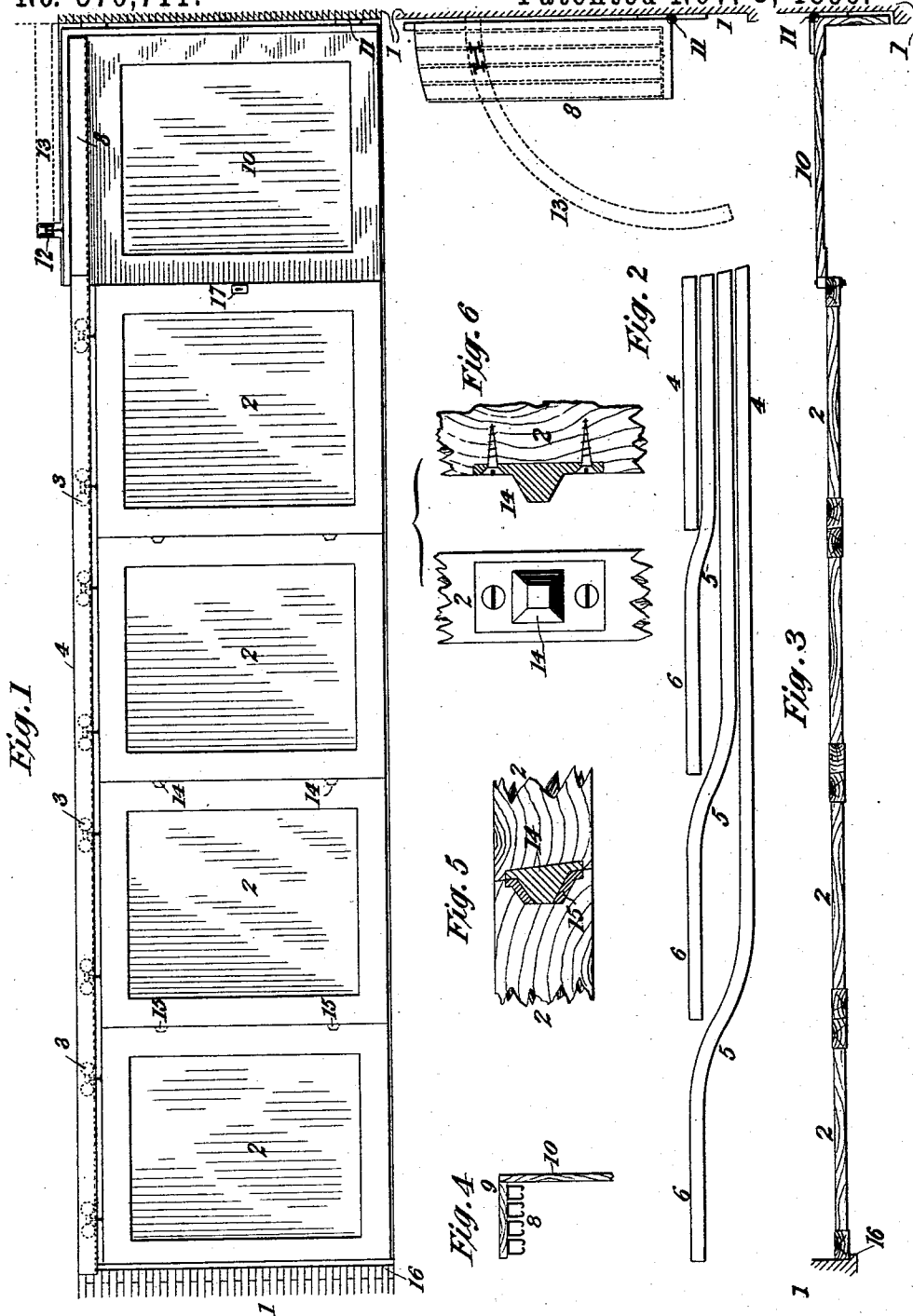


(No Model.)

H. B. NEWHALL.
TROLLEY DOOR SYSTEM.

No. 570,711.

Patented Nov. 3, 1896.



Witnesses:
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UNITED STATES PATENT OFFICE.

HENRY B. NEWHALL, OF PLAINFIELD, NEW JERSEY.

TROLLEY-DOOR SYSTEM.

SPECIFICATION forming part of Letters Patent No. 570,711, dated November 3, 1896.

Application filed September 3, 1895. Serial No. 561,204. (No model.)

To all whom it may concern:

Be it known that I, HENRY B. NEWHALL, a citizen of the United States, residing in Plainfield, county of Union, and State of New Jersey, have made certain new and useful Improvements in Trolley-Door Systems, of which the following is a specification, reference being had to the drawings accompanying and forming a part of the same.

The present invention relates to a trolley-door system involving a plurality of doors carried on a corresponding number of separate tracks so arranged that the doors when closed are arranged edge to edge in a common plane, and when in open position they are arranged face to face or in separate parallel planes.

In many buildings it is desirable to wholly open a door-space of much greater extent than it is practicable to cover by one or two doors, and it is common to have a series of doors and a series of parallel tracks so arranged that the doors when closed will overlap one another in a staggered or step-by-step relation, and when the doors are open they are in position side by side, occupying in depth that of all the tracks and in breadth that of one door. This position of the doors when closed requires, when it is desired to lock the doors, that each one be secured to the adjacent door.

My plan has for one of its essential objects to bring the doors into a common plane, whereby their edges can be caused to interlock and the whole series become practically one door requiring but a single lock.

Another object is to provide a door pocket or structure adapted to receive all the doors when in open position and arranged face to face, which pocket is pivotally supported and adapted to swing or otherwise move out of the door-space for the purpose of fully freeing such space.

Figure 1 of the drawings illustrates a front elevation view of a trolley-door structure or system embodying my invention, the doors being shown in closed position. Fig. 2 shows a plan view of the tracks on which the doors run and of the pocket structure that receives the doors, said pocket being shown as turned inwardly from the tracks. Fig. 3 shows a horizontal section of the doors when in closed position, Fig. 1. Fig. 4 is a detail cross-section of the top of the pocket structure. Fig. 5 is an enlarged detail horizontal section of the edges of two doors in closed position and through one of the interlocking bosses and sockets on the same. Fig. 6 shows an elevation edge view of the door and one of said bosses, and also a vertical section of the same.

Referring to the views in detail, 1 represents the side walls of a building, the space between these walls being the door-space. 2 represents four or any other desired number of separate doors for closing said space, the doors being each hung by trolleys 3 on a track 4, preferably of tubular form, as seen in Fig. 4. The separate tracks are secured to the building in any suitable manner and are curved, as shown at 5, Fig. 3, so that their left-hand branches *b* end in a common vertical plane, while their right-hand ends are side by side in a common horizontal plane. The right-hand ends 8 of the tracks are carried by the shelf or top 9 of the pocket structure, they being secured to such top, as seen in Fig. 4, these portions of the tracks disconnectedly meshing with the main tracks 4 when the pocket is in the position of Figs. 1 or 3. This pocket structure, for the purpose of clearness, is shown as being only composed of the vertical partition or door 10 and the horizontal shelf 9, though it may be otherwise constructed. The pocket is hinged at 11 to the side walls 1, and it may be further supported by a trolley 12, secured thereto and running on the circular track 13, fixed to the building.

Each door is provided with one or more bosses or lugs 14 and sockets 15; the lugs of one door meshing, when the doors are in closed position, with the sockets of an adjacent door, as seen by dotted lines in Fig. 1, as also in Fig. 5. The left-hand door when in closed position engages the wall of the building, as by its edge passing under the door-casing 16 or other catch adapted to hold the bottom of the door from being swung outwardly. 17 is a lock on the right-hand trolley-door that secures this door to the pocket-door.

The operation will now be plain. Assuming the doors to be in the pocket and the latter turned back within the building, as seen in dotted lines, Fig. 2, and that it is desired to close the door-space, the pocket will be turned to closing position, Fig. 3, and then

the doors will be successively run out, beginning with the first one, which is to go to the extreme left. As the doors are brought edge to edge their bosses and sockets interlock and they are secured together as one. Then simply locking or otherwise securing the right-hand trolley-door to the pocket-door fixes all the doors, so that none of them can be moved either along its track or by swinging out its bottom edge. In this connection it is to be noted that there is no necessity for a floor-rail, groove, or other similar means for engaging the bottom of the doors to hold them against being swung outwardly when closed; also that there is no need for locks or bolts from door to door, as in the case of the doors being arranged on the staggered plan.

In opening the door-space the left-hand door is started, taking with it all the others, until its sockets slip from off the next door by the deviation of its track, and when it is opposite the second door the latter, with the former, is similarly manipulated, and so on until all the doors are run into the pocket, whereupon the latter is turned to whatever position desired, resulting in further opening the door-space. Of course, if preferred, the doors can be singly run into the pocket, beginning with the right-hand one.

Various modifications of this system are possible, and I do not limit myself to the forms shown. The essential features are the door-tracks curving from parallel relation to a common linear position and a movably-supported pocket or door-receiving structure.

What is claimed as new is—

1. In combination in a trolley-door system, a series of separate doors, and a series of separate tracks, arranged parallel to each other at one end, of the system, and successively terminating in a common line, and an interlocking device carried by said doors to prevent lateral or swinging movement yet permitting them to be actuated simultaneously and to automatically disengage themselves as they slide on the different tracks, substantially as set forth.

2. In combination with a series of tracks, and a series of doors, adapted when closed to come edge to edge, of lugs arranged upon said doors to mesh with sockets provided for the next adjoining door of said series, said lugs and sockets being so formed and arranged as to prevent lateral or swinging movement, yet permit the automatic disengagement of said doors as they slide on the different tracks, substantially as and for the purposes set forth.

3. In combination in a trolley-door system, a series of separate doors, a series of separate tracks arranged parallel to each other at one end of the system and successively extending to and ending in a common line, whereby the separate doors can be closed together edge to edge or in a common plane and can be in open position arranged face to face, and a movably-supported pocket or door-receiving structure, substantially as set forth.

HENRY B. NEWHALL.

Witnesses:

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