

P. T. KENNY.
PILOT LIGHT SYSTEM FOR ELEVATORS.
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991,854.

Patented May 9, 1911.

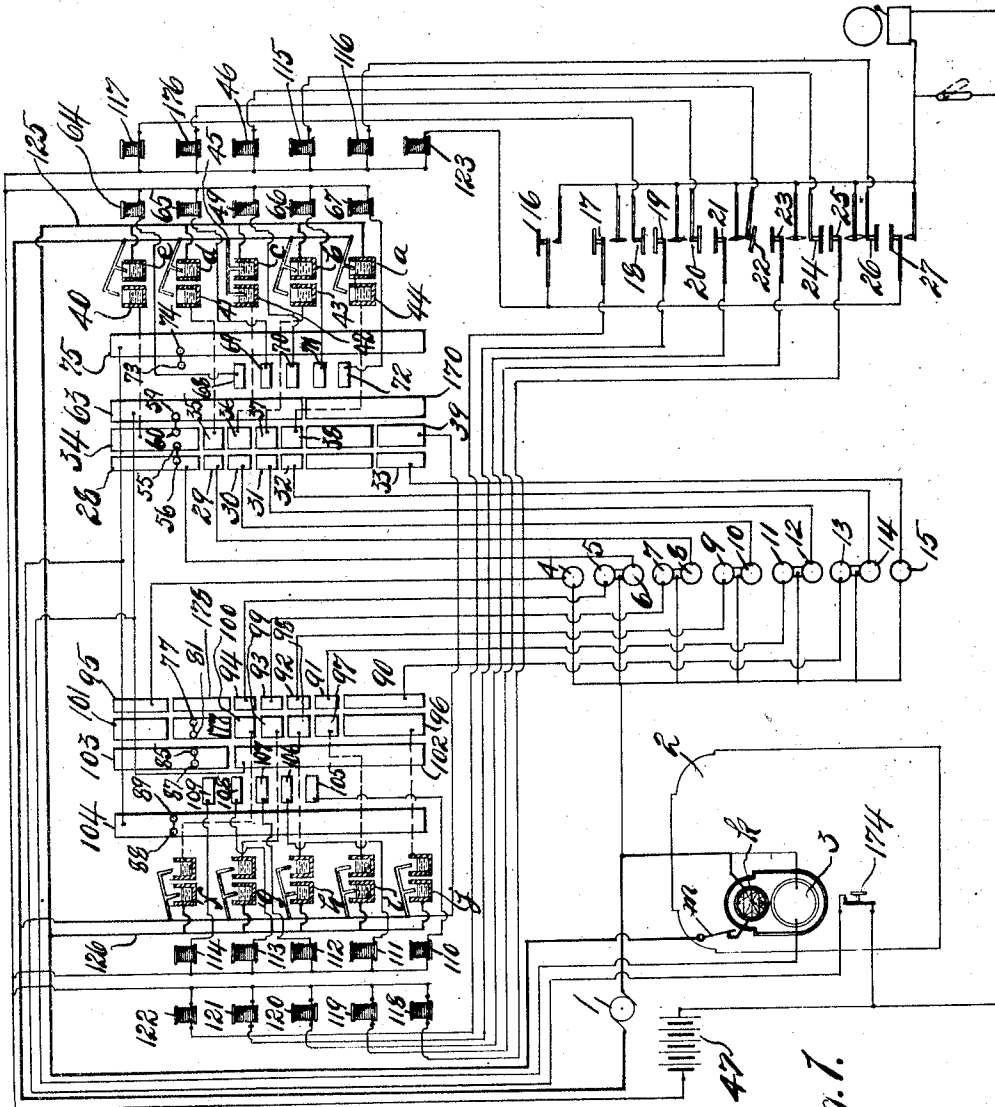


Fig. 1.

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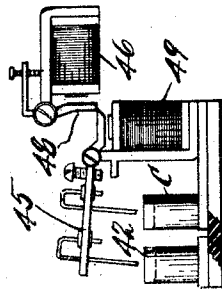


Fig. 2

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PILOT-LIGHT SYSTEM FOR ELEVATORS.

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Specification of Letters Patent.

Patented May 9, 1911.

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To all whom it may concern:

Be it known that I, PAUL T. KENNY, a citizen of the United States, residing at New York city, New York, have invented certain new and useful Improvements in Pilot-Light Systems for Elevators, of which the following is a clear, full, and exact description.

My invention relates to an elevator signaling apparatus and particularly what I have termed a "pilot light" system for signaling the operator of the car at certain times, such as on Sundays and holidays when the car normally remains at the ground floor and does not make regular trips as it does upon the other ordinary days.

My invention will be set forth in the claims.

In the drawing, Figure 1 represents my invention as applied to the construction illustrated in the Smalley & Reiners Patent 826,752; and Fig. 2 is a detail of one of the sets of switches with the corresponding setting and restoring magnets.

In the above embodiment of my invention, 1 is a source of supply for the signal in the car, such as an ordinary dynamo, and 2 is the car; 3 is the ordinary light in the car for signaling the operator to stop at the floors when the car makes regular trips. 4 to 15 are "up" and "down" signal lights stationarily located at the different floors outside of the shaft for signaling to the intending passenger that the car is approaching.

16 to 27 are "up" and "down" push-button switches at the different floors for operation by the intending passenger.

40 to 44 are the "down" mercury pots each of which is provided with a pivoted switch arm, such as 45. Each of these switch arms is controlled by a mechanism such as shown in Fig. 2, that is, it is normally held in raised position by a detent 48 which is drawn toward magnet 46 when the corresponding push-button is pushed, so as to release arm 45 and allow the same to drop in the mercury pot.

49 is a restoring magnet for restoring the parts to normal position. The "up" side of the commutator at the left of the diagram is provided with similar mercury pots, switch arms and restoring and setting magnets.

The fixed commutator plates 28, 29, etc., are shown, together with moving brushes 55,

56, 59, 60 and 73, 74 for the "down" side, and 77, 81, 85, 87, and 88, 89 for the "up" side, which travel over the contact plates to make the connections at the proper times.

68 to 72, 75 and 104 to 109 are stationary restoring contacts traveled over by the brushes for energizing the restoring magnets in succession to restore the mercury pot arms to normal condition at the proper times.

Supposing that a passenger on the floor on which is located push-button switch 22 desires to go down. He pushes this switch to the position shown, which will energize magnet 46 and drop arm 45 into the mercury pots as shown, and when the "down" brushes 59, 60 bridge stationary contact plate 63 and 36, the light 3 in the car will light up to tell the operator to stop at the floor. When brushes 55, 56 bridge contacts 36 and 30, it will close the circuit to "down" light 10 on the floor to tell the operator that the car is coming. After the passenger has been taken aboard and the car moves on downwardly, brushes 73, 74 will bridge plates 75 and 70 and energize restoring magnet 49, thus restoring the switch to normal position and breaking the circuits.

When the car is moving downwardly, the brushes are in position as shown, that is, the brushes for the "down" or right-hand side are in position to contact with the plates just mentioned, but the brushes on the "up" or left-hand side have been automatically moved to such position that the pairs of brushes only contact with the strips 104, 103, 102, 101, etc., thereby being substantially inoperative. I have not thought it necessary to show the construction for shifting said brushes, as the foregoing forms no part of my invention as it is well known in the art, as it is described in the said Smalley & Reiners patent and is in common use in many buildings throughout the United States.

As my invention I have added to the above a second electric signal, such as an electric lamp *k*, in the car and two additional rows of mercury pots *a* to *j*, with connections from them to the wires 125 and 126, and have added a cut-out switch *m* in the light circuit.

Assuming, now, that the car is standing at the ground floor on a Sunday when there is very little travel, and the car does not make regular trips, and that a passenger presses the "down" button 22. The light *k*

will immediately light up because a circuit will be closed from the dynamo 1 to the mercury pot *a*, back by wire 125 through the light and to the dynamo. This will immediately tell the operator that there is a passenger on a floor, but will not tell him in which direction that passenger wishes to go. He immediately starts up and when he approaches the floor on which the passenger is, the light 3 in the car will light up telling him to stop at that floor. He then takes on the passenger and continues on until his pilot light *k* is extinguished. This will not occur until he reverses his direction of movement and starts downwardly and passes the said floor when the restoring brushes 73, 74 will energize the restoring magnet 49. If two or more passengers on different floors have pressed their buttons, the light will remain lighted until all the restoring magnets corresponding to the buttons pressed have been energized. In other words, the pilot light will remain on until all passengers have been taken aboard, as it will be observed that the mercury pot switches *a* to *j* are in parallel across the circuit to the pilot light, whereby the closing of any one of them will immediately light up the light and the light will remain lighted until all the switches have been opened. The pilot light will also light up at whatever time a switch is closed, that is, it makes no difference where the car is or in what direction it is moving, as the pilot light will light up at once as soon as any switch is closed. The "up" restoring mechanism on the left-hand side of the diagram successively opens only the switches corresponding to the "up" buttons when the car is moving up, and the "down" restoring mechanism on the right-hand side of the diagram successively opens only the switches which correspond to the "down" buttons when the car is moving down. The cut-out switch *m* will be left open when the car makes regular trips on ordinary days, as the pilot light *k* is not then used, but on Sundays and holidays the switch will be closed in order to make use of the pilot light.

What I claim is:

1. In a signaling apparatus for elevators in combination, an electrically-operated signal in the car, a source of electromotive force, up and down passengers buttons at each floor, a normally-open switch corresponding to each button and closed by operation of the same, said switches being connected in parallel in said signal circuit and constructed and arranged to close the signal circuit at whatever time a switch is closed, up restoring mechanism successively opening only the switches corresponding to the up buttons when the car is moving up, and down restoring mechanism successively opening only the switches corresponding to the down buttons when the car is moving down.

2. In a signaling apparatus for elevators in combination, an electrically-operated signal in the car, a source of electromotive force, up and down passengers buttons at each floor, a normally-open switch corresponding to each button and closed by operation of the same, said switches being connected in parallel in said signal circuit and constructed and arranged to close the signal circuit at whatever time a switch is closed, up restoring mechanism successively opening only the switches corresponding to the "up" buttons when the car is moving up, and down restoring mechanism successively opening only the switches corresponding to the "down" buttons when the car is moving down, a second electrically-operated signal in the car, circuits in parallel for operating the same, means for closing said circuits comprising a part moved correspondingly with the movement of the car and switch mechanism controlled at least in part by said push-buttons whereby said circuits for said second signal cannot be closed by the apparatus until a push-button has been pushed and the car approaches the floor on which said push-button is located.

Signed at New York, N. Y. this 30th day of July 1908.

PAUL T. KENNY.

Witnesses:

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