

No. 887,307.

PATENTED MAY 12, 1908.

R. B. BROWNE.
DOOR OR GATE OPENING AND CLOSING DEVICE.
APPLICATION FILED JUNE 2, 1904.

FIG. 1.

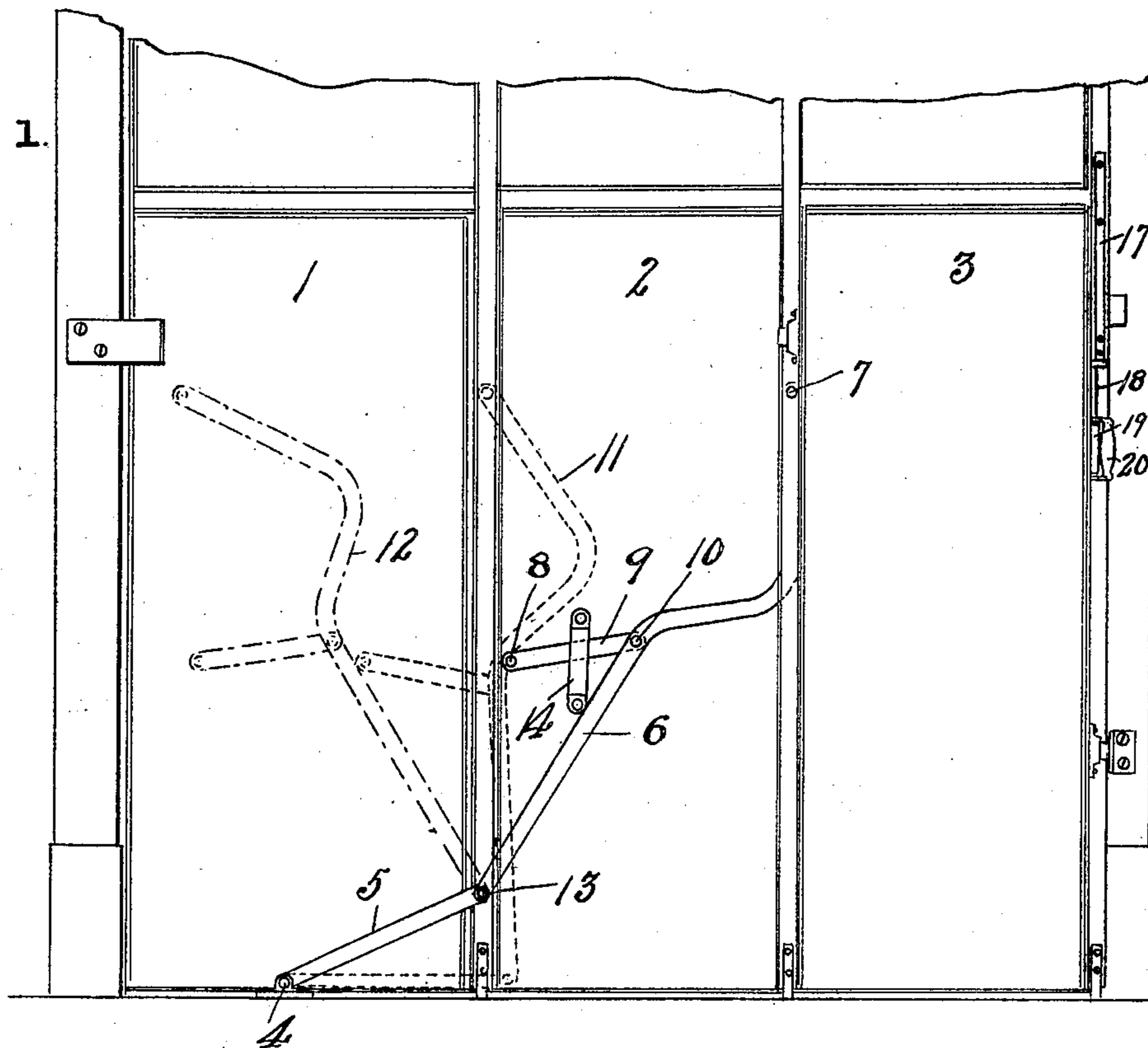


FIG. 2.

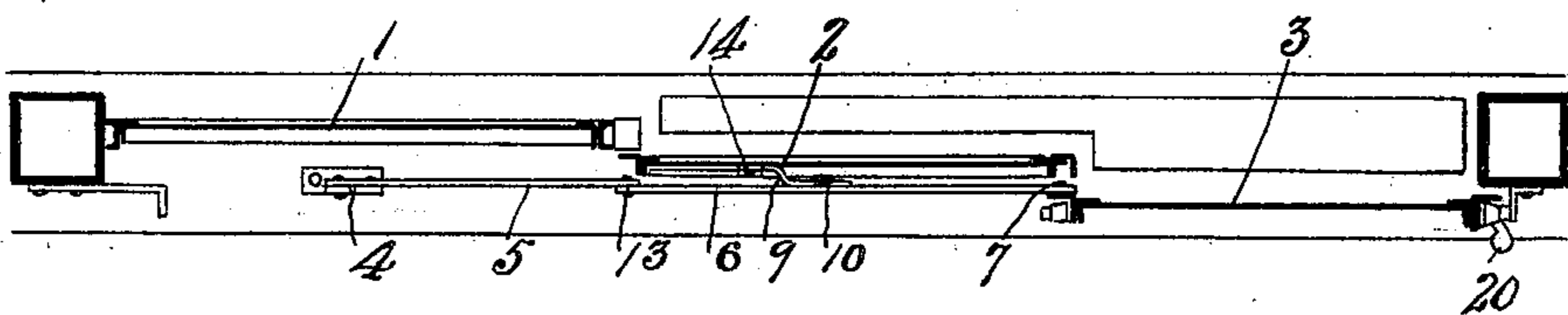


FIG. 3.

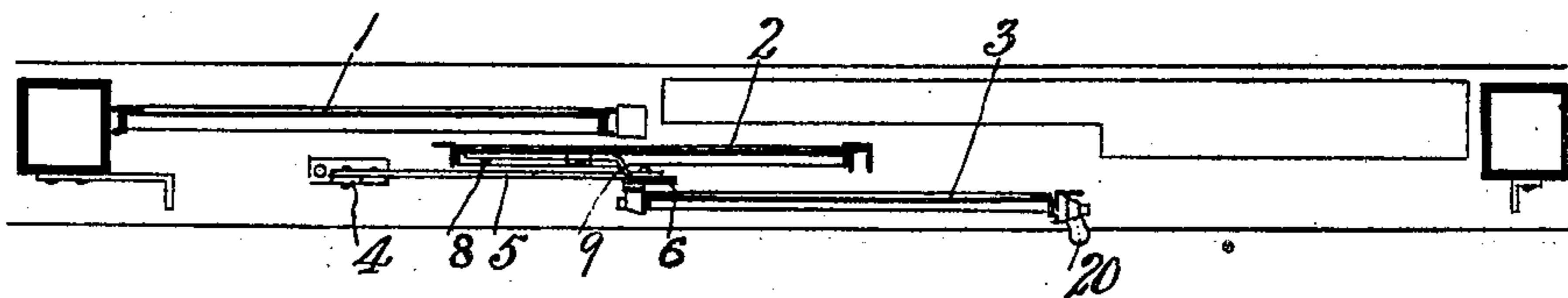
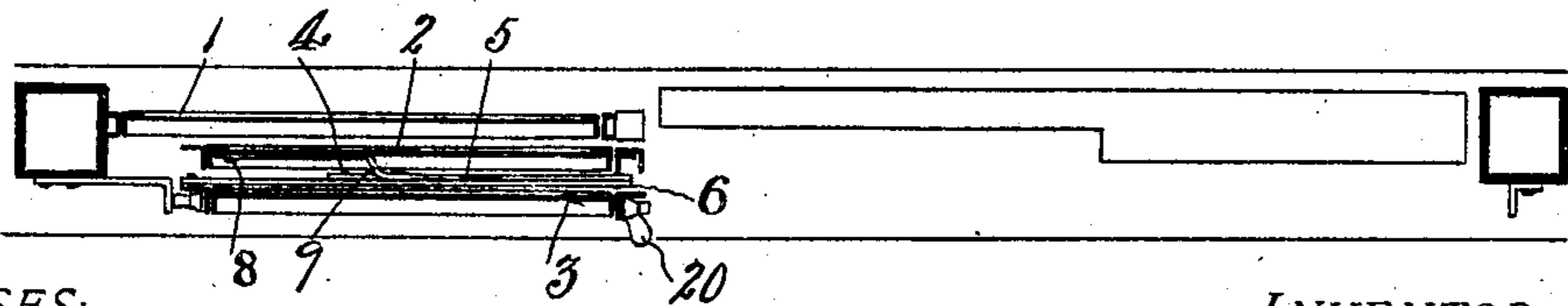


FIG. 4.



WITNESSES:

Chas. K. Davis.

Philo Burritt

INVENTOR

Richard B. Browne

BY

F. B. Brock

Attorney

UNITED STATES PATENT OFFICE.

RICHARD B. BROWNE, OF NEW YORK, N. Y.

DOOR OR GATE OPENING AND CLOSING DEVICE.

No. 887,307.

Specification of Letters Patent.

Patented May 12, 1908.

Application filed June 2, 1904. Serial No. 210,911.

To all whom it may concern:

Be it known that I, RICHARD B. BROWNE, of New York, in the borough of Brooklyn and State of New York, have invented certain new and useful Improvements in Door or Gate Opening and Closing Devices; and I do hereby declare the following to be a full and clear description thereof.

My invention relates to door operating devices.

The present invention deals with simple and efficient mechanism for operating sliding doors comprising two or more sections and automatically operating latches used in connection therewith.

The invention consists in the following construction and combination of parts, the details of which will first be fully described and the features of novelty then set forth in the claims.

Figure 1 represents a side elevation of a sectional sliding door having my invention applied thereto, the top of the elevation being broken away. Fig. 2 is a horizontal section through Fig. 1 showing the doors closed. Fig. 3 is a similar view showing the doors partly open. Fig. 4 is a view similar to Figs. 2 and 3 showing the doors open.

The concrete example of the invention given for purposes of illustration in this instance is an elevator shaft door, it being understood that the invention is applicable to all analogous uses.

In the drawings, 1 is a stationary panel covering part of the shaft opening. 2 and 3, sectional sliding doors. 4, a stationary bearing located at some convenient point, say upon the floor to one side of the door opening. 5, a link pivoted thereto, its opposite end being capable of an oscillating vertical movement. 6, a lever pivoted at its lower end 13 to the link 5 and having pivotal points of connection with the doors 2 and 3, in the one case directly and the other case indirectly. 7, a pivot bearing upon door 3 in which the upper end of lever 6 is secured. 8, a pivot bearing of the door 2. 9, a secondary link having its bearing on pivot 8 at one end and at its other end pivoted to lever 6 at an intermediate point 10 of the lever.

In the exemplifying structure adopted for purposes of illustration the vibrating or swinging lever or arm 6 is adapted to swing radially through a given radius in the open-

ing and closing movements of the doors, said lever having the sectional doors pivoted respectively thereto.

In the illustration furnished in Fig. 1 there is an entire absence of sliding connections between the main lever and its operating parts, such as pin and slot devices and the like, which provide for compensatory movements. The necessary adjustments of the lever system are provided for by the links 5 and 9 pivoted to the lever arm 6.

In Fig. 1 the doors are shown closed. When the doors are operated to allow passage through, say one-half the door opening, the parts are in the position shown by Fig. 3 and the lever mechanism is in the position shown by dotted lines 11 in Fig. 1. When the doors are fully opened the position is correctly shown in Fig. 4 and in dot-and-dash lines 12 in Fig. 1.

In the opening movement of the door it will be noticed that the free end of link 5 travels downwardly to a position substantially horizontal, the lever 6 assuming a substantially vertical position, and the link 9 moving to the left and assuming a different angle from that of the closed position. When the door is fully opened the link 5 again rises into substantially the same position it assumed when the door was closed. The lever 6 has swung beyond the vertical position toward the left at about the same angle from a vertical line that the lever assumed when the door was closed, and the link 9 is restored to about the same angle that it assumed when the door was closed. This construction results in a marked ease of operation and a complete avoidance of liability to get out of order.

Instead of the lever 6 being pivoted to links 5 to provide for compensatory movement, slot and pin bearings may be provided at 7 or 13 for performing the same function. The upper portion of the lever arm 6 is preferably curved as shown so as to carry the arm at its upper end behind the sectional doors at all times, thereby preventing any tendency of an accident by the hand being caught by the lever.

I do not limit the application of the principles of this invention to any specific construction, arrangement or number of doors, but anticipate the use thereof in any structure where such principles may be applicable.

What I claim as new and desire to secure by Letters Patent is:

1. The combination of a series of horizontally slidable doors, a lever pivoted to the
5 outer door, a compensatory link pivoted to a stationary point and to the free end of the lever, and a second link pivoted to an intermediate point of the lever and to the inner door.
- 10 2. The combination of a series of horizontally slidable doors, a compensatory link pivoted to a stationary point on the door sill, a lever pivoted to the outer door and to the free end of said compensatory link so as to
15 normally lie obliquely across the inner door, and a second link having a length equal to half the width of the inner door and pivoted at one end to the middle point of said lever and at the other end to the inner door.
- 20 3. The combination of a series of horizon-

tally slidable doors, a lever pivoted to the outer door having a curved upper portion, a compensatory link pivoted to a stationary point and to the free end of the lever, and a second link pivoted to an intermediate point
25 of the lever and to the inner door.

4. The combination of a series of doors, ways for sliding the same, a link pivoted to a stationary point, a lever pivoted to the link, another link pivoted at an intermediate
30 point of the lever at one end and to one of the doors at the other end and a pivotal connection between the lever and a second door.

In testimony whereof I have affixed my signature in the presence of two witnesses.
35

RICHARD B. BROWNE.

Witnesses:

ARTHUR C. ROBBINS,
JAMES GILMOUR.