No. 828,658. PATENTED AUG. 14, 1906.

J. R. HUSSEY.

SLIDING DOOR CONSTRUCTION.

APPLICATION FILED APR. 1, 1905.

3 SHEETS—SHEET 1.

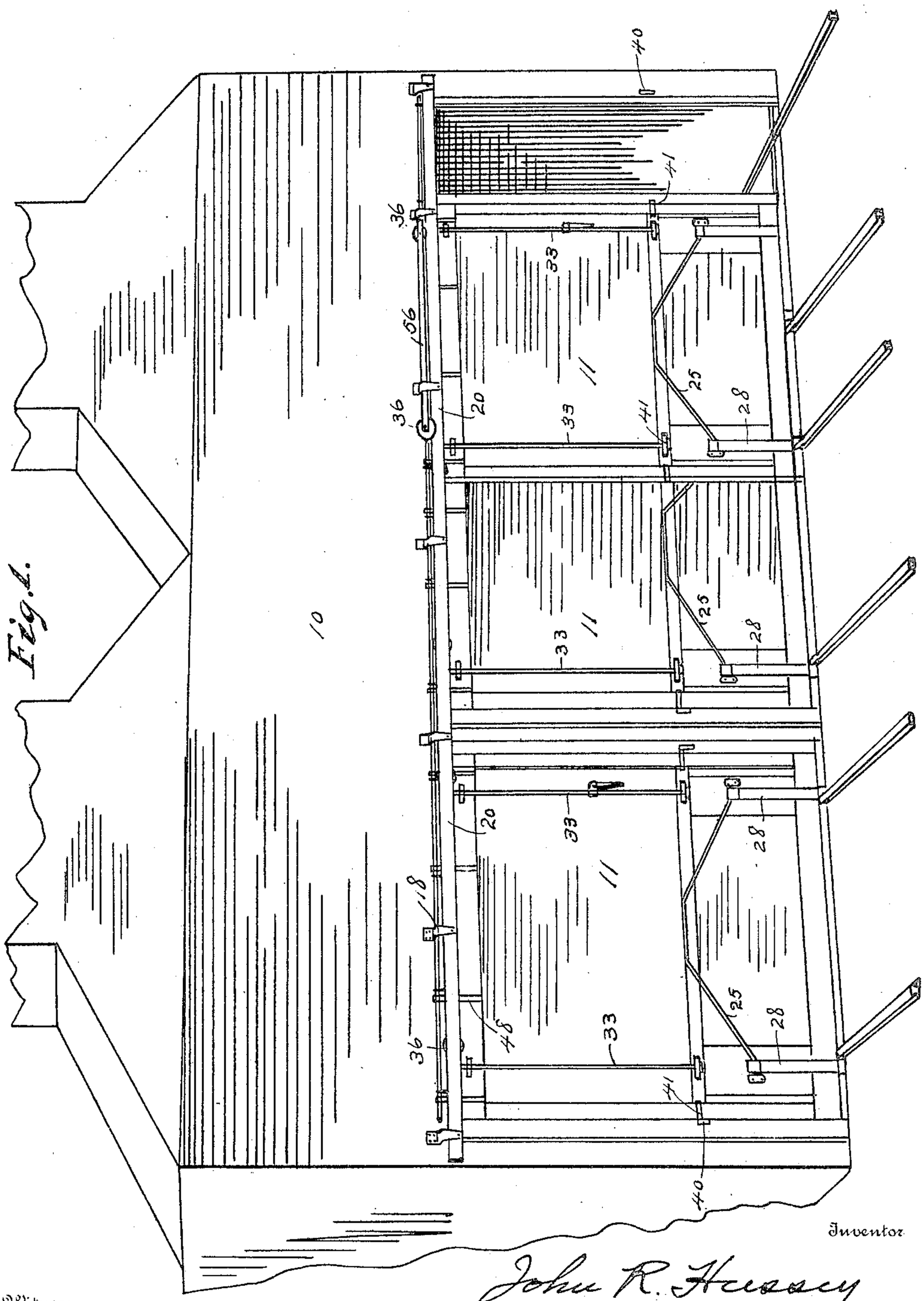


Fig. 1.

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Fig. 3.

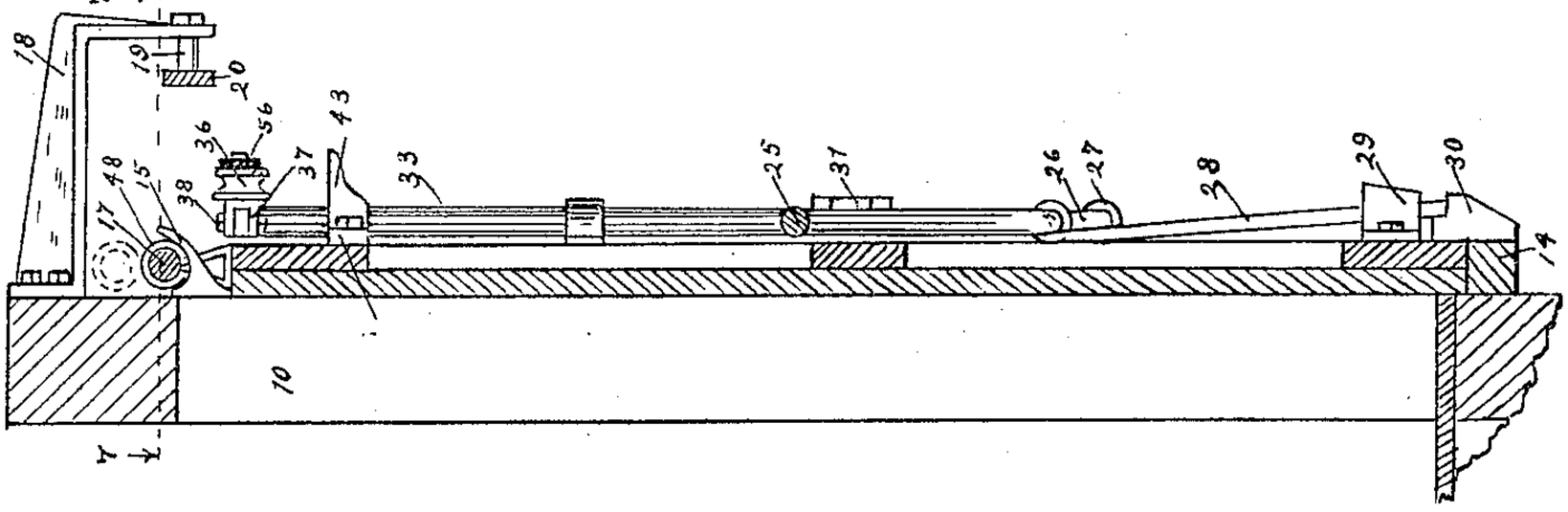
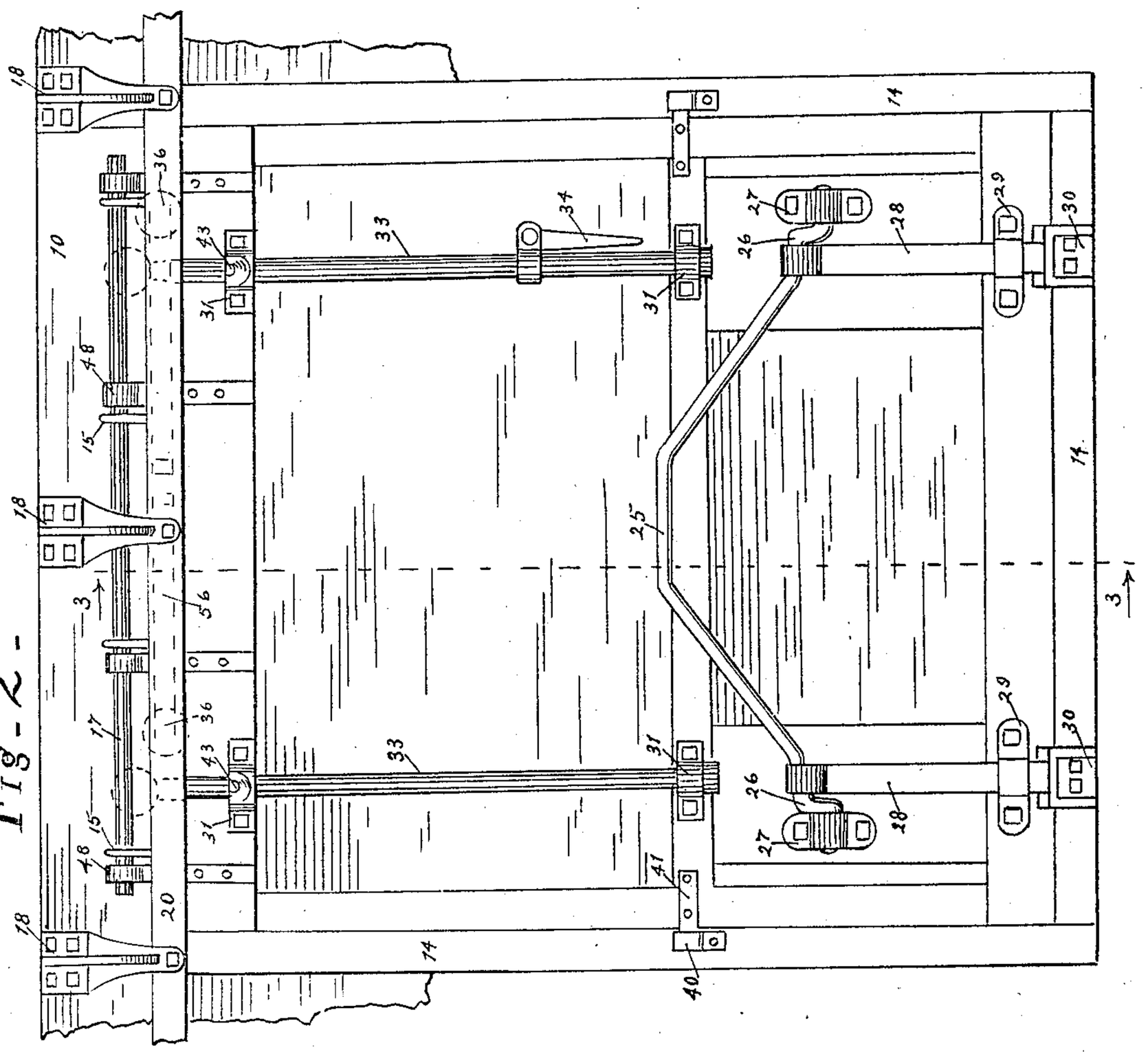



Fig. 2.

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3 SHEETS—SHEET 3.

Fig. 6.

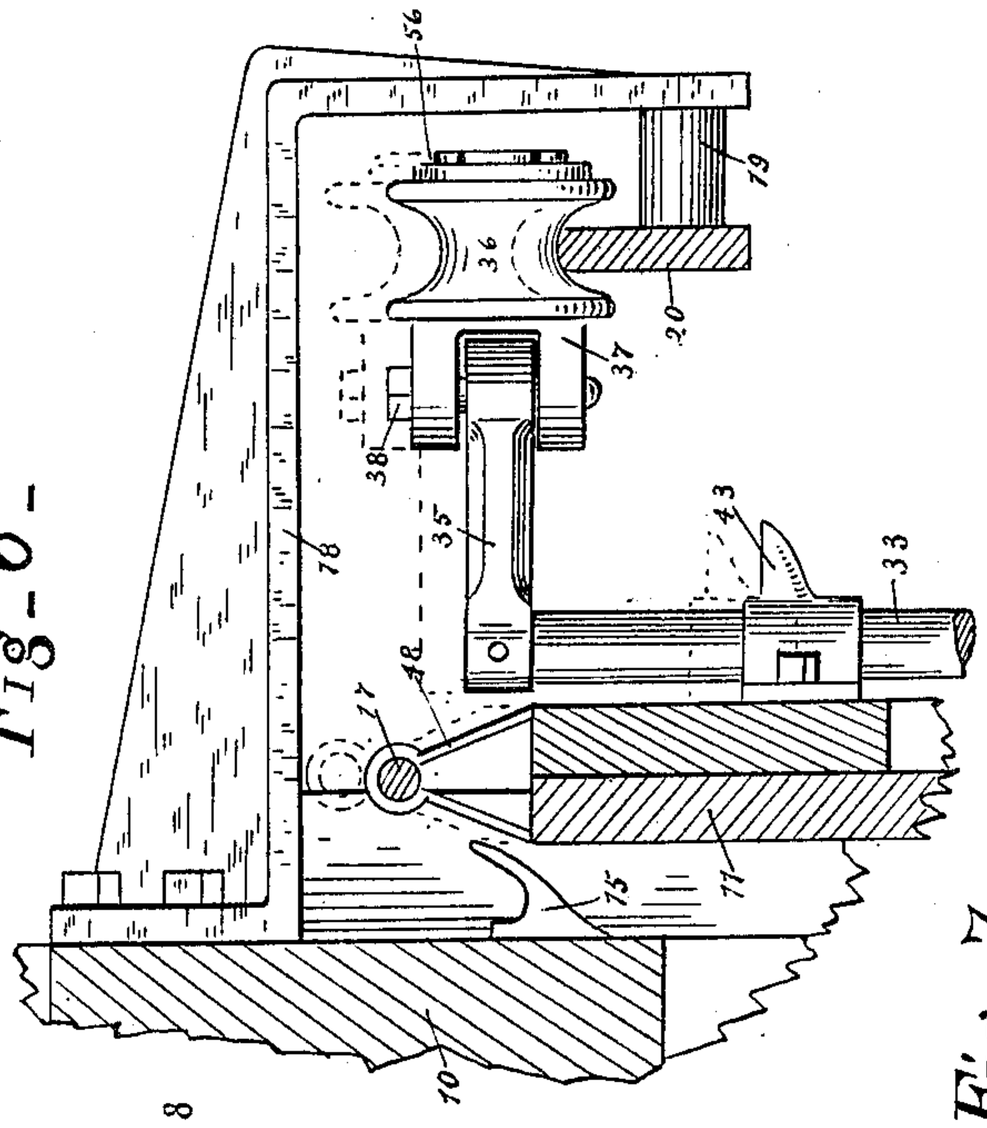



Fig. 8.

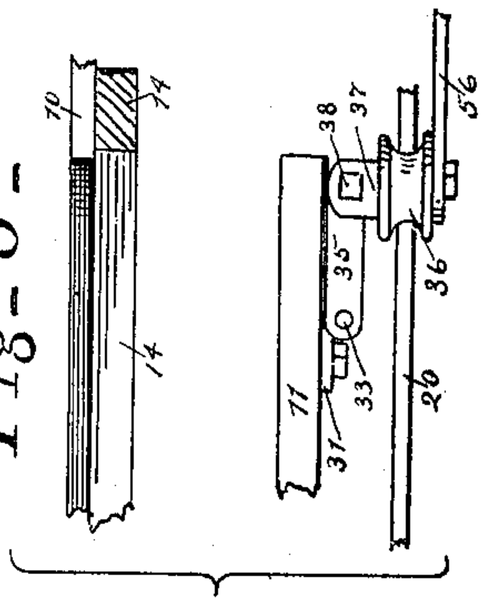



Fig. 7.

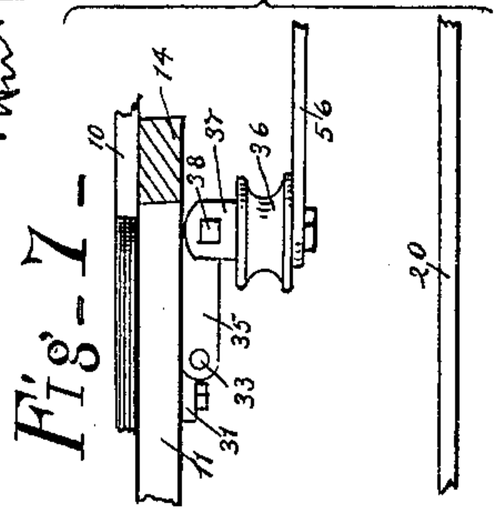



Fig. 5.

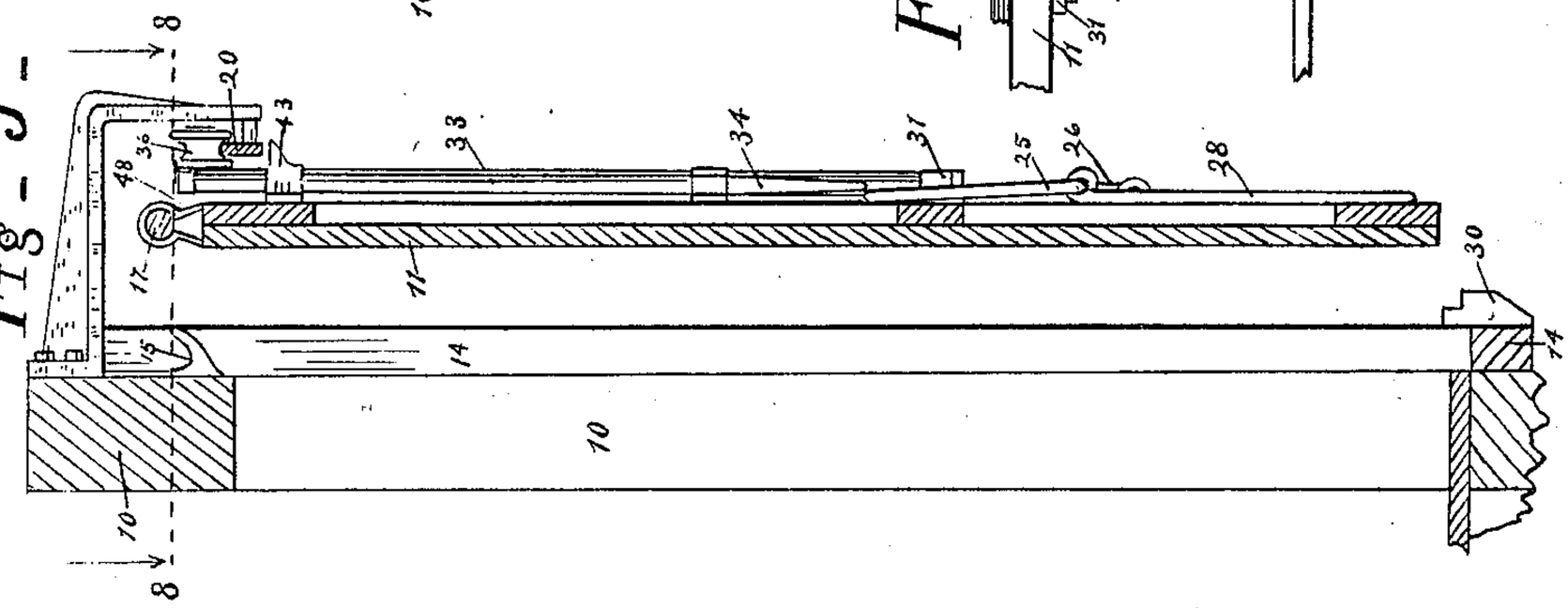
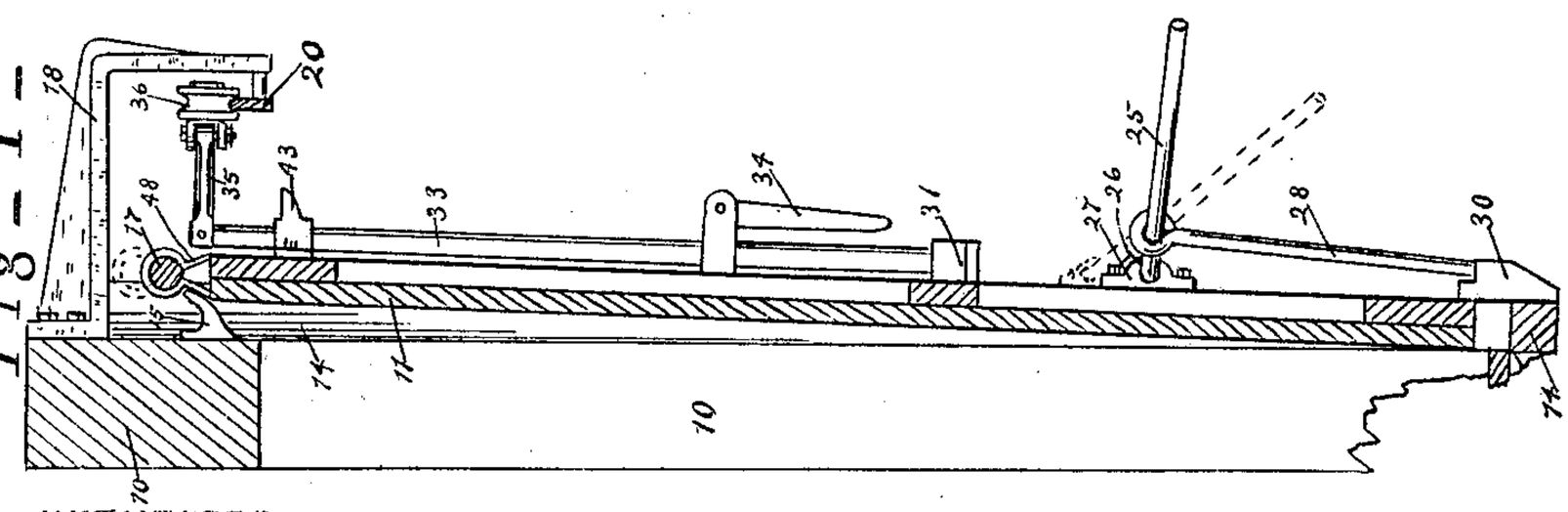



Fig. 4.

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# UNITED STATES PATENT OFFICE.

JOHN R. HUSSEY, OF INDIANAPOLIS, INDIANA.

## SLIDING-DOOR CONSTRUCTION.

No. 828,658. Specification of Letters Patent. Patented Aug. 14, 1906.

Application filed April 1, 1905. Serial No. 253,243.

*To all whom it may concern:*

Be it known that I, JOHN R. HUSSEY, of Indianapolis, county of Marion, and State of Indiana, have invented a certain new and useful Sliding-Door Construction; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, in which like numerals refer to like parts.

The object of this invention is to provide an improved method of opening removable doors for lumber-driers and dry-kilns of various kinds where there are a number of doors at each end of the kilns that must individually be moved clear of the openings. It may also be used in connection with any other sort of structure, especially where there is a plurality of doors.

The doors may be removed from the track to close the openings in the structure or readily mounted and operated on said track in turn when desired. In carrying out this feature of the invention a single sliding-door track, supported from the building above and somewhat in front of the doors, handles all the doors at either end of a kiln or battery of kilns. The track is preferably secured to the structure and must be parallel therewith. The doors for closing said openings have crank-shafts mounted in connection with them which carry rollers adapted to be placed and travel upon said track. The arrangement is such that when a door is closed the rollers are off the track, and the door is opened by placing the rollers on the track and drawing the door toward the track away from the structure. The entire door is thus bodily—that is, at all points—removed from the opening of the structure into proximity to the track, whereby it is supported and can be moved laterally out of the way. In combination with the foregoing means is provided for first elevating the door out of its seat in the structure and then means for placing it on the track.

Another object of this invention is to enable a door to be laterally transported on the track past other doors which are closed. The entire door therefore is moved bodily away from the structure upon the track far enough to permit it to pass other closed doors. The track and structure are stationary and the door is movable between them and is supported by one or the other and is moved at will from one to the other by the cranks on the door which operate in unison.

The full nature of the invention will be understood from the accompanying drawings and the following description and claims.

In the drawings, Figure 1 is a perspective view of a structure with a plurality of doors. Fig. 2 is a side elevation of a part of the structure, such as a dry-kiln, and one door, with means for hanging and moving it, the door being closed. Fig. 3 is a vertical section on the line 2 2 of Fig. 2 with the door closed. Fig. 4 is the same with the door elevated and the rollers moved out upon the track in the process of opening the door. Fig. 5 is the same with the door opened and supported on the track ready for lateral transportation thereon. Fig. 6 shows the upper part of Fig. 4 on a larger scale. Fig. 7 is a horizontal section on the line 7 7 of Fig. 3, showing the door closed. Fig. 8 is the same section on the line 8 8 of Fig. 5, showing the door open.

The drawings herein are shown merely for the purpose of illustrating the nature of the invention, as I do not wish to be limited to the exact details of construction because they may be in many respects modified without changing the principle and nature of the invention.

In what is here shown there is a structure 10, such as the end of a dry-kiln, with openings therein that are closed by the doors 11. The openings in the structure are surrounded by timbers that form a seat for the door when closed.

On each side of the opening there is a door-casing 14 of about the same length as the door is high and corresponding to the door in thickness, between which the door fits when closed, as seen in Figs. 5 and 7. Upwardly and outwardly inclined door-supports 15 are secured to the door-cap, as shown, that receive and carry the cross-rod 17, which is secured to the upper end of the door by straps 48. As appears in Fig. 3, these inclined stationary door-supports 15 draw the upper end down tightly against the structure, so that the top of the door is thus held tightly in place against the structure, the bottom being securely held by the rabbet, as shown. On the door-casings 14 at each side there are two upwardly-extending hooked brackets 40, adapted to receive the arms 41, secured to the sides of the door when the door is lowered while closing, and thus aid in holding the door closed.

On a higher level than the openings in the structure brackets 18 are secured which pro-

ject outwardly beyond the structure and beyond the doors and are turned downwardly at their outer ends, as seen in Fig. 3, and have inwardly-extending arms 19 on their extreme outer and lower ends, which carry a horizontal track 20, parallel with the structure and beyond the door or any part thereof when closed. This track is on about the same level as the top of the doors when closed.

Each door is supplied with a lifting means, including a lever 25, having a crank on each end mounted with brackets 27, secured to the door. The lever near each end is fulcrumed in the upper ends of vertical bars 28, that extend through guide-brackets 29, secured to the door and at their lower ends rest upon stationary bearing-plates 30, secured, in connection with the bar 14, on the structure, as appears in Figs. 2 and 4. Thus it is seen that by drawing the upper end of the lever 25 outward from the position shown in Fig. 3 to that shown in Fig. 4 the cranks 26 on the end of the lever will elevate the door into the position shown in Fig. 4.

On each door near each side there are bearing-brackets 31, that carry vertical crank-shafts 33, which are operated by the handle 34. Each crank-shaft 33 has at its upper end a crank 35 (seen in Fig. 6) rigidly secured to it and at the end of each of said cranks carries a roller 25. Said roller is mounted upon an arbor having a divided head 37, through which a bolt 38 extends that passes through a hole in the end of the crank 35, and in this manner the roller is mounted on the crank. It appears in Fig. 5 that by this arrangement the roller has very slight vertical play independently of the crank 35, and the roller is enabled to support the door and be held in a substantially horizontal position, as seen in Fig. 6. This connection between the crank 35 and the roller should be comparatively strong. The arbors of the rollers 36 are connected by a bar 56, so that the rollers will always operate in unison, and when one crank-shaft 33 is actuated by the lever 34 the other crank-shaft and roller will be moved correspondingly. The two rollers 36 are prevented from escaping from the track by the arms 43, secured to and extending outwardly from the bearings 31 under the track when the door is moved outward.

The operation will now be explained. When the doors are closed, as shown in Figs. 2 and 3, they are closed tightly on all four edges and are entirely independent of the track 20, so that any door running on said track may pass the closed doors. The first step in the operation of opening the door is shown in Fig. 4, and it consists in drawing the crank 25 outward, so as to lift the door out of its seat at the bottom and also out of the brackets 40 on each side and brackets 15 at the top and to elevate its upper end, and especially the rollers, on a higher level than the track 20. While in the extreme vertical position (indicated by dotted lines in Fig. 6) the lever 34 on one of the crank-shafts 33, secured to the door, is turned from the position shown in Figs. 2 and 3 to that shown in Fig. 4, which by reason of its connection with the other crank-shaft throws both cranks 35 at the upper end around from their positions shown in Figs. 3 and 7 to that shown in Figs. 4 and 6. That throws the rollers outward and over the track. Then the door is lowered somewhat by relieving the pressure on the lever 25, so that it will move from the dotted-line position shown in Fig. 6 to the full-line position, and then the rollers will rest and ride upon the track. The lever 25 is then pushed up against the door into the position shown in Figs. 2 and 3, and no further attention is paid to the same till ready to unload the door. By turning the handle 34 from the position shown in Fig. 4 to the position shown in Fig. 2 the door will be drawn from its position shown in Fig. 4 outward toward the track into the position shown in Figs. 5 and 8. Then the door is open and wholly supported by the track and can be moved thereon laterally without difficulty and caused to pass any other doors that may be closed.

In closing the door it is run back on the track to a position opposite the opening to be closed, and the handle 34 is turned to the outward position shown in Fig. 4, so that the door will be moved from the position shown in Figs. 5 to 8 to that shown in Figs. 4 and 6. The lever 25 is then pulled out to a horizontal position, so as to elevate the door somewhat and lift the rollers off the track 20 to the dotted-line position shown in Fig. 6. The handle 34 is then turned from the position shown in Fig. 4 to the side, which draws the rollers away from the track and into the position shown in Fig. 7. Then the door is pushed inward. The crank 35 is moved to its original position, and the door settles into its closing position.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. The combination with a structure, of a track parallel with the structure, a door, track-rollers carried by said door, means mounted on the door for placing said rollers on the track or removing the same therefrom toward the structure so as to leave the track free, and means for supporting said door on the structure when not supported by said track.

2. The combination with a structure, having an opening, and a door, of track-rollers carried by said door, means for supporting said door in said opening of the structure and independently of said track, means for elevating the door from its seat in said structure, and means on the door for placing said rollers, while the door is elevated, on the track or re-

moving them toward the structure so as to leave the track free.

3. The combination with a structure having a plurality of openings, and doors for closing the openings, of a track parallel with the structure and passing all said openings, track-rollers carried by each door, means mounted on each door for placing said rollers on the track or removing the same as desired, and means for supporting said doors in the openings of the structure when not supported by said track, said track being sufficiently far from said structure to permit a door to be moved along thereon past any closed doors.

4. The combination with a structure having a plurality of openings, and doors for closing said openings, of a track mounted in connection with said structure parallel therewith and passing all of said openings, cranks mounted upon each door, track-rollers carried by said cranks, means mounted on each door for actuating said cranks to move said rollers toward the structure or toward the track as desired, and means for supporting said doors in the opening of said structure when not supported on said track, the arrangement of said cranks being such that a door may be placed upon the track and moved sufficiently far from said structure to pass the closed doors as it is moved on said track.

In witness whereof I have hereunto affixed my signature in the presence of the witnesses herein named.

JOHN R. HUSSEY.

Witnesses:
W. H. BONHAM,
N. ALLEMONG.