

(No Model.)

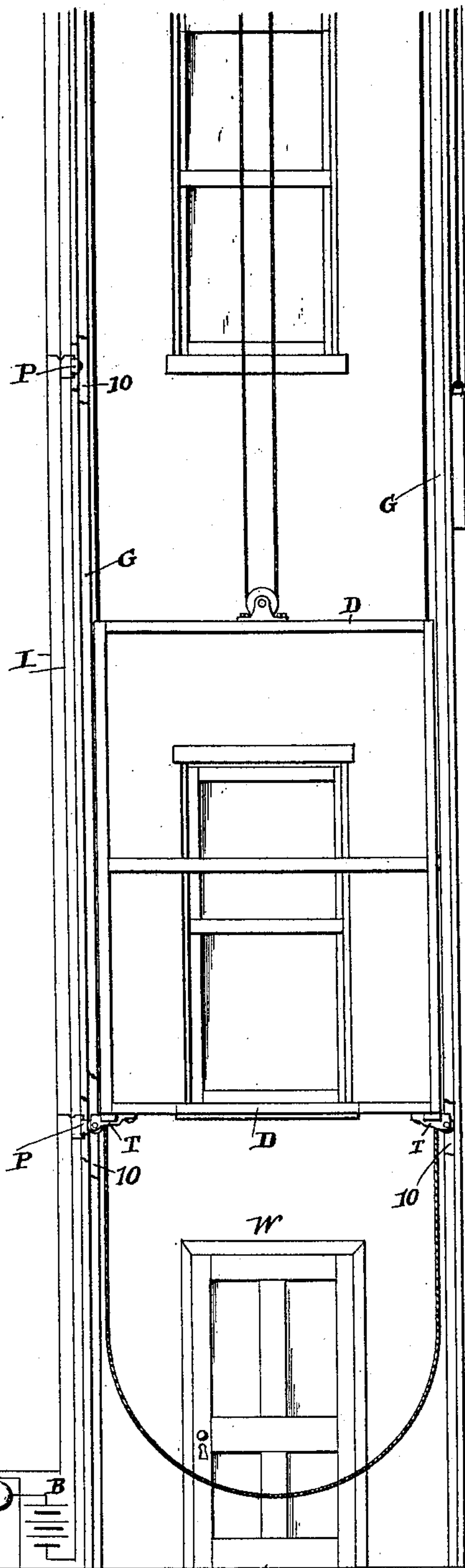
2 Sheets—Sheet 1.

F. J. ZAHNER.  
DUMB WAITER SIGNAL.

No. 467,073.

Patented Jan. 12, 1892.

FIG. 1.



Witnesses

Inventor

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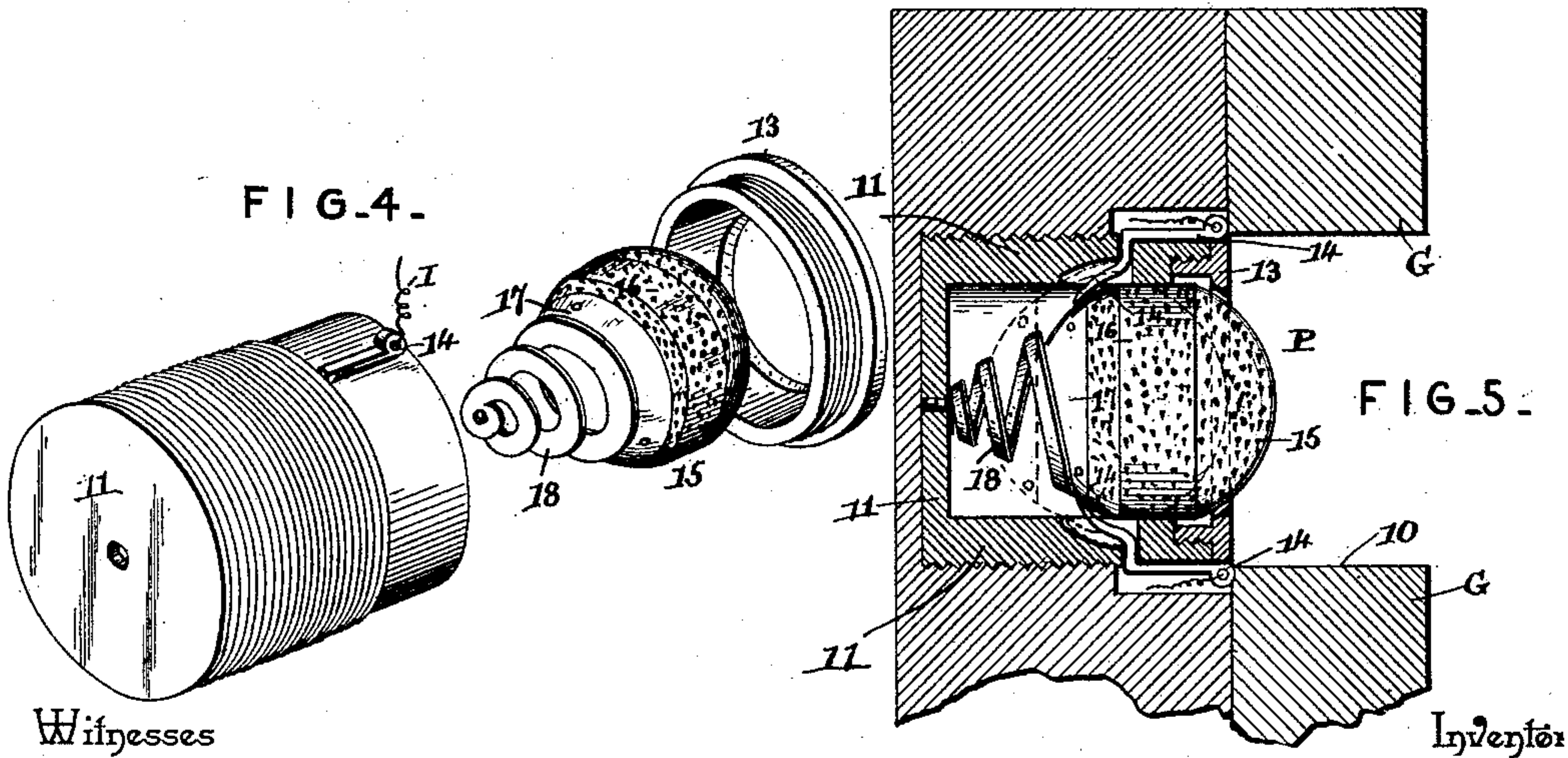
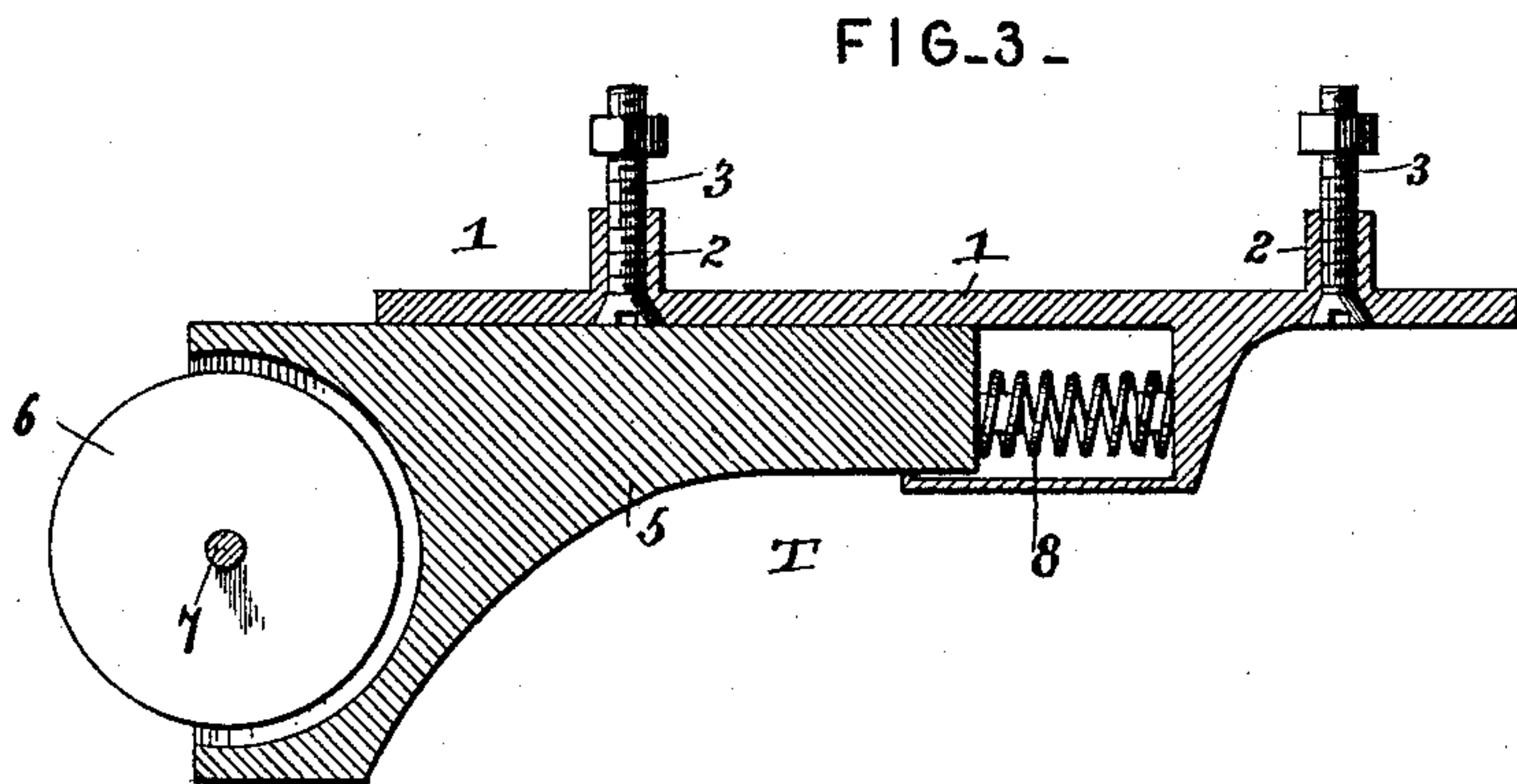
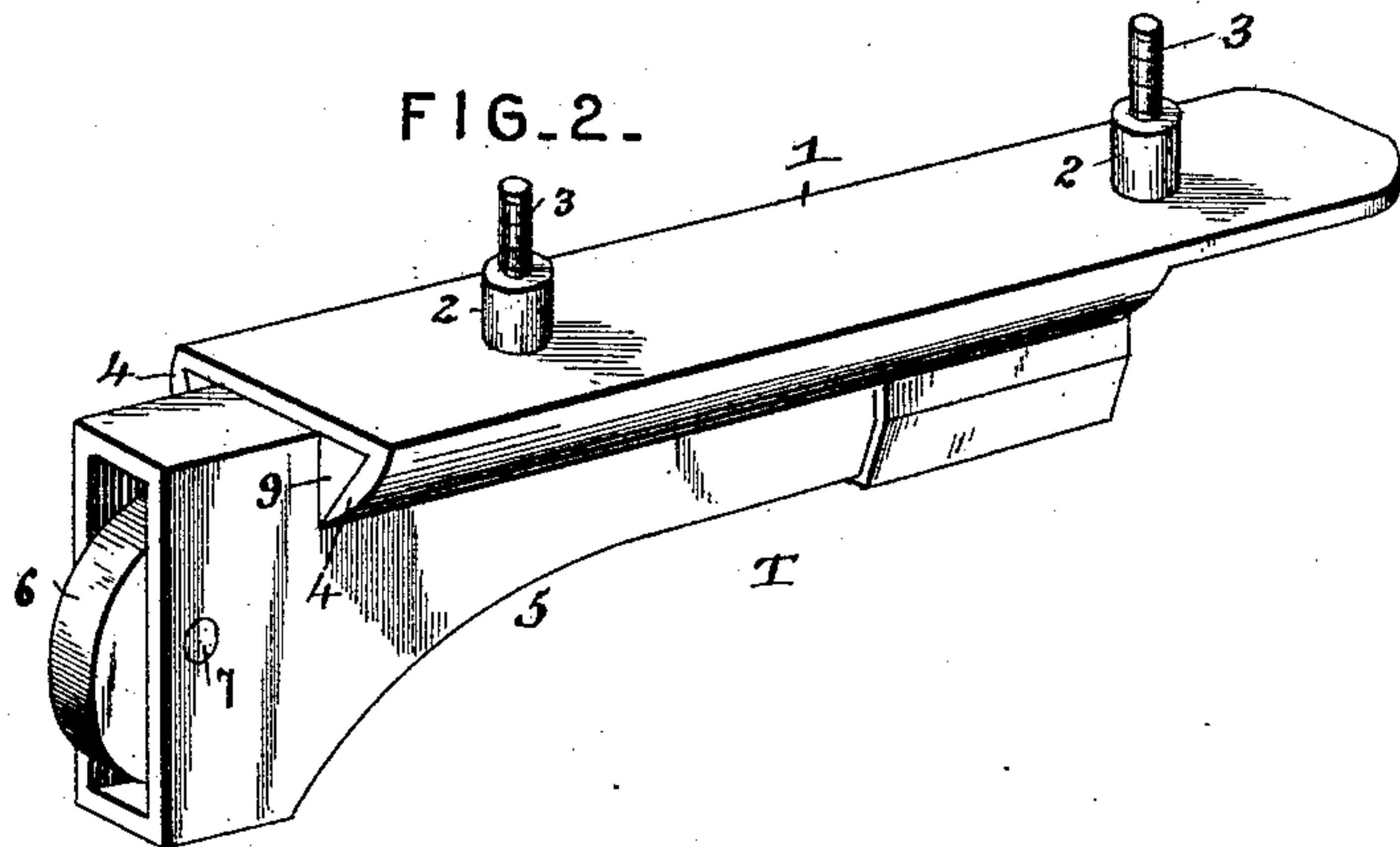
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Inventor

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# UNITED STATES PATENT OFFICE.

FREDERICK JOSEPH ZAHNER, OF STANWICH, CONNECTICUT.

## DUMB-WAITER SIGNAL.

SPECIFICATION forming part of Letters Patent No. 467,073, dated January 12, 1892.

Application filed August 14, 1891. Serial No. 402,664. (No model.)

*To all whom it may concern:*

Be it known that I, FREDERICK JOSEPH ZAHNER, a citizen of the United States, residing at Stanwich, in the county of Fairfield and State of Connecticut, have invented a new and useful Dumb-Waiter Signal, of which the following is a specification.

This invention relates to electric signaling, and more especially to the step-by-step annunciators used therein; and the object of the same is to produce an annunciator having improved push-buttons in circuit, which buttons are adapted to be operated by hand or by tongues on a dumb-waiter or other form of elevator.

To this end the invention consists in the construction hereinafter more fully described in whole and with reference to its various parts, pointed out in the claims, and illustrated on the two sheets of drawings, wherein—

Figure 1 is a vertical section of a well with a dumb-waiter therein, and showing in elevation the circuit leading through the battery and the annunciator-bell and through several push-buttons. Fig. 2 is an enlarged perspective detail of one of the tongues and its supporting-bracket. Fig. 3 is a central longitudinal section of Fig. 2. Fig. 4 is an enlarged perspective detail of the parts of the push-button slightly separated. Fig. 5 is a horizontal section through the guide and push-button, showing the latter in full lines as partially and in dotted lines as completely pushed in.

Referring to the said drawings, the letter W designates a well such as is intended for the reception of an elevator or such as is built in buildings containing flats, and is there intended for the reception of a dumb-waiter D, which is useful for raising food, fuel, and other articles to, and for lowering articles from the various flats. At the sides of this well are grooved guides G of the usual shape, and in these guides move tongues T, projecting laterally from the dumb-waiter. In the bottom of one of the guides is arranged a series of push-buttons P, one beneath the window or door of each flat and in such position that when the tongue T on the elevator engages this push-button the dumb-waiter

will stand exactly opposite such window or door. The various push-buttons are connected in multiple arc by wires I, (preferably insulated,) which lead through a battery B and through an annunciator-bell A, which is located at the bottom of the well and convenient to the cook or janitor of the building. The specific construction of these various elements is that commonly employed, with the exception of the following particulars.

1 is a metallic bracket having upwardly-projecting bosses 2, through which pass bolts 3, whereby the bracket may be secured to the bottom (or to the top) of the dumb-waiter D, and the edges 4 of this bracket incline inwardly and downwardly, so as to form a dovetailed guideway. In said guideway moves the tongue proper, which I have numbered 5, which carries an anti-friction roller 6, journaled on a horizontal axis 7 and projecting from its outer end and which is forced normally outward in the bracket 1 by an expansive coiled spring 8, as seen in Fig. 3, the body of this tongue flaring at its upper edge, as at 9, so as to form a dovetailed head which moves between the inclined edges 4 of the bracket.

In the vertical movement of the dumb-waiter the rollers 6 travel in the grooves of the guides G and prevent the displacement of the dumb-waiter, and by the use of the springs 8 such rollers are held with considerable force in the grooves in extremely damp or dry weather and under whatever position the load on the dumb-waiter may assume, whereby a slight canting of the dumb-waiter is allowed without the tongues binding in the grooves.

The battery B, the annunciator-bell A, and the wires I are of any improved pattern; but such wires are led up behind one of the guides G and through several push-buttons P, connecting them in multiple arc, as shown in Fig. 1. Each push-button is so located with reference to the window or door in the flat opening into the well W that just as the tongue T strikes the push-button and sounds the bell the dumb-waiter will stand opposite the door. Hence the cook or janitor raising the dumb-waiter even in the dark will know on the first stroke of the bell that the dumb-waiter has reached the first floor above the



basement where he stands, on the second stroke of the bell the second floor, and so on; and he will further know that just as each stroke is sounded the dumb-waiter stands in exact position opposite the door of the flat, so that its contents can be removed into said flat. Hence the objectionable custom on the part of the operator, who was heretofore compelled to look up the well or shaft to watch the dumb-waiter, is avoided and there is no further danger of his eyes becoming filled with dust or ashes and of the other many disagreeable results which followed the use of the dumb-waiters without bells or other signals.

I have shown in Fig. 1 the tongues T at the sides of the dumb-waiter; but if the one which operates the push-buttons be placed near the front thereof the button will be within reach of a person standing in the door of the well, and hence a signal can be given manually by depressing any push-button and sounding an audible alarm on the bell in the basement.

The construction of the push-button, which is highly preferable, if not absolutely necessary for use in this connection, is best seen in Figs. 4 and 5. In the bottom of the groove 10 of the guide G is bored a hole, and into this hole is screwed the body 11 of the button-casing, which is provided with exterior threads for this purpose. On the open front end of this casing may be screwed a cap 13, or said casing and cap may be integral. The terminals of the wires I lead to spring-tongues 14, located at opposite sides of the casing and projecting rearwardly and inwardly.

15 is the head of the button or knob proper, which is of porcelain or other ornamental non-conducting material, this knob having the rear end of its body cylindrical, as at 16, and of slightly larger diameter than the hole in the cap 13, by which means the knob is guided in the casing, but is prevented from coming through the hole in the cap.

17 is a spring-metal plate, preferably of copper or some other good conductor, this plate being primarily circular, but being cut so as to form a rearwardly-decreasing spiral 18. The ring-shaped body of the plate is secured to the rear end of the knob, and its extended spiral is secured to the bottom of the casing, thereby acting as a spring. In the normal position of parts the spring-tongues 14 are not in contact with the plate 17. As soon as a slight pressure is applied to the face of the knob the plate 17 contacts with the tips of the two tongues and completes the circuit, and as soon as the knob is pushed in a trifle farther the cylindrical portion 16 comes between the tips of the tongues, and the circuit is then broken, the latter two positions being shown in Fig. 5. Hence as one of the tongues T strikes the push-button it will sound a quick alarm on the bell, and this alarm will of course cease as the tongue passes on either up or down in the guide G; but if the elevator is to stop just when the

alarm sounds, and so as to cause it to stand exactly opposite the door from the well into any flat, it is obvious that an ordinary button would give a continuous alarm on the bell, whereas the one described will not. It will thus be seen that the dumb-waiter or elevator in ascending or descending automatically gives a quick stroke on the bell as it passes each door in the well, and yet if it should stop with one of the tongues resting on the knob of a button the alarm would not be continuous.

A hotel or similar building employing an elevator or dumb-waiter whose well or shaft is provided with my invention holds out the inducement to guests or tenants that the dumb-waiter will be stopped exactly opposite their respective doors in the well, as well as that all danger from the moving dumb-waiter will be avoided to them through the carelessness of the operator and his inability to know the exact position of the dumb-waiter in the well.

I do not confine myself to the precise details of construction herein shown and described, as considerable modification may be made therein without departing from the spirit of my invention.

What is claimed as new is—

1. The combination, with an elevator-shaft having doors, guides at opposite sides of said shaft, an elevator, and tongues thereon, but one engaging each of said guides, of push-buttons arranged on one guide, each the same distance from its door as the others, and adapted to be operated by a tongue of the elevator to close and then open its circuit, a battery, an annunciator-bell, and wires leading from the battery and bell and in which the push-buttons are arranged in multiple arc, substantially as described.

2. The combination, with an elevator-shaft having a grooved guide, an elevator, a bracket thereon having a dovetailed opening, and a spring-actuated tongue sliding in said opening and having a roller moving in said guide, of a push-button in the bottom of said groove, a circuit-wire leading therefrom, and a battery and an annunciator in said circuit, substantially as described.

3. The combination, with an elevator-shaft having a guide, an elevator therein, and a spring-actuated tongue on said elevator bearing against said guide, of a battery, an annunciator-bell, a wire-circuit in which they are located and which leads up the shaft, and a series of push-buttons carried by the guide in the vertical line of said tongue, the buttons being arranged in multiple arc in said circuit, each push-button closing and then again opening the circuit when it is depressed and held, as and for the purpose set forth.

4. The herein-described push-button, the same comprising a casing having spring-tongues at its sides, a cap closing the mouth of the casing and provided with an opening, a knob within the casing having the rear end



of its body cylindrical and larger than said opening, and the front end thereof rounded, all said body being of non-conducting material, and a circular metallic plate secured to the rear end of said body and adapted to make connection between said tongues, the body of said plate being cut to form a rearwardly-extending spiral expansive spring which is connected to the bottom of the casing, as set forth.

5. The herein-described push-button, the same comprising a casing having spring-tongues at its sides and an opening in its front end, a knob of non-conducting material beneath said opening, and a circular metallic plate secured to the rear end of said knob and adapted to make connection between said tongues, the body of said plate being cut to form a rearwardly-extending spiral

expansive spring which is connected to the bottom of the casing, as set forth.

6. The herein-described push-button, the same comprising a casing having wire terminals at its sides, a metallic plate standing normally forward of said terminals, the body of said plate being cut to form a rearwardly-extending expansive spring which is connected to the bottom of the casing, and a knob on the face of the plate, all as and for the purpose hereinbefore set forth.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in presence of two witnesses.

FREDERICK JOSEPH ZAHNER.

Witnesses:

EUGENE KENT,  
JOHN G. REYNOLDS.