

W. R. ROGERS & C. VOGEL.
DOOR OPERATING MEANS.
APPLICATION FILED DEC. 8, 1908.

935,410.

Patented Sept. 28, 1909.

2 SHEETS—SHEET 1.

Fig. 1.

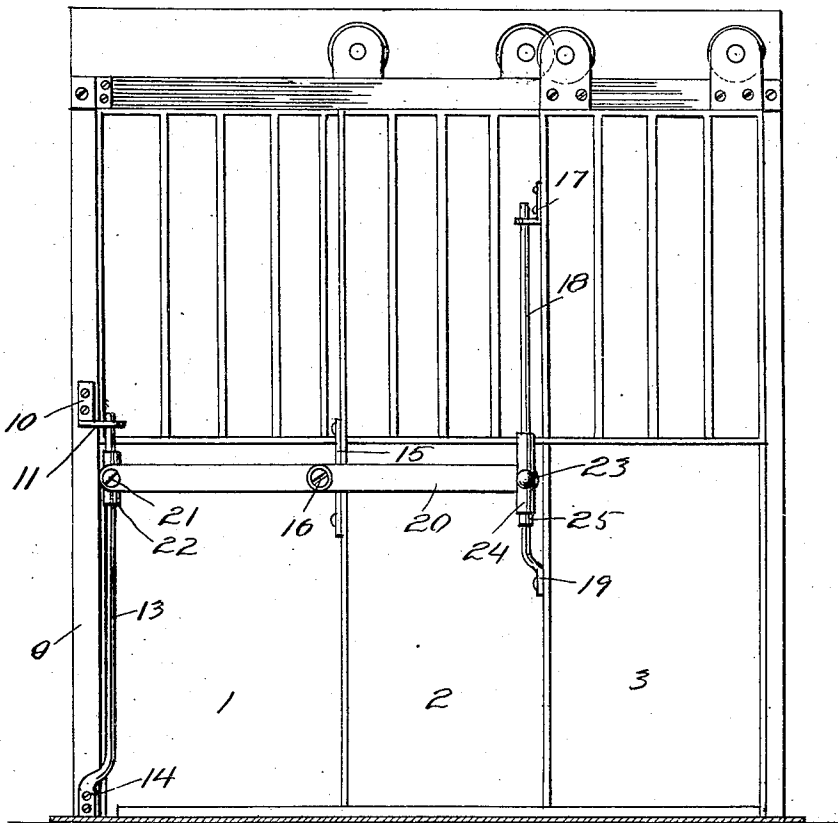
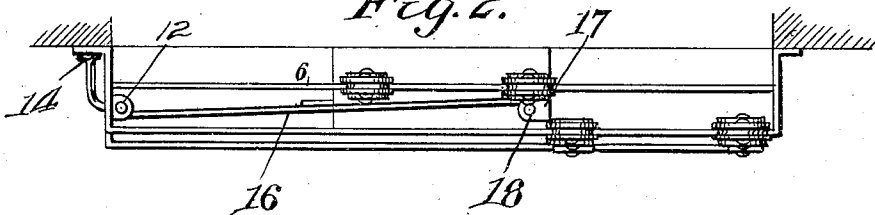


Fig. 2.



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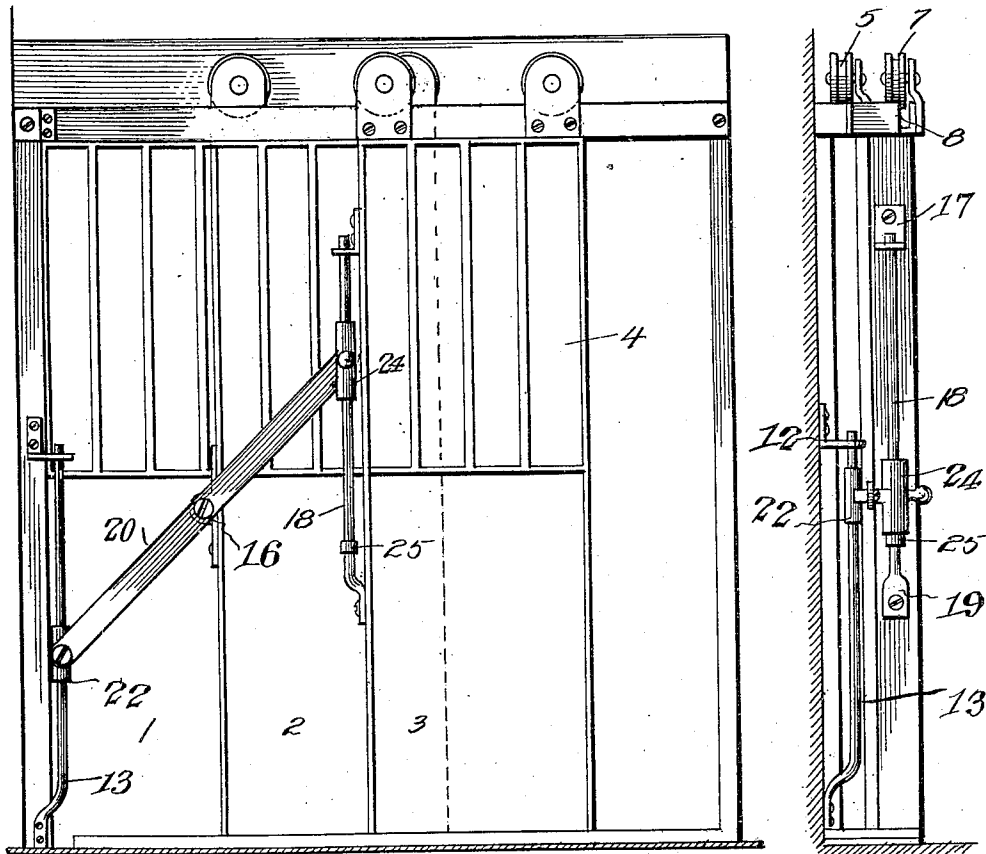
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2 SHEETS—SHEET 2.

Fig. 4

Fig. 3.



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UNITED STATES PATENT OFFICE.

WILLIAM R. ROGERS AND CHRIST VOGEL, OF ST. LOUIS, MISSOURI.

DOOR-OPERATING MEANS.

935,410.

Specification of Letters Patent. Patented Sept. 28, 1909.

Application filed December 8, 1908. Serial No. 466,525.

To all whom it may concern:

Be it known that we, WILLIAM R. ROGERS and CHRIST VOGEL, citizens of the United States, residing at St. Louis, in the county of St. Louis City and State of Missouri, have invented new and useful Improvements in Door-Operating Means, of which the following is a specification.

The invention relates to an improvement in door operating means designed particularly for use in connection with sectional sliding doors.

The main object of the present invention is the provision of a door operating means particularly adapted for use in connection with gates for elevator wells, or the like and which is selflocking in that it operates when the gates are closed to prevent accidental opening of the gates under any circumstances.

The invention will be described in the following specification, reference being had particularly to the accompanying drawings, in which:—

Figure 1 is a view in elevation, showing sectional sliding doors having our improved opening device. Fig. 2 is a top plan of the same. Fig. 3 is an edge view of the doors illustrating the connection of the operating means. Fig. 4 is a similar view with the device partly operated to open one section.

Referring particularly to the accompanying drawings, our improvement is shown as applied to a sectional door closing the floor opening to an elevator shaft, as is usual in structures of this character. The door is shown as made up of sections 1, 2, and 3, each of which sections has the lower part more or less solid and the upper part of grille or grating work, as at 4. In the usual type of such doors the section 1 is fixed with relation to the shaft casing, while the sections 2 and 3 are slidable with relation to the section 1 and with relation to each other, so that the respective sections are offset with the section 2 supported by rollers 5 upon a track 6, while the section 3 is supported by rollers 7 upon a track 8.

The door described is of the ordinary type and while for convenience we have shown it of the particular type adapted for elevator shafts, it is to be understood that we design the representation to indicate any preferred type or style of door made up of independent sections and adapted to be opened or closed by the operation of said sections. The side

edge 9 of the door casing adjacent the fixed section 1 of the door is provided at a point about intermediate its height with an L-shaped bracket 10, the horizontal arm of which is formed with an opening 12. The bracket is designed to support the upper end of a guide rod 13, the lower end of which rod is bent laterally and downwardly and secured to the casing, as at 14. The lower end of the rod is so bent and the bracket so constructed and arranged that the main length of the rod will extend in parallel relation and spaced some distance outwardly from the front surface of the section 1 of the door. Slightly below a point in horizontal alinement with the bracket 10 there is secured to the exposed side edge of the section 2 of the door a bearing bracket 15 carrying a laterally projecting bearing pin 16, for a purpose which will presently appear. To the exposed side edge of the section 3 of the door, near the upper end of said edge, is secured a bracket 17 corresponding to the bracket 10 except that it is a direct right angle bracket, which bracket 17 is formed with an opening to receive the upper end of the guide rod 18, the lower end of which is laterally offset and secured to the edge of the section 3, at 19. The bracket 17 and the lower end of the rod 18 are so constructed and arranged that said rod 18 will, for the greater portion of its length, be secured in parallel relation to and spaced from the side edge of the section 3 of the door.

An operating lever 20 is pivotally supported upon the pin 16 at a point intermediate its ends, the relatively rear end being connected by a pivot pin 21 and a sleeve 22 slidably mounted upon a rod 13, while the forward end is pivotally connected by a pin 23 on a sleeve 24 slidably mounted upon the rod 18. The lever then has connection with the casing through the sleeve 22 with the intermediate movable section 2 through the pivot pin 16 and with the end movable section 3 through the sleeve 24. The sleeves 22 and 24 are freely slidable upon their respective rods, and the sleeve 24 exceeds the sleeve 22 in weight to practically compensate for the pressure essential in opening the doors, or in other words the sleeve 24 will in effect act as an automatic closer for the doors, as will presently appear. A collar 25 is secured upon the rod 18 at the lower limit of travel of the sleeve 24, operating as a

stop to limit the downward movement of said sleeve.

In opening the doors it is only necessary to press upward on that portion of the lever between the pivot pin 16 and the sleeve 24, which causes the sleeve 24 to ride upward upon the rod 18 and the sleeve 22 to ride downward upon the rod 13. This movement, as will be obvious, will open both sections 2 and 3 of the doors simultaneously and equally in an obvious manner. As the sleeve 24 is of the excess weight noted, it will be obvious that upon release the doors will automatically return to closed position, or the sleeve 24 may if desired be of such weight as to require a slight manual exertion after the door opening operation. It is to be particularly noted that when the door sections are in closed position, as shown in Fig. 1, the pivotal connection of the lever with the sleeves 22 and 24 and the pin 16 are in horizontal alinement, whereby it will be noted that the lever forms a lock for the door against its accidental opening, and precludes movement of the sections in the opening direction except through manual manipulation of the lever. This automatic lock is further maintained by the fact that the respective ends of the levers are connected to relatively opposing sides of the sleeves 22

and 24, thereby disposing the lever at an incline to the surface of the door sections.

The attachment occupies the minimum space, and, therefore, permits a relatively greater opening space for the section than with usual structures. Furthermore, there are no fixed points of lever connection and secondly no binding in action.

Having thus described the invention what is claimed as new, is:—

The combination with a door made up of a series of sliding sections, of a rod secured to the fixture, a sleeve slidably mounted on said rod, a second rod secured to the relatively remote door section, a sleeve slidably mounted on said second rod, and a lever pivotally connected to an intermediate door section, the ends of said lever being pivotally connected to the respective sleeves, the sleeve on the second rod being heavier than the first mentioned sleeve, whereby the excess weight of said sleeve operates as an aid to the door closing operation.

In testimony whereof we affix our signatures in presence of two witnesses.

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CHRIST VOGEL.

Witnesses:

EMIL VOGEL,
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