

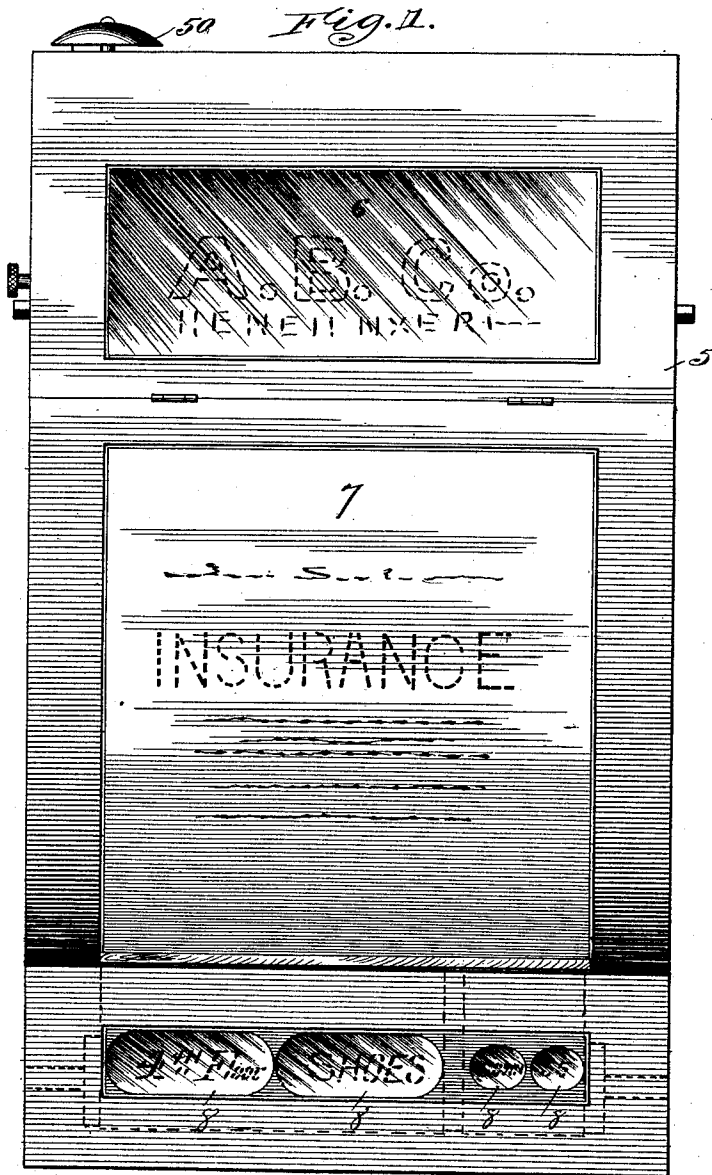
(No Model.)

4 Sheets—Sheet 1.

R. G. HOUTNEY.
INDICATOR FOR ELEVATORS.

No. 465,022.

Patented Dec. 15, 1891.



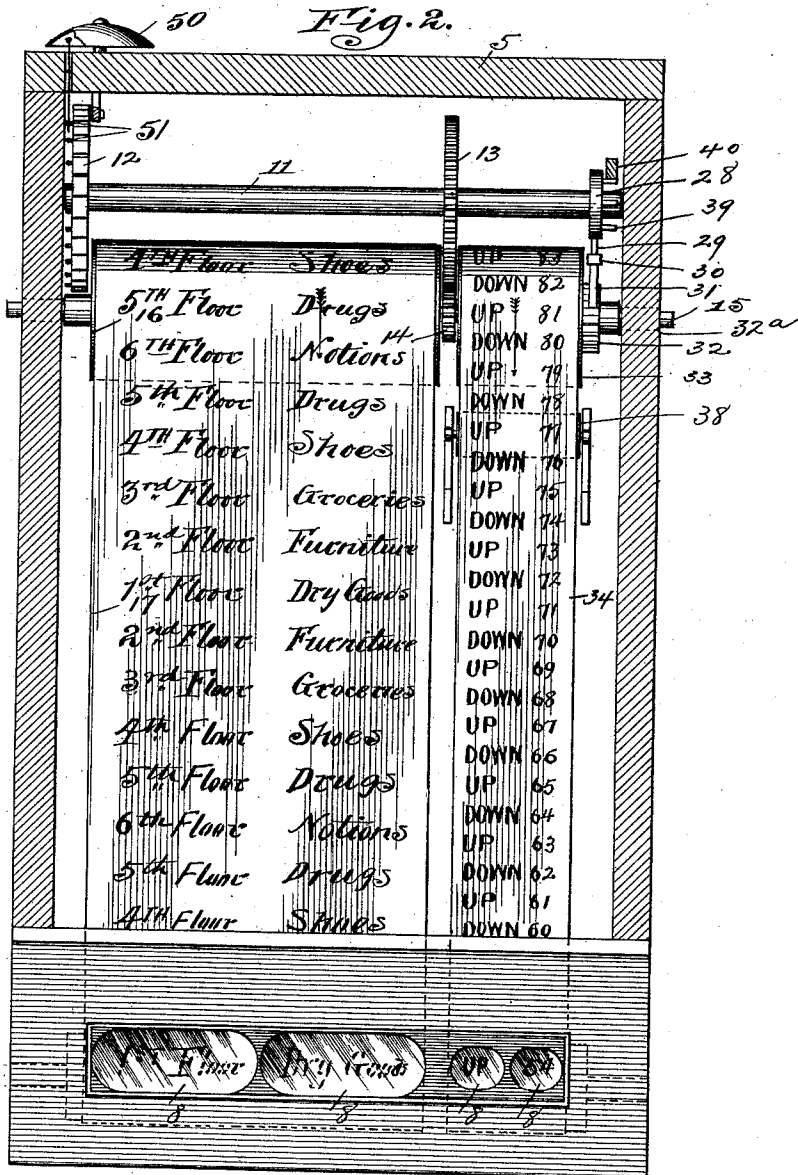
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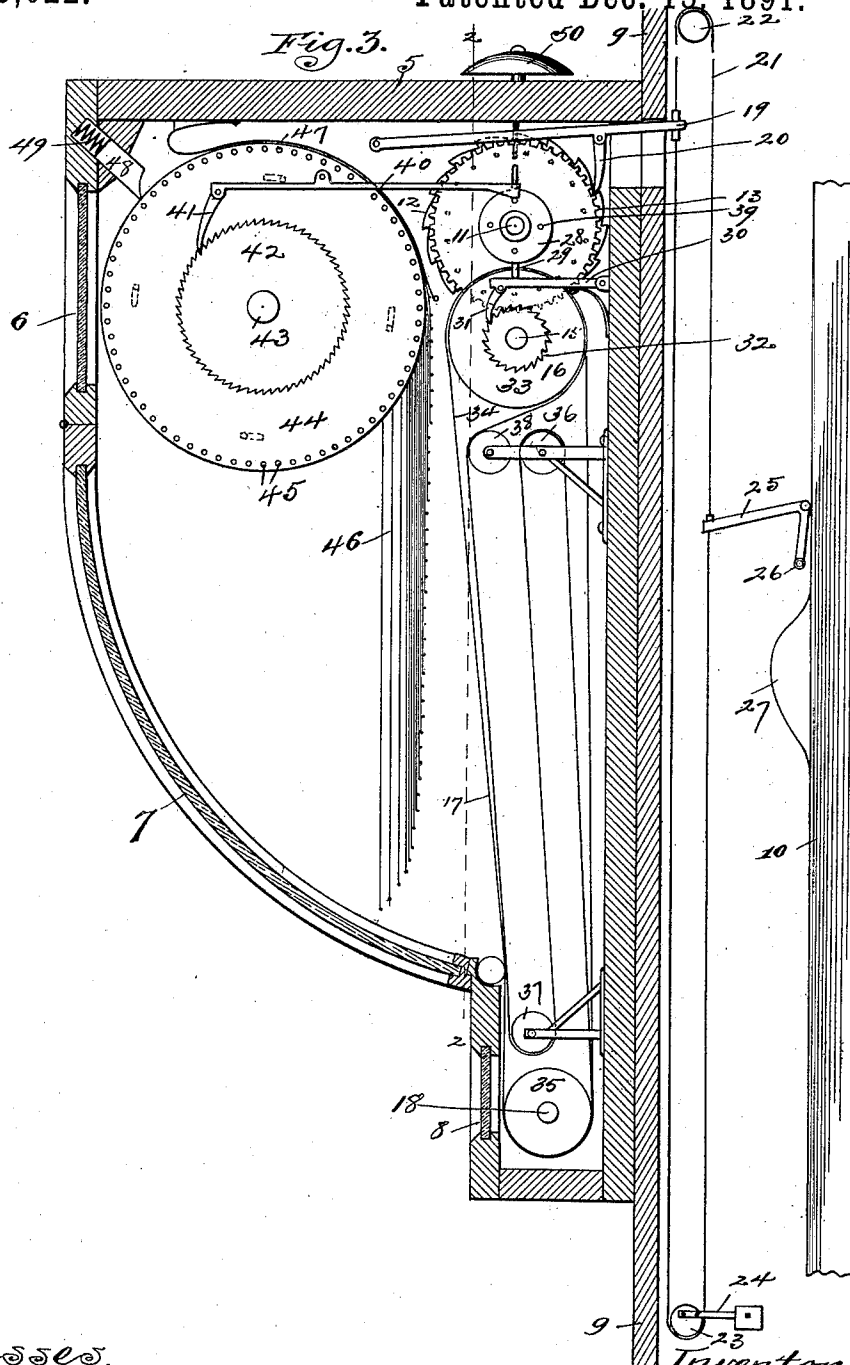
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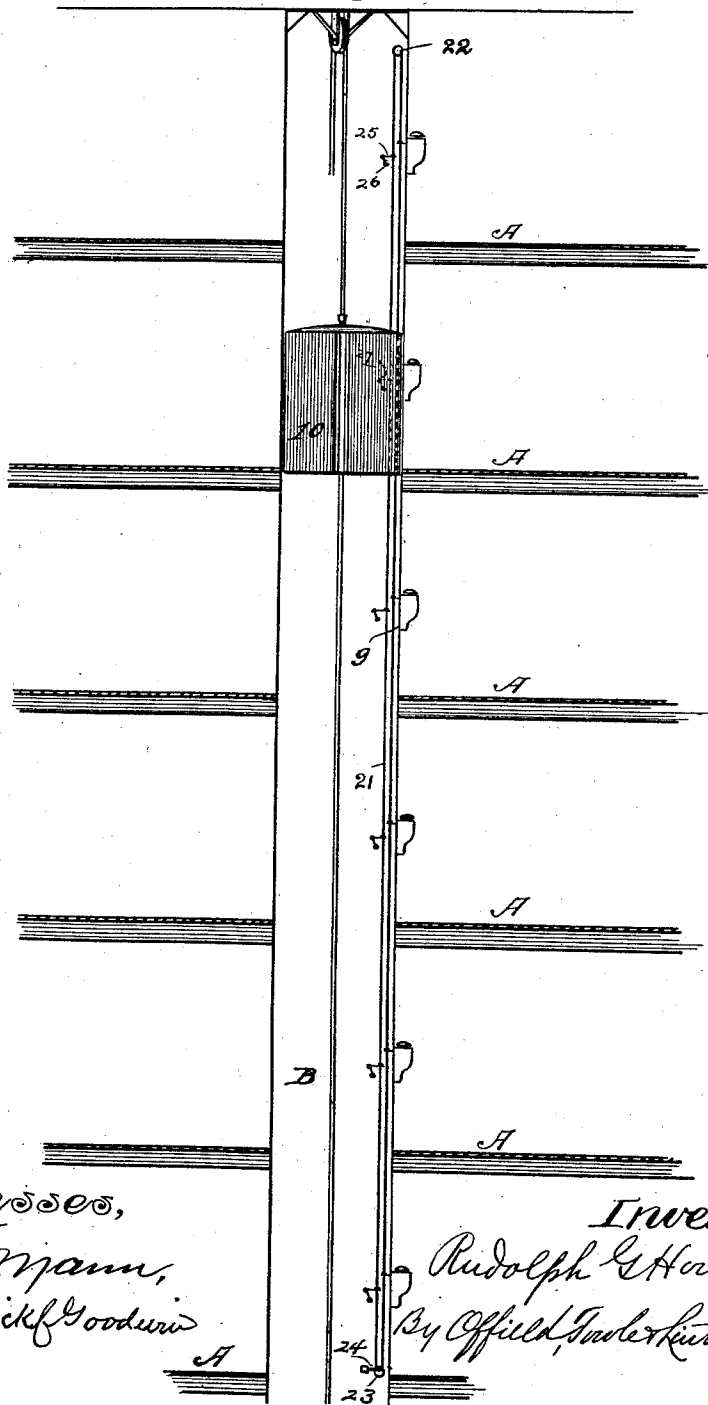
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Fig. 4.



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UNITED STATES PATENT OFFICE.

RUDOLPH G. HOURTNEY, OF CHICAGO, ILLINOIS.

INDICATOR FOR ELEVATORS.

SPECIFICATION forming part of Letters Patent No. 465,022, dated December 15, 1891.

Application filed February 10, 1891. Serial No. 380,959. (No model.)

To all whom it may concern:

Be it known that I, RUDOLPH G. HOURTNEY, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Indicators for Passenger and Freight Elevators, of which the following is a specification.

The object of my invention is to provide indicators to be secured adjacent to the shaft of an elevator on the several floors of a building, whereby the position of the cage and the number of the trips it has made for a definite period of time may be shown, and whereby also matter of advertisement may be displayed by the indicators at the various floors.

In carrying out my invention I employ, by preference, a series of indicators, each consisting of a casing which may be secured on the outer wall of the elevator-shaft adjacent to the doorways. Within said casing I journal shafts, over which indicator-belts are carried, and upon said shafts I place gear-wheels, preferably ratchet-gears, to be operated by a pawl, to which motion is imparted by an endless cable carried over sheaves journaled at the top and bottom of the shaft, said cable being moved by operating-levers connected therewith and actuated by tripping projections carried by the elevator-cage. In the bottom of the casings are sight-openings, through which the marks upon the indicator-belts are discerned. By preference I employ one belt whereon is marked the numbers or names of the various floors and information as to what is to be found on each floor, and a separate belt upon which is marked a series of numbers and the words "Up" and "Down" alternately. I employ mechanism for imparting to the first-named belt a movement for each time the cage passes a floor of the building, either going up or coming down, and other mechanism to operate the belt which indicates the number of trips up or down.

In the front upper portion of the casing I journal a drum, to which are secured by one end flexible sheets bearing thereon matter of advertisement, and preferably on both sides of the sheets. The front of the casing has transparent sections and the sheets are held tightly to the drum by means of a brake, so as to expose one of their sides, while the sheets

are held on the front side of the drum, and then after they are released by being withdrawn from the brake they drop so as to expose the opposite side of the sheet to view through the lower portion of the sight-opening. This drum may be operated by means of a pitman or pawl, motion being imparted to the latter from the gearing of the indicator-belt, and a bell may be secured to the top of the casing and means provided for sounding it at intervals to call attention to the movement of the elevator and to the advertising-matter displayed.

In the accompanying drawings, Figure 1 is a front elevation of the indicator-box. Fig. 2 is a transverse section on the line 2 2 of Fig. 3. Fig. 3 is an end elevation, sectional through the casing, and Fig. 4 is an elevation, partly in section, showing a series of floors at an elevator-shaft, and showing also the elevator and a series of indicators with their operating-levers adjacent to each of the floors.

I have illustrated my invention as applied in a building having several floors A, with an elevator-shaft B.

In the drawings, 5 represents the frame of the casing. 6 represents a transparent section in the upper front portion thereof; 7, a transparent section in the lower front portion, which is preferably curved, and 8 represents transparent portions or sight-openings at the bottom of the front of the casing.

9 represents the wall of the elevator-shaft, and 10 the elevator-cage.

Within the upper rear portion of the casing is journaled a shaft 11, having thereon a ratchet-wheel 12 and a gear-wheel 13, the latter being enmeshed with a gear 14 on a counter-shaft 15, carrying a drum 16, over which is passed a belt 17, turned about a drum on a shaft 18, journaled in the lower portion of the casing. Upon this belt 17 are marked in consecutive order the numbers of the various floors of the building served by the elevator, and by preference there is indicated on the belt adjacent to the number or name of the floor information as to the contents of said floor. For example, as shown in Fig. 2, there are marked on the belt "1st Floor," "4th Floor," "5th Floor," and "6th Floor," and opposite said several numbers the words

"Dry Goods," "Shoes," "Drugs," and "Notions." Motion is imparted to the shaft 11 by means of a pivoted lever 19, bearing a pawl or dog 20, which engages teeth on the ratchet-wheel 12. One end of the lever 19 projects through an aperture in the rear wall of the casing 5 and through a corresponding aperture in the wall 9 of the shaft, and the end of said lever is made fast to a cable 21, turned over sheaves 22 and 23, secured at the top and bottom of the shaft B. Each of the indicators for the several floors is thus operated by the cable 21, and to the sheave 23 is applied a weighted arm 24, for the purpose of lifting the levers 19 and the dogs 20 after the cable has been moved. Bell-crank levers 25 are pivoted to the wall of the shaft opposite each of the indicators, and one member of the bell-crank is made fast with the cable 21, and the opposite member carries a friction-roller 26, secured in the path of a tripping projection 27, carried upon the cage. As the cage moves either up or down the tripping projection 27 will come in contact with the roller 26, thus rocking the bell-crank lever on its pivot, and through the intervention of the cable, lever, and pawl will move the belt 17 one step in the direction indicated by the arrow on the belt, thus bringing in front of the sight-openings 8 in the lower portion of the casing the marks indicating the number of the floor, &c.

It will be understood that each of the indicators on the several floors will have belts marked with the numbers of the floors in the same order, and hence the position of the elevator is indicated on each floor. The belt moves continually in the same direction, and hence the numbers run in series, but in reverse order, as shown in Fig. 2, where the indicator is arranged for a six-floor building.

On the shaft 11 is secured a pin-wheel 28, having upon its periphery pins 29, which are adapted to depress a pawl 30, carrying a dog 31, which moves a ratchet-wheel 32, carried on the shaft 15. This ratchet-wheel is secured with the drum 33, over which is carried a belt 34, said belt being carried around a drum 35, journaled on the shaft 18 in the lower part of the casing, and from this lower drum 35 the belt 34 passes over intermediate drums 36, 37, and 38, the purpose of which is to provide for carrying a belt of sufficient length. On this belt are placed marks to indicate the number of trips, either up or down or round trips. As shown in Fig. 2, the words "Up" and "Down" are marked on the belt alternately, and opposite them a series of numbers. At each half-revolution of the pin-wheel 28 the belt will be advanced one step, thus bringing the word "Up" or "Down" and the number opposite said word in front of the sight-opening at the bottom of the casing. The pin-wheel 28 has upon one face thereof pins 39, the number of which pins may be varied according to the number of sheets which it is desired to expose during the

upward or downward movement of the elevator. As shown in the drawings, four of these pins are employed, and they will, as they are brought successively to bear upon a pivoted pawl 40, cause a dog 41 carried thereby to engage a ratchet 42, secured upon a drum-shaft 43. This shaft has two drum-heads 44. The rims of these heads are perforated for the retention of rods 45, whereon are mounted flexible sheets 46, and a spring 47 has one end thereof secured to the top of the casing 5 and the other adapted to compress the various sheets and present them tightly packed to the action of a brake-shoe 48, which is forced by a spring 49 into contact with the sheets. As the drum is revolved the matter of advertisement displayed on the sheets may be observed through the sight-opening 6, as indicated in Fig. 1. After the free end of the sheet passes the point of the brake-shoe 48 it will drop in front of the curved portion 7 of the casing and display the matter of advertisement marked on that side of the sheet, as indicated at the lower portion of Fig. 1.

A bell 50 is mounted within or upon the casing, and an end of the pivoted bell-hammer handle projects so as to be engaged by pins 51, carried on the face of the wheel 12, and as said wheel is revolved the bell is sounded to call attention to the indicator. It will be understood that the drums 23 and 35 are loosely mounted upon their respective shafts, so that they are not turned by the same means which turns the belt 17. The ends of the shaft 15 project beyond the casing, and the ratchet-wheel 32 has a hub or sleeve 32^a extending through the wall of the casing, as shown by the dotted lines in Fig. 2, and by the application of a key to these projecting ends the belts may be adjusted so as to properly set the indicator each day or at such periods of time as is desired.

It is obvious that modifications may be made in the construction and arrangement of the parts and that some of the features of the invention may be employed without using all of them in the same indicator. For example, the belt for registering the number of trips which the elevator makes may be dispensed with and the gearing for operating the various parts may also be considerably modified. For example, instead of using the endless cable 21 in order to transmit movement from bell-crank levers 25 to the operating mechanism inside the indicator, a single strand of the cable may be employed, or a shift-rod may be substituted for the cable. Obviously, also, instead of using the flexible sheets to contain the matter of advertisement, stiff cards might be employed and hinged to a rotatable carrier or shaft, and the bell-crank levers may be omitted and other equivalent means used for actuating the shifting cable or rod by the movement of the elevator-cage.

I claim—

1. In an indicator apparatus for elevators,

a series of indicators located upon different floors served by the elevator and each having therein a movable carrier marked with the numbers or names of the several floors in proper sequence, a shifting device connected with and adapted to move the several carriers, and a series of operating-levers connected with the shifting device and adapted to be actuated by the passing cage, substantially as described.

2. In an indicator apparatus for elevators, a series of indicators located upon different floors served by the elevator and each having a movable carrier marked with the numbers or names of the floors in proper sequence, a shifting device connected with and adapted to move the several carriers, a series of operating-levers connected with the shifting device and adapted to be actuated by the passing cage, and a separate carrier marked with the numbers or names to show the number of trips made by the elevator, and suitable operating mechanism for the second carrier adapted to move the same to register the number of trips made by the elevator-cage, substantially as described.

3. In an advertising indicator apparatus for elevators, a series of indicators located upon different floors served by the elevator and each having a movable carrier marked with the numbers or names of the floors in proper sequence, a shifting device connected with and adapted to move the several carriers, a series of operating-levers connected with the shifting device and adapted to be actuated by the passing cage, a series of advertising sheets or cards mounted upon a revolving carrier, and suitable mechanism whereby to revolve

the carrier to display the advertising-matter, substantially as described.

4. In an advertising indicator apparatus for elevators, a series of indicators located upon different floors of the building and each having a movable carrier marked with the numbers or names of the floors in proper sequence, a shifting device connected with and adapted to move the several carriers whereby to show the position of the cage, and a series of advertising-sheets adapted to be shifted at intervals by the movement of the carriers, substantially as described.

5. An advertising device to be operated by the passage of an elevator-cage, comprising a rotatable carrier having advertising-sheets secured therewith, shifting mechanism secured in the elevator-shaft, and a tripping projection on the elevator-cage adapted to shift the cable, whereby to move the carrier to display the sheets at intervals, substantially as described.

6. An advertising device adapted to be operated by the passage of an elevator-cage, comprising a casing to be secured upon the several floors served by the elevator and having therein a rotatable carrier with advertising-sheets secured therewith, a shifting device connected with the operating mechanism, and a tripping projection on the elevator-cage adapted to engage the shifting-cable whereby to display the sheets at intervals, substantially as described.

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