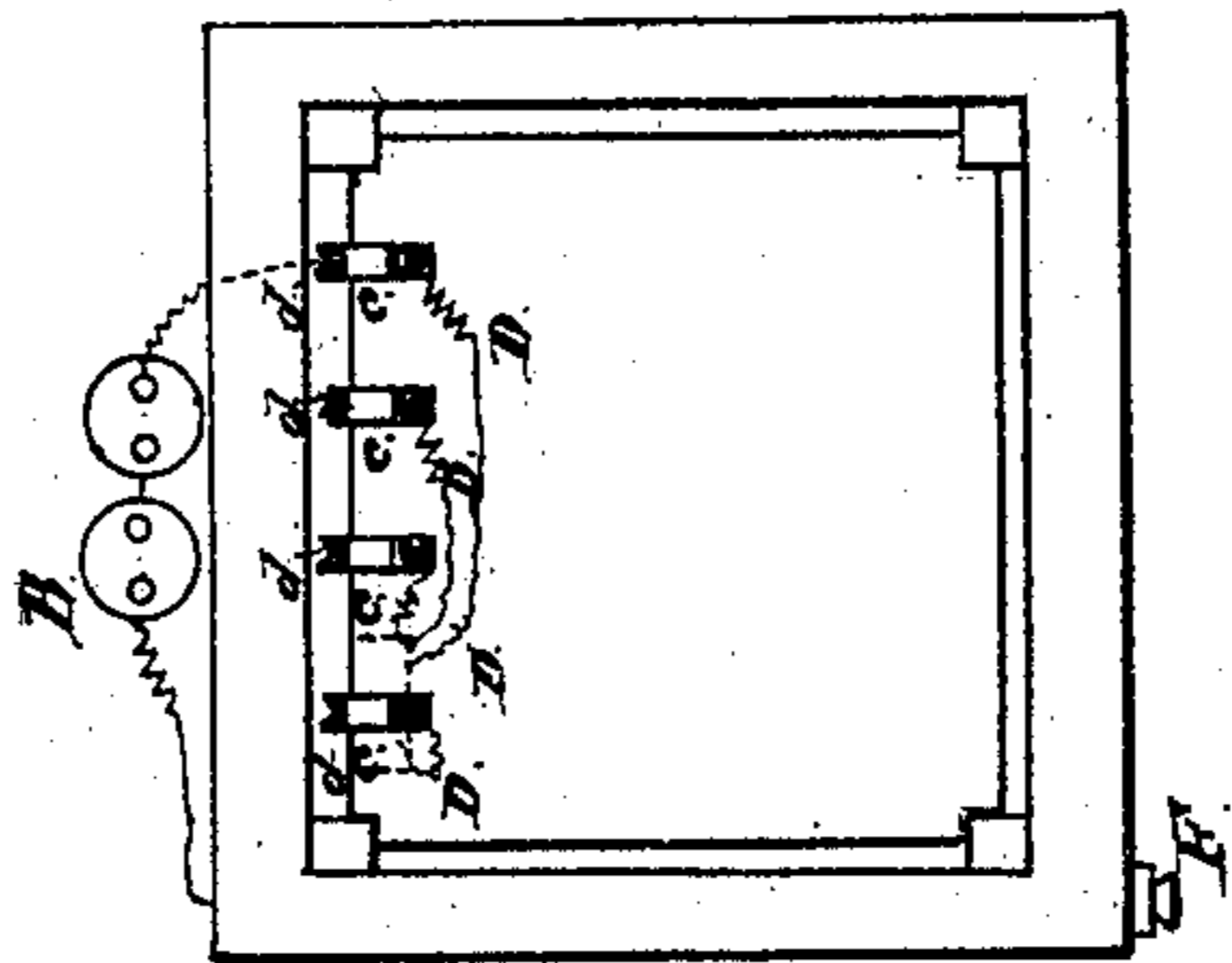


Fig. 6.



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UNITED STATES PATENT OFFICE.

ELISHA GRAY, OF CHICAGO, ILLINOIS, ASSIGNOR TO THE WESTERN ELECTRIC MANUFACTURING COMPANY, OF SAME PLACE.

IMPROVEMENT IN ELECTRIC ANNUNCIATORS FOR ELEVATORS.

Specification forming part of Letters Patent No. **172,993**, dated February 1, 1876; application filed February 3, 1873.

To all whom it may concern:

Be it known that I, ELISHA GRAY, of Chicago, in the county of Cook and State of Illinois, have invented a new, useful, and Improved Electric Annunciator or indicator for freight and passenger elevators in hotels and other buildings, of which invention the following is a full, clear, and exact description, which will enable others skilled in the art to which my invention appertains to make and use the same, reference being had to the accompanying drawings forming a part hereof, and in which—

Figure 1 represents a perspective view of an elevator, provided with an annunciator embodying my invention; Fig. 2, a horizontal section through one of the elevator-posts in the plane of the line *x x*; Fig. 3, a vertical section of the indicator; Figs. 4, 5, and 6, front, side, and top views, respectively, of an electrical signaling apparatus and elevator, showing a modification of my invention, as represented in the figures preceding.

The object of my invention is to render an electric annunciator or indicator useful in connection with freight and passenger elevators in hotels and other buildings, so that the person having charge of the elevator may be called to each of the several floors of the building at any time by means of the annunciator, whatever may be the position of the elevator, and whether it is at rest or in motion; and my invention consists in providing the elevator with an electric annunciator or indicator, and in rendering the latter capable of accomplishing the objects above set forth.

In the drawing, A represents the car or platform of an elevator of the class referred to. B represents an ordinary annunciator, such as is employed in hotels for the purpose of indicating calls from the various rooms. The annunciator is arranged on the car or platform of the elevator, so that its announcements may be readily ascertained by the person having charge of the elevator. C C are posts or ways, along which the elevator rides. D is the battery. E is a flexible cable of insulated wires. The wires constituting the flexible cable are one more in number than the number of floors to be indicated by the

annunciator, the extra wire being a battery-wire. The cable is suspended from the highest floor reached by the elevator, and arranged near the elevator-“well.” The other end of the cable is attached to the elevator car or platform, and the cable is long enough to allow the elevator to descend to its lowest position in the building. Each of the cable-wires, except the battery-wire, is attached to one end of a corresponding magnet in the indicator, as represented in Fig. 3. The other ends of the magnets are attached to the battery-wire, as represented at E'. F F are ordinary room-keys or circuit-closers, and each floor is provided with one of these keys, as shown in Fig. 1. G is the battery-wire. The course of the battery-wire is such that the keys F F, when depressed, will be brought into contact with it, and it may terminate after reaching all the keys. The opposite end of the battery-wire is carried to the upper end of the cable, continuous along the latter, and terminates in the annunciator, as shown in Fig. 3. Each cable-wire, except the battery-wire, is attached to a corresponding key, F, as shown in Fig. 1.

The circuit is as follows: Passing along near the keys F F to the battery, and through the latter along any suitable course to the upper part of the cable; from thence through the cable to one end of the magnets, and through the latter and a corresponding cable-wire to a corresponding key, F. This circuit is closed whenever one of the keys F F is depressed, and the person in charge of the elevator is thereby called to the floor on which the depressed key is arranged, and this call may be made at any time, whatever the position of the elevator may be, for reason that the circuit is not broken by the movement of the elevator, owing to the flexibility of the cable, through which the circuit-wires pass.

In the modification of my invention, illustrated by Figs. 4, 5, and 6 of the drawings, electrical communication between the battery and annunciator within the elevator-car is maintained by means of a sliding connection instead of the folding one described above.

A series of wires, *a*, are suspended from the top and at one side of the elevator-well, which are retained in position and kept taut by

weights *b* attached to their lower ends at the bottom of the well. Each one of these wires is connected at its lower end to one pole of the battery B, as shown in Figs. 4 and 6. Another wire, *a'*, is arranged in the same series, but at its lower end is connected to the other pole of the battery B. Upon the top of the car A are placed springs *c*, which are rigidly attached to the car in any suitable manner, and carry upon their upper and free ends small metallic pulleys or rollers *d*, arranged so that each one of these rollers will be in contact with one of the wires *a a'*. Each one of these metallic springs is also connected by wires D to a magnet in the annunciator. Signal-keys F are arranged upon each floor, as heretofore described, and from each key two wires are run, one connecting with the lower end of one of the wires *a*, and the other connecting with the lower end of the wire *a'*.

It will be seen from this description that so long as the pulleys *d* are in contact with the wires *a a'*, whenever one of the floor-keys F is depressed an electrical circuit is imme-

diately formed, and a signal is produced at the annunciator within the car. The springs *c* are slightly compressed, so as to operate to keep the rollers *d* continually pressed against the wires *a a'* as the car A moves up and down the well, and therefore at whatever point the car may be upon depressing the signal-key on any floor an electrical circuit will be closed, and a signal given at the annunciator.

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

The combination of a movable elevator-car, an annunciator attached thereto and moving therewith, circuit closing or breaking signal keys on different floors, respectively, of a building and mechanism, whereby an electric circuit is maintained between the signal-keys and the annunciator, without interruption by the movement of the car.

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Witnesses:

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