

S. D. HART & A. HOEFER.

DOOR.

APPLICATION FILED NOV. 16, 1908.

946,038.

Patented Jan. 11, 1910.

2 SHEETS—SHEET 1.

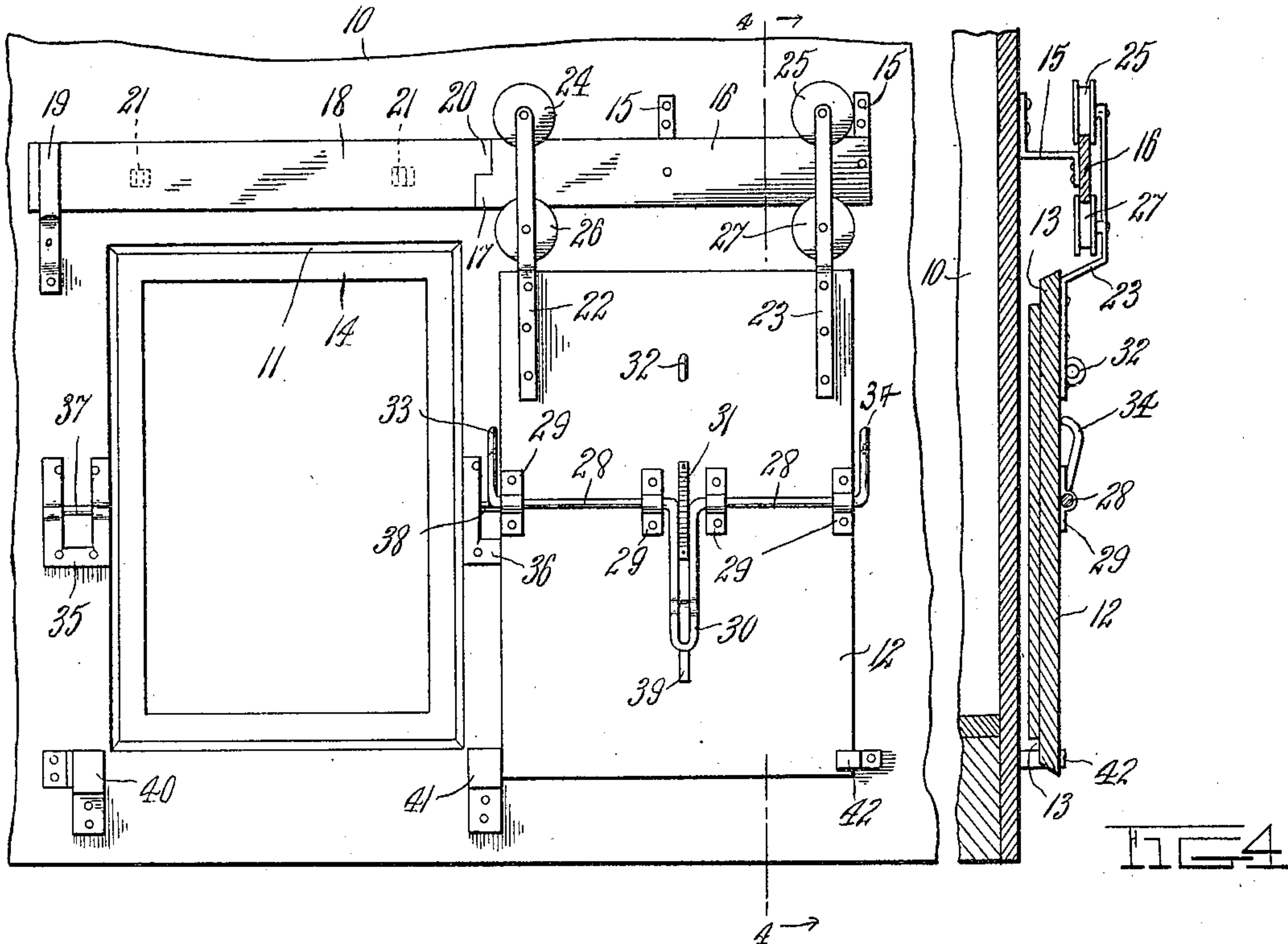
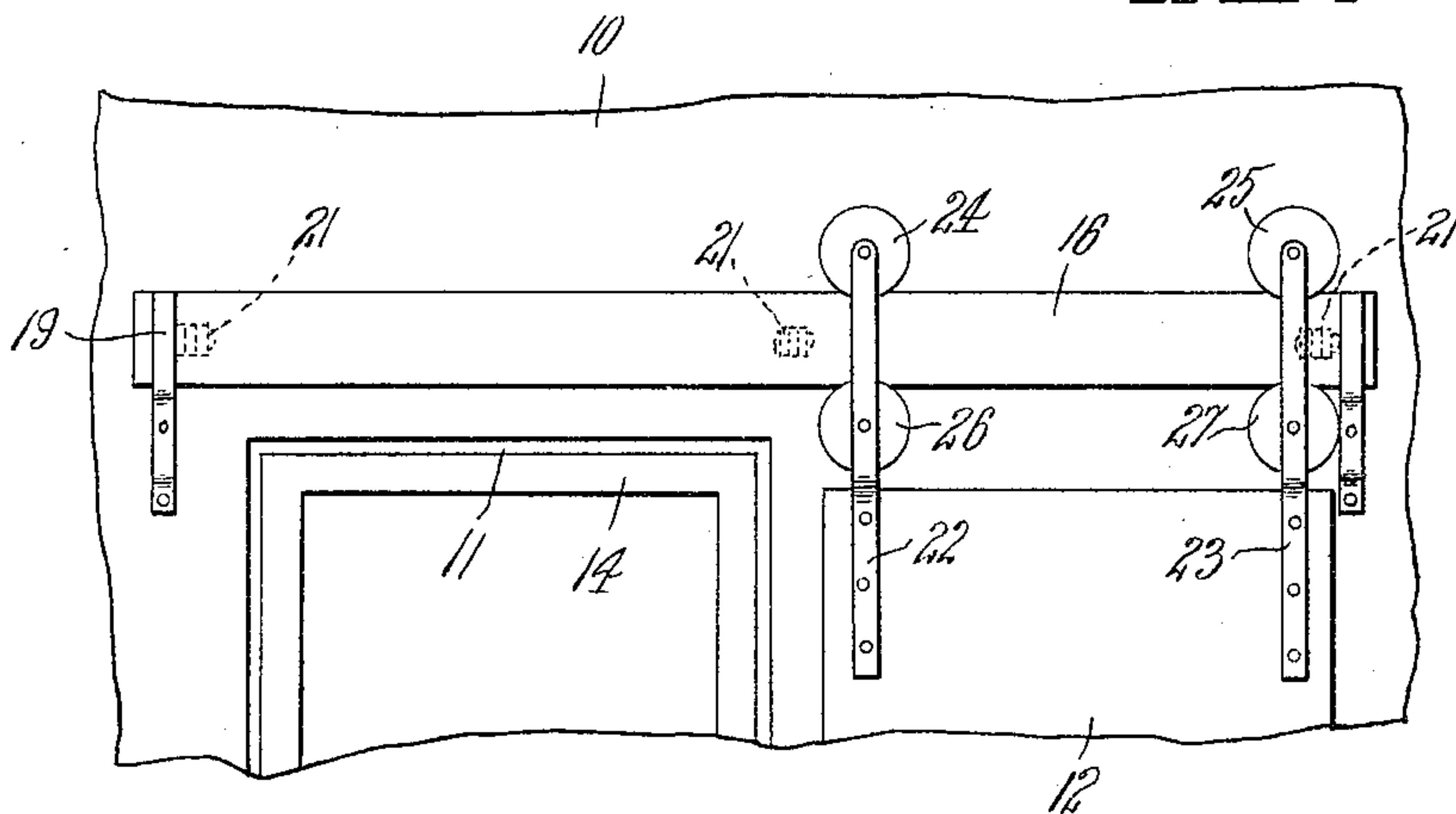


FIG. 1

FIG. 4



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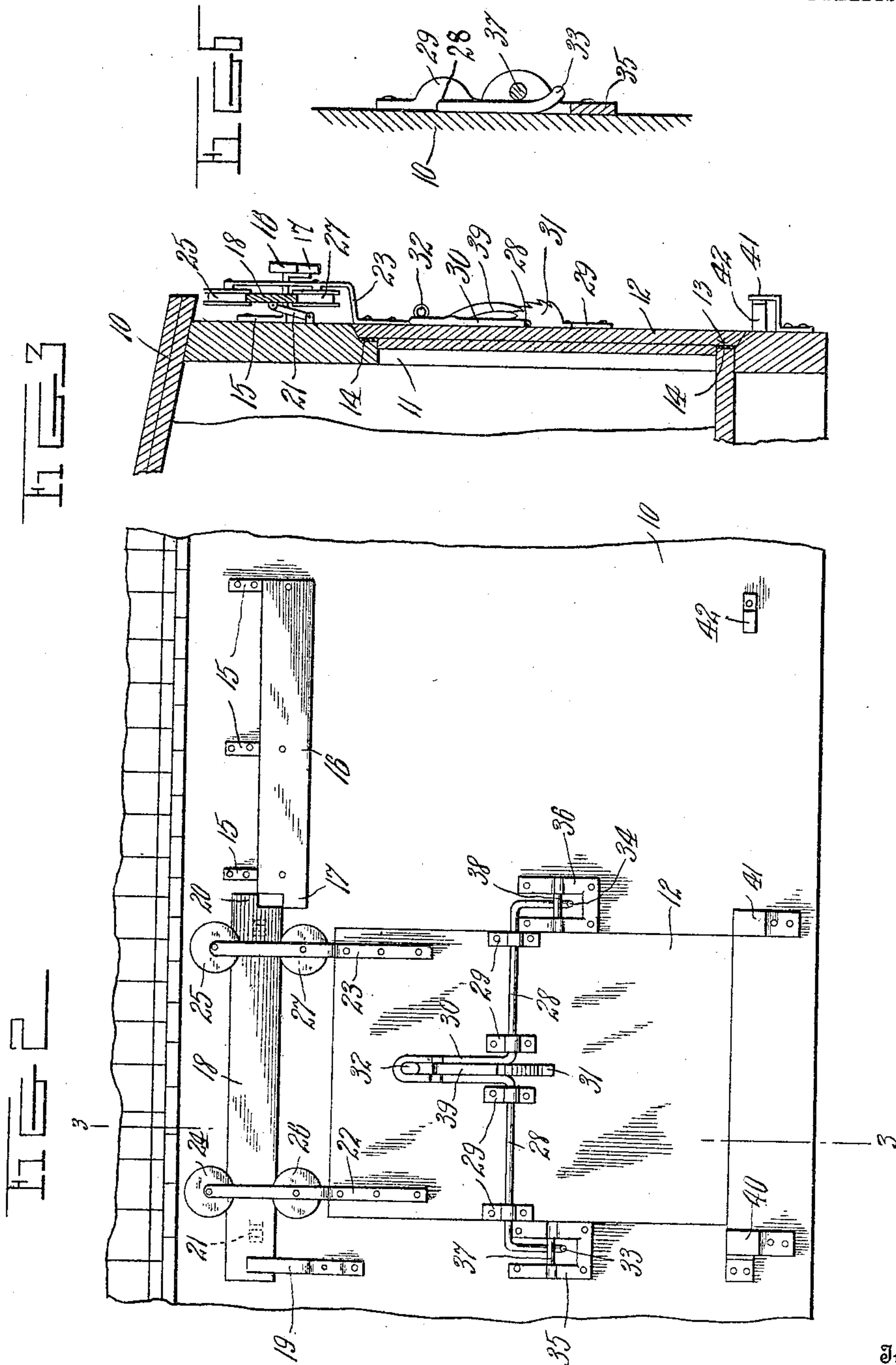
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UNITED STATES PATENT OFFICE.

STEPHEN D. HART AND ALBERT HOEFER, OF VILLARD, MINNESOTA.

DOOR.

946,038.

Specification of Letters Patent. Patented Jan. 11, 1910.

Application filed November 16, 1908. Serial No. 462,847.

To all whom it may concern:

Be it known that we, STEPHEN D. HART and ALBERT HOEFER, citizens of the United States, residing at Villard, in the county of Pope, State of Minnesota, have invented certain new and useful Improvements in Doors; and we do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to doors, more particularly to doors employed in connection with freight cars, but which may be applied to doors employed in connection with other structures of various kinds, and has for one of its objects to simplify and improve the construction and increase the efficiency and utility of devices of this character.

Another object of the invention is to provide a simply constructed door adapted to be fitted bodily into its seat when closed and to be moved outwardly and thence laterally to uncover the doorway opening.

With these and other objects in view, the invention consists in a guide track movable toward and away from a structure having a doorway opening, and a door slidable upon said track and adapted to be moved with the track toward the structure to enable it to be seated in the doorway opening, and to be moved outwardly with the track when the door is to be opened.

The invention further consists in a guide track having a stationary portion and a movable portion, the movable portion located opposite the doorway opening and adapted to interlock with the stationary track portion when in outward position, and a door slidable upon said track and adapted to be moved with the movable track portion when the door is to be closed.

The invention further consists in certain novel features of construction as hereafter shown and described, and in the drawings is shown the preferred embodiment of the invention.

The improved device may be applied to structures of various kinds, but is more particularly designed for use in connection with refrigerating devices wherein it is requisite that a door shall be caused to fit closely in its doorway opening.

The improved device may be applied to stationary structures such as ice-houses, refrigerators, and the like, or to refrigerator

cars and like structures, but for the purpose of illustration the improved device is shown applied to a conventional refrigerating structure, and in the drawings thus employed Figure 1 is a side elevation of a portion of a structure including a doorway opening with the improved device applied to a door in open position. Fig. 2 is a similar view with the door in closed position. Fig. 3 is a section on the line 3—3 of Fig. 2. Fig. 4 is a view in section on the line 4—4 of Fig. 1. Fig. 5 is a detail view illustrating a modified construction of the track. Fig. 6 is an enlarged detail of one of the door securing devices.

The structure to which the improved device is applied is represented as a whole at 10 and provided with a doorway opening surrounded by a rabbet or seat 11, while the door represented as a whole at 12 is formed with a surrounding recess 13 to engage in the rabbets and with its edge inclined to fit a corresponding incline in the rabbet, to cause the door to closely engage in the doorway opening and to prevent the entrance of air when the door is closed. A suitable packing 14 of rubber or like material is preferably employed to further increase the air tight qualities of the closure.

Supported by brackets 15 from the structure 10 at one side of the doorway opening is a longitudinal track section 16, the end of the track next to the doorway opening having a reduced portion 17. Movably connected to the structure 10 opposite the doorway opening is another track section 18, the latter supported when in its outward position at one end by a bracket 19 and with a reduced portion 20 at the other end adapted to engage the reduced portion 17 of the track section 16. By this means when the track section 18 is in its outward position it is arranged in longitudinal alinement with the track section 16, the two track sections thus forming a continuous track coupled by the reduced portions 17—20, as shown. The track section 18 is connected to the structure 10 by relatively long double hinges 21, so that the track section 18 may be folded upwardly relatively close to the structure 10, as shown in Fig. 3, the object to be hereafter explained.

The door 12 is provided with spaced brackets 22—23 carrying grooved supporting rollers 24—25 engaging the upper edges of the track sections 16—18, and likewise

provided with grooved guard rollers 26—27 engaging the under edges of the track sections so that the door is slidably mounted upon the track sections, and will not run off from the same when in operation. By this arrangement it will be obvious that when the track section 18 is in its outward position or engaged with the track section 16, the door may be run back and forth upon both track sections and disposed opposite the doorway opening or opposite the structure 10 at one side of the doorway opening, as shown in Fig. 1.

When it is desired to dispose the door in closed position it is moved laterally until the rollers 24—25 are wholly upon the movable section 18. Then by moving the door inwardly and exerting an upward strain thereon the track section 18 is caused to rest upon its hinges and move inwardly into the position shown in Fig. 3 with the track section 18 in close proximity to the outer face of the structure 10, this position causing the door 12 to enter the doorway opening and closely engaged by its encircling reduced portion 13 in the seat 11 surrounding the doorway opening. When it is desired to open the door it is only necessary to open it outwardly, which action causes the movable track section to resume its former position in alinement with the track section 16, and thus disposes the door in position to be moved laterally into position, as shown in Fig. 1.

An approved operating and fastening device is employed upon the door 12 to not only operate the door to cause it to be elevated and moved into the doorway opening, but likewise operates to lock the door in its closed position. This operating mechanism consists of a shaft 28 mounted for oscillation in suitable bearings 29 on the door 12 and provided with a laterally extending operating handle 30, formed by bending the central portion of the shaft laterally with an interval between the sides of the bent portion, the outer end fitting over the staple 32 when the member 30 is in its upward position, as shown in Fig. 2, the staple to receive a padlock or other fastening device. Attached to the door 12 in the path of the spaced portions of the handle 30 is a toothed segment 31, and swinging from the handle portion is a pawl 39 engaging the teeth of the segment and holding the handle in its elevated position. The outer ends of the shaft 28 are bent laterally and terminate in hooks 33—34. Attached to the structure 10 at the sides of the doorway opening are plates 35—36 having pins 37—38 with which the hooks 33—34 engage when the handle member 30 is operated. When the door 12 is in open position the handle member 30

will hang downwardly and the hook portions 33—34 will extend upwardly, as shown. When the door is moved into position upon the track section 18 with the latter in its outward position, the upward movement of the handle 30 will cause the hooks 33—34 to engage over the pins 37—38, and then the continued upward movement of the handle will cause the door to be elevated through the leverage applied by the rotation of the shaft 28 and force the door into its seat, carrying the movable track section 18 with it, as before described. This upward movement of the handle 30 will cause the pawl 39 to move over the segment 31 and engage with its teeth, as before described. The door may further be secured by brackets 40—41 attached to the structure 10 below the doorway opening, and a catch 42 may also be employed upon the structure 10 to receive the outer edge of the door when in open position, as shown in Fig. 1.

If preferred, the track may be arranged with the movable portion extending the whole length as shown in Fig. 5.

The improved device is simple in construction, can be inexpensively manufactured, and applied to various structures requiring a door of this character.

What is claimed, is:—

1. A structure having a door-way opening, a guide track, means for movably coupling said track to said structure, a door movable upon said track, stop devices carried by said structure, a rock shaft carried by said door and provided with lateral hooks engaging said stop devices when the door is in closed position, said shaft having a loop bent laterally therefrom to form a handle having spaced sides, a toothed segment carried by said door and extending between the sides of said loop handle and forming a guide thereto, and a pawl swinging from said handle and engaging the teeth of said segment.

2. A structure having a doorway opening, a movable guide track opposite said opening, means for supporting said guide track, a stationary guide track, means for supporting the stationary guide track spaced from the structure adjacent to said doorway opening, means for coupling the movable track when in its outward position to the stationary track, and a door movable upon said track sections, whereby said door when arranged upon the movable track may be engaged within the doorway opening.

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

STEPHEN D. HART.
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Witnesses:

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