

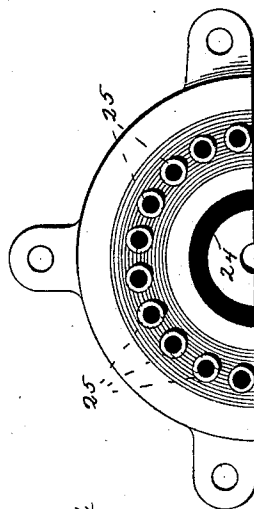
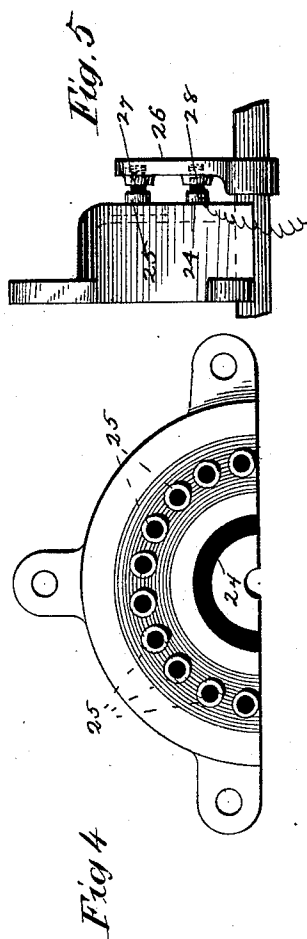
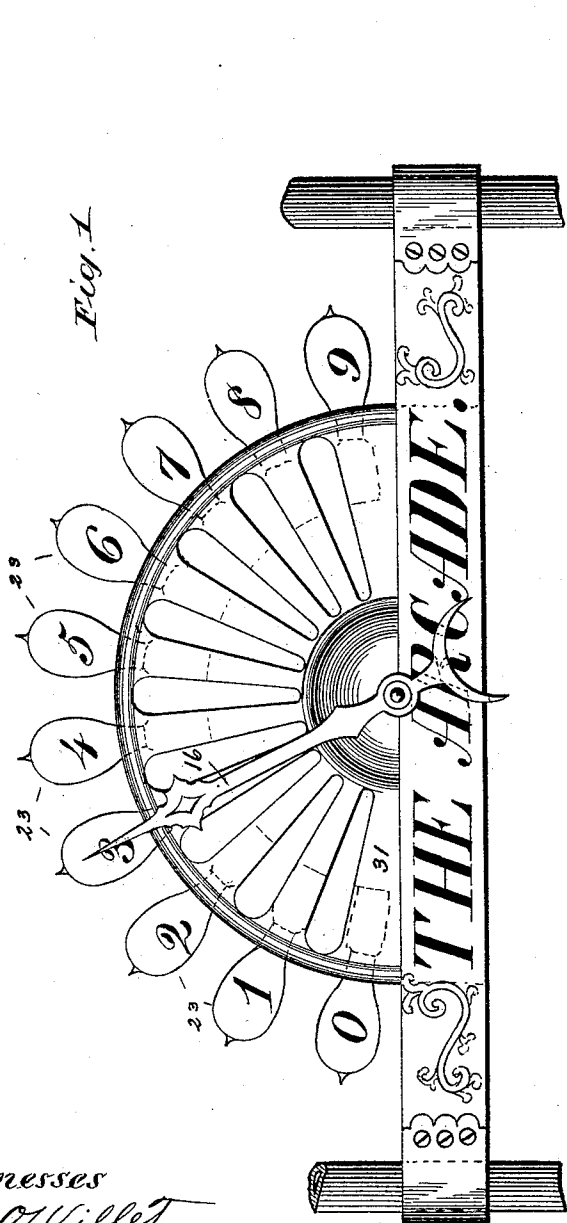
(No Model.)

3 Sheets—Sheet 1.

L. MALM.
ELEVATOR INDICATOR.

No. 545,127.

Patented Aug. 27, 1895.



Witnesses
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(No Model.)

3 Sheets—Sheet 2.

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Fig. 2.

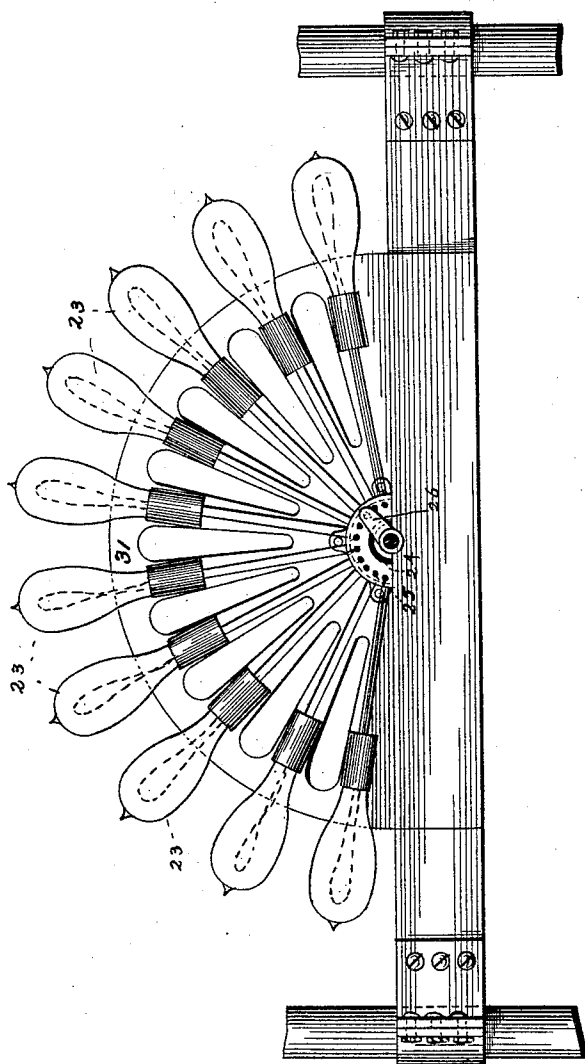
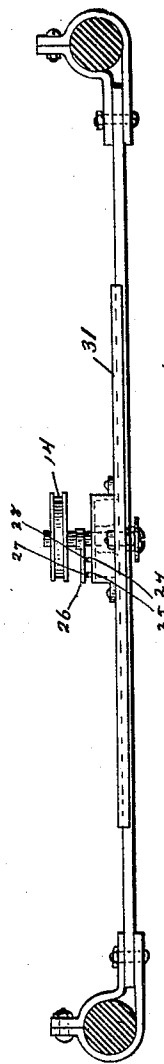


Fig. 3.



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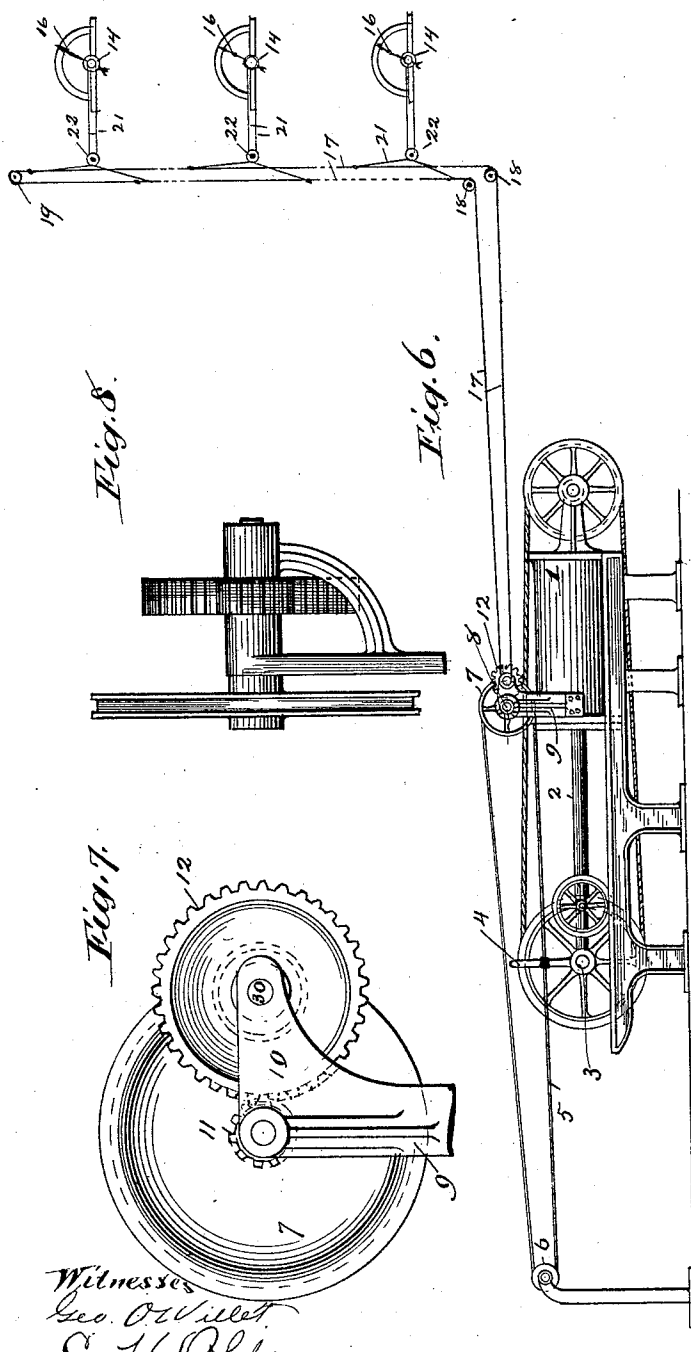


Fig. 8.

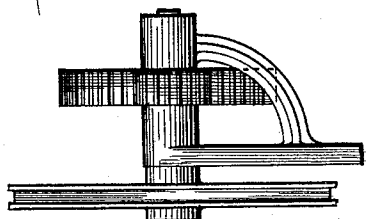
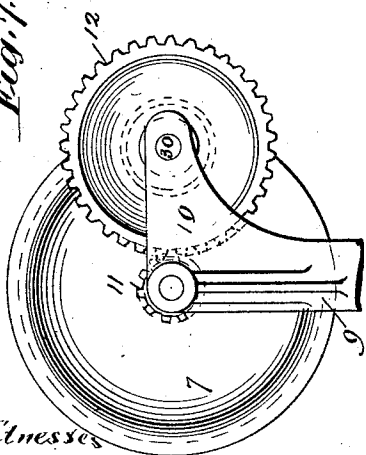
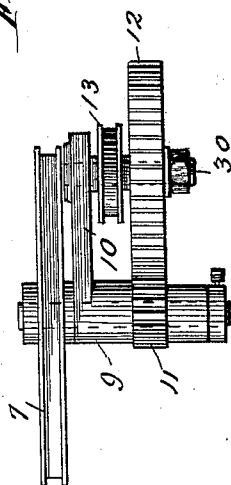


Fig. 7.



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Fig. 9.



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UNITED STATES PATENT OFFICE.

LOUIS MALM, OF CLEVELAND, OHIO.

ELEVATOR-INDICATOR.

SPECIFICATION forming part of Letters Patent No. 545,127, dated August 27, 1895.

Application filed January 5, 1895. Serial No. 533,994. (No model.)

To all whom it may concern:

Be it known that I, LOUIS MALM, a citizen of the United States, and a resident of Cleveland, county of Cuyahoga, State of Ohio, have
5 invented certain new and useful Improvements in Elevator-Indicators, of which I hereby declare the following to be a full, clear, and exact description, such as will enable others skilled in the art to which it appertains
10 to make and use the same.

My invention relates to improvements in floor-indicators for elevator-service; and its objects are to provide not only a graduated index and finger connected with actuating
15 parts of the elevators, but also electrical devices whereby a lamp can be made to glow at each successive movement of the finger and illuminate the index-number. To accomplish this design I employ the segmental form of
20 arrangement of index and lamps with the means for operating the finger and throwing the switch in connection with the movements of the elevator, as hereinafter described, shown in the accompanying drawings, and
25 specifically pointed out in the claims.

In the accompanying drawings, Figure 1 is a front elevation of the indicator and lamps. Fig. 2 is a rear view of the same. Fig. 3 is a top view of the same with lamp removed.
30 Fig. 4 is an elevation in the rear of the switch contact-plate. Fig. 5 is a side elevation of the same, showing switch-arm and pulley-shaft. Fig. 6 is a side elevation of hydraulic cylinder and mechanism connected therewith
35 for driving the indicator-fingers at different floor-levels, as shown at right of figure. Figs. 7, 8, and 9 are respectively, side, edge, and top views of bracket and gearing located upon the cylinder.

40 In the views, 1 is the hydraulic cylinder for the elevators; 2, the piston-rod provided with wheel-bearing 3 at its outer end, which supports the vertical rod 4, to which is secured the rope 5 stretched between the stationary
45 pulleys 6 and 7 and revolves them backward or forward as the piston travels in the cylinders. The pulley 7 is mounted upon the shaft 8, bearing in the bracket 9, bolted to the cylinder. An arm 10 from this bracket sup-
50 ports a short parallel shaft 30, and the spur-pinion and gear 11 and 12 are mounted upon

the shafts and so proportioned as to reduce the speed to the requirements of the small pulley 13 upon the parallel shaft from which the pulley 14 upon the indicator-shafts 15 are
55 driven, as indicated at the right of Fig. 6, where 14 are the indicator-pulleys, and 16 the index-fingers. 17 is a cord passing over pulleys 13 18 19, and 21 21 21 are intermediate cords connecting the parallel sides of the
60 doubled cord 17 and crossing over the pulleys 22 to insure a tight engagement of the cord. It will be seen that by this arrangement whenever the piston moves in the cylinder and the elevators rise the indicator-fingers will move
65 also and by suitable marking will show the exact floor at which the elevator stands and will stand alike on all the floors.

The construction of this portion of the device is as follows: In Figs. 1, 2, 3, and 4 the
70 indicator is seen to be a segment 31, upon which are mounted incandescent lamps 23, figured to represent the several floors of the building, and placed radially, so that the index-finger will point to each consecutively as
75 the shaft revolves. At the rear of the segment are placed the switch-contacts 24 and 25, the inner one 24 being an integral strip of metal, the outer ones being divided in as many parts as there are lamps, and each lamp-cir-
80 cuit being connected with one of the upper and with the lower contact. The switch-arm 26, secured to the shaft at the same angle with the index-finger, is provided with the terminals 27 and 28 of the electric circuit which
85 glows the lamps, and as it passes over the segment closes each lamp-circuit in regular order as it makes contact with each outer contact 25, and the circuit is immediately
90 opened when the arm has passed, the effect of which will be to light each lamp successively as the finger points to it.

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

1. In a floor indicator for elevator service the combination with a segmental plate and incandescent lamps secured radially thereto of a centrally pivoted index finger and shaft, terminals upon the segment plate for the sev-
95 eral lamp circuits and contact points upon a switch arm connected with the main circuit 100

adapted to move in unison with the index finger and include each lamp successively in the main circuit substantially as described.

2. In a floor indicator for elevators, the combination with a segmental plate, and incandescent lamps secured radially thereto and numbered consecutively of a centrally pivoted index finger and shaft and a switch arm upon said shaft registering with said finger
10 provided with the terminal contacts of a main electric circuit, terminal contacts on the segment plate for the lamp circuit, and mechanism connecting the said shaft with the movements of the piston in the hydraulic cylinder,
15 whereby the shaft will be rotated and the successive lamps will glow as the indicator points to them, substantially as set forth.

3. In a floor indicator for elevator service, the combination of a segment provided with

radially arranged incandescent lamps, numbered serially, and contact points at the terminals of said lamp circuits, a central shaft provided with an index finger and switch arm bearing contact points, terminals on the main circuit adapted to engage the lamp terminal contacts as the shaft rotates, with means for rotating said shaft in unison with the movements of the elevator consisting in the stationary pulleys 6 and 7, cord 5, arm 10 secured upon the piston rod, spur gearing 11 and 12, shaft 30, pulley 13, and intermediate cords and pulleys, substantially as set forth.

In testimony whereof I set my hand this 3d day of August, 1894.

LOUIS MALM.

Witnesses:

WM. M. MONROE,
C. H. OLDS.