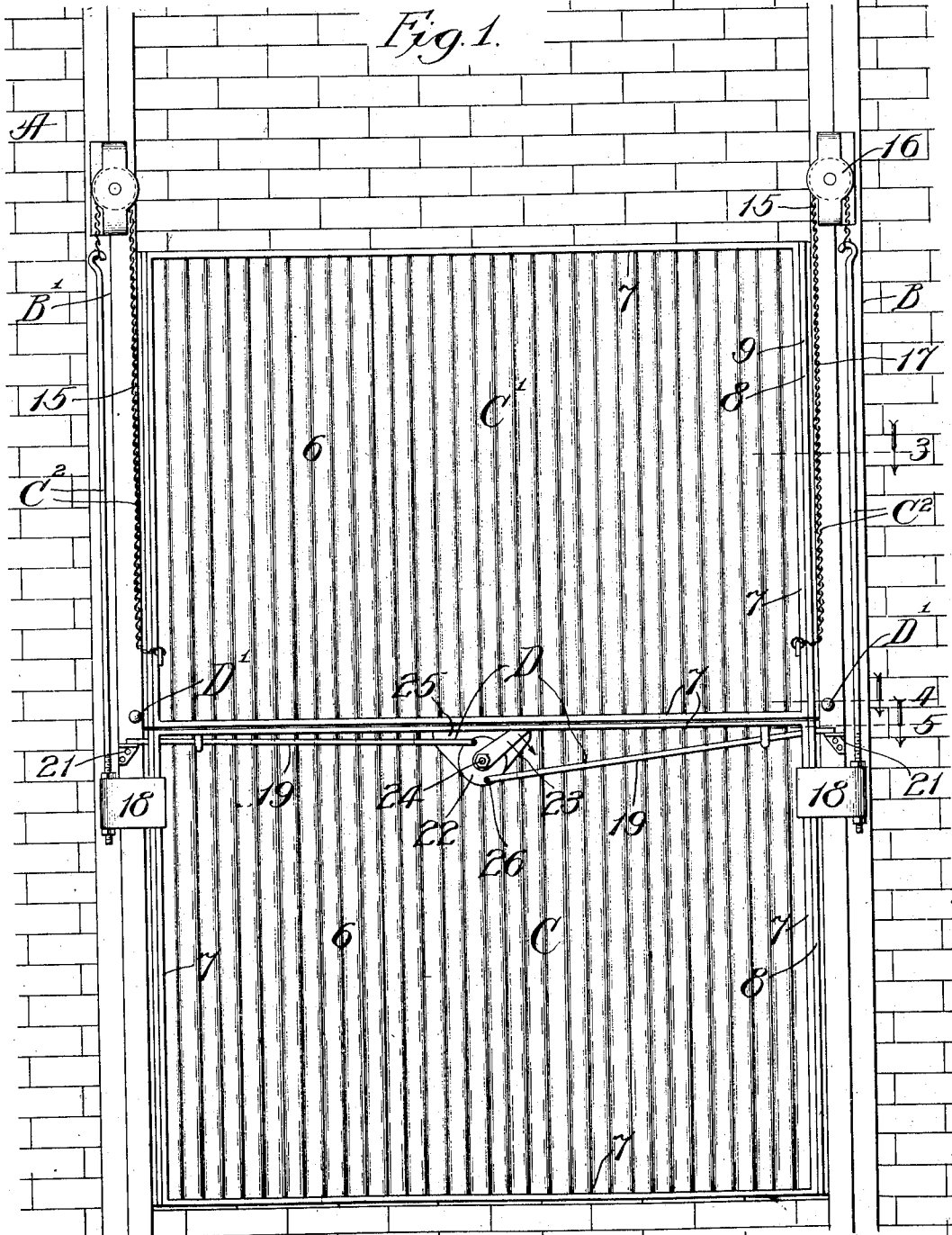


W. B. GERVAIS.
ELEVATOR DOOR.
APPLICATION FILED JUNE 24, 1909.

998,242.

Patented July 18, 1911.

2 SHEETS-SHEET 1.



Witnesses:

John Anders
Chas. H. Buell

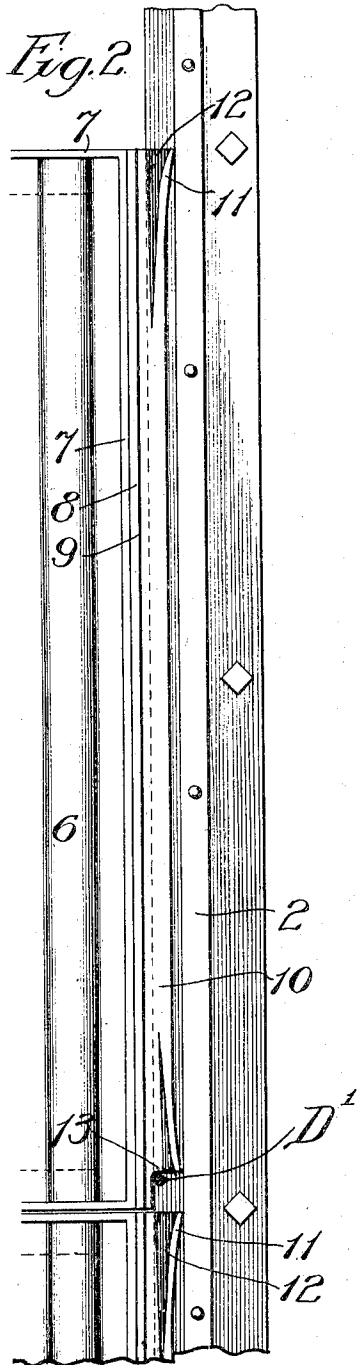
Inventor:

Wainwright B. Gervais.
By Deane, Smith, & Co., Attys.

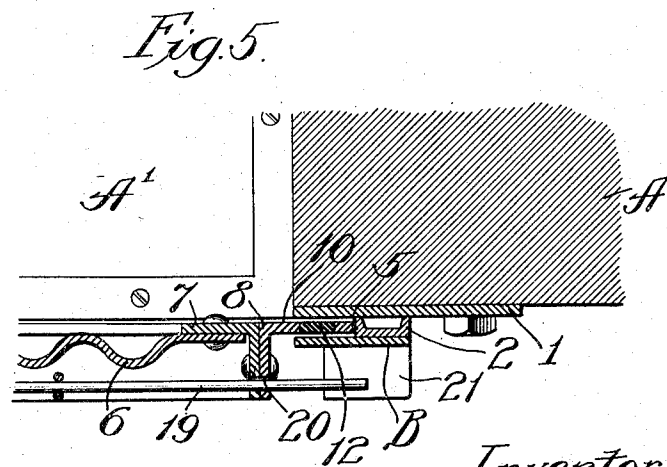
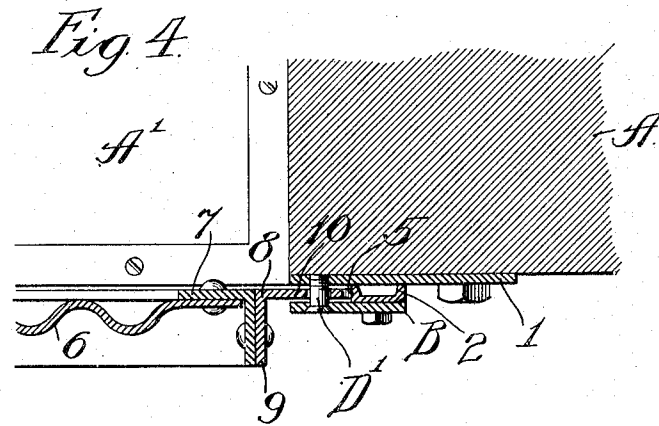
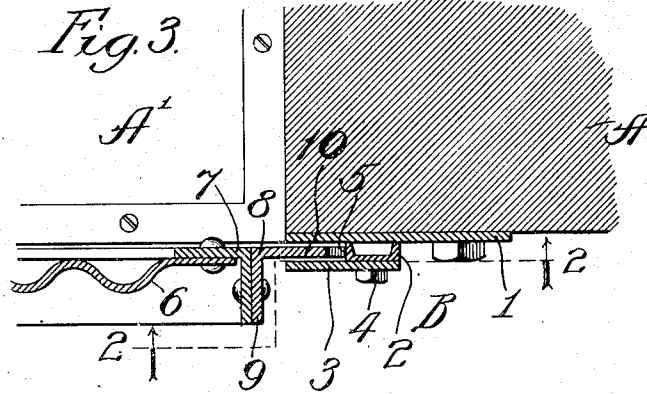
998,242.

Patented July 18, 1911.

2 SHEETS—SHEET 2.



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John Enders
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Inventor:
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UNITED STATES PATENT OFFICE.

WAINWRIGHT B. GERVAIS, OF CHICAGO, ILLINOIS, ASSIGNOR TO VARIETY MANUFACTURING COMPANY, OF CHICAGO, ILLINOIS, A CORPORATION OF ILLINOIS.

ELEVATOR-DOOR.

998,242.

Specification of Letters Patent.

Patented July 18, 1911.

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To all whom it may concern:

Be it known that I, WAINWRIGHT B. GERVAIS, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented a new and useful Improvement in Elevator-Doors, of which the following is a specification.

My invention relates particularly to elevator doors for the shafts of freight elevators; and my primary object is to provide a door of improved construction and operation, particular attention being paid to securing a proper relation between the door and its guides, and to maintaining the door in its closed condition in the event of fire.

The invention is illustrated in its preferred embodiment in the accompanying drawings, in which—

Figure 1 represents an inner broken elevational view of the wall of an elevator shaft having a door-opening equipped with a door constructed in accordance with my invention; Fig. 2, a broken sectional view taken as indicated at line 2 of Fig. 3 and showing the relation of one edge of a door-section to the guide therefor; and Figs. 3, 4 and 5, broken horizontal sectional views taken as indicated at the corresponding lines of Fig. 1.

In the construction illustrated, A represents the wall of an elevator-shaft having a door-opening A¹; B, B¹, guides connected with the inner surface of the wall A adjacent to the vertical sides of the door-opening; C, C¹, lower and upper door-sections, respectively, movable in the guides B, B¹, said lower and upper door-sections being joined by connections C², whereby said sections serve to counterbalance each other; D, latching or locking mechanism connected with the lower door-section; and D¹, stops or supports carried by the guides B, B¹, and serving to limit downward movement of the upper door-section C¹.

The wall-construction A may be of any approved type, a brick wall being illustrated.

Each of the guides B, B¹, in the construction illustrated, comprises a bar or plate 1 connected with the marginal portion of the inner surface of the wall bordering the door-opening; a channel-bar 2, which serves as a spacing-member; and a narrow bar 3

overlapping said channel-bar, said bars 2 and 3 being secured to the plate 1 and the wall A by means of bolts 4. As clearly appears from Fig. 3, the inner portions of the bars 1 and 3 are separated by a space adapted to receive the flange of a metal door, and the inner edge-surface 5 of the channel-bar 2 is adapted to afford an edge-bearing for the door.

Each of the door-sections C, C¹ preferably comprises a corrugated sheet metal body 6 equipped at its upper, lower and lateral margins with angle-bars 7. Connected with the vertical angle-bars 7 of the door-sections are angle bars 8 having inturned flanges 9 connected with the adjacent flanges of the angle-bars 7 and having out-turned flanges 10 received by the guides B, B¹. The flanges 10 are split at their upper and lower ends, the severed portions being bent outwardly to afford bearings 11 which contact with the bearing-surfaces 5 of the channel-bars 2. The spaces formed by bending the members 11 outwardly are filled with lead or other material 12 adapted to melt at a comparatively-low temperature, whereby, when the door expands under the high temperature developed by a fire, the spaces filled by the material 12 will contract, so that excessive pressure will not be exerted between the edges of the door and the guides therefor. The lower end-portions of the flanges 10 of the upper door-section are cut away or recessed to afford shoulders 13 which rest, in the closed condition of the door, upon the studs D¹ with which the guides B, B¹ are equipped. Thus, secure supports for the upper door-section are provided which are adapted to prevent the door-section from falling in case of fire.

The connections C² between the door sections comprise chains or flexible members 15 connected with the lower portions of the angle-bars 7 of the upper door section and passing over pulleys 16; rods 17 connected with said chains; and members 18 connected with the lower ends of said rods and carried by the upper lateral edge-portions of the lower door-section, these connections being well understood in the art as a means whereby the door-sections may be made to counterbalance each other.

The latching or locking device D con-

5 nected with the lower door-section comprises
 latch-bars or rods 19 extending transversely
 across the upper portion of the door-section
 from the central portion thereof and pro-
 10 jecting through perforations 20 (Fig. 5)
 with which the inturned flanges of the
 angle-bars 7 and 8 are provided; stationary
 stops or rests 21 carried by the guides B
 and B¹; and a disk 22 equipped with an
 15 actuating handle 23 and supported on a stud
 24 carried by a bracket or plate 25 with
 which the lower door-section is equipped
 centrally at its upper portion, the inner ends
 of the bars 19 being connected with the disk
 22 by pivots 26.

20 The manner of operation will be readily
 understood. When it is desired to open the
 door, the handle 23 is turned in the direction
 indicated by the arrow in Fig. 1 to release
 25 the latch-bars 19, whereupon the upper
 door-section may be elevated and the lower
 door-section depressed. In the reverse oper-
 ation, the door-sections are brought together
 and the lower door-section is locked by the
 30 mechanism D, while the upper section rests
 upon the studs D¹. Thus it will be under-
 stood that both door-sections are secured
 against falling in the event of fire, which
 might have the effect of breaking the con-
 35 nections C². Moreover, each door-section is
 supported independently of the other when
 the door-sections are in the closed position.
 The bearing-members 11 are normally in
 contact, or substantially in contact, with the
 40 adjacent surfaces 5 of the channel-bars 2
 of the guides, so that racking of the door-
 sections in the guides is prevented in the
 operation of the door. The fusible fillets
 12, under normal conditions, operate to stay
 45 or brace the otherwise yielding members 11,
 but in case of fire, said fillets become fused
 and allow the members 11 to be bent in-
 wardly to compensate for the expansion of
 the door, so that the door-sections will not
 50 become wedged or stuck in their guides and
 incapable of being moved while a fire is in
 progress or after the fire has occurred.

The foregoing detailed description has
 been given for clearness of understanding,
 55 and no undue limitation is to be understood
 therefrom.

The details of the latching or locking
 mechanism D with which the lower door is
 60 equipped are preferably as shown and de-
 scribed, but may be varied according to de-
 sire, the important consideration being that
 the lower door-section shall be equipped
 with operable mechanism for locking and
 releasing the same to secure the door-section
 against dropping, while still permitting it
 to be operated.

What I regard as new, and desire to se-
 cure by Letters Patent, is—

1. In a door of the character set forth,
 the combination of a pair of guides, a door- 65
 section slidable therein, bearing-members be-
 tween the edge-portions of the door-section
 and said guides, and fusible supports for
 said bearing-members.

2. In a construction of the character set 70
 forth, the combination of a pair of guides,
 a door-section slidable therein and having
 its edge-portions equipped with bearing-
 members projecting normally beyond the
 lateral edges of the door, and fusible fillets 75
 supporting said bearing-members.

3. In a construction of the character set
 forth, the combination of a pair of guides,
 a slidable door-section having flanges lo- 80
 cated in said guides, said flanges being split
 and the severed portions bent outwardly to
 afford bearing-members, and fusible fillets
 in the spaces afforded by bending said bear-
 ing-members outwardly.

4. In a door, the combination of a pair 85
 of guides, upper and lower door-sections
 movable in said guides, connections between
 said door-sections whereby the door-sections
 serve as counterbalances for each other,
 latching mechanism carried by the lower 90
 door-section, stops co-acting with said latch-
 ing mechanism, and stops adapted to sup-
 port the upper door-section independently
 of the lower door-section.

5. In a construction of the character set 95
 forth, the combination of a pair of guides,
 upper and lower door-sections movable in
 said guides, stops carried by said guides and
 serving to limit the downward movement of
 the upper door-section, connections between 100
 said door-sections whereby said door-sec-
 tions serve as counterbalances for each other,
 latching mechanism carried by the lower
 door-section and stops carried by said guides
 and co-acting with said latching mechanism. 105

6. In a construction of the character set
 forth, the combination of a pair of vertical 110
 guides, upper and lower door-sections mov-
 able in said guides, yielding bearing-mem-
 bers carried by the upper and lower portions
 of said door-sections, fusible fillets normally
 maintaining said bearing-members in the
 extended position, connections between said
 door-sections whereby said door-sections
 serve to counterbalance each other, and latch- 115
 ing mechanism connected with the lower
 door-section.

WAINWRIGHT B. GERVAIS.

In presence of—

J. G. ANDERSON,
 R. A. SCHAEFER.