

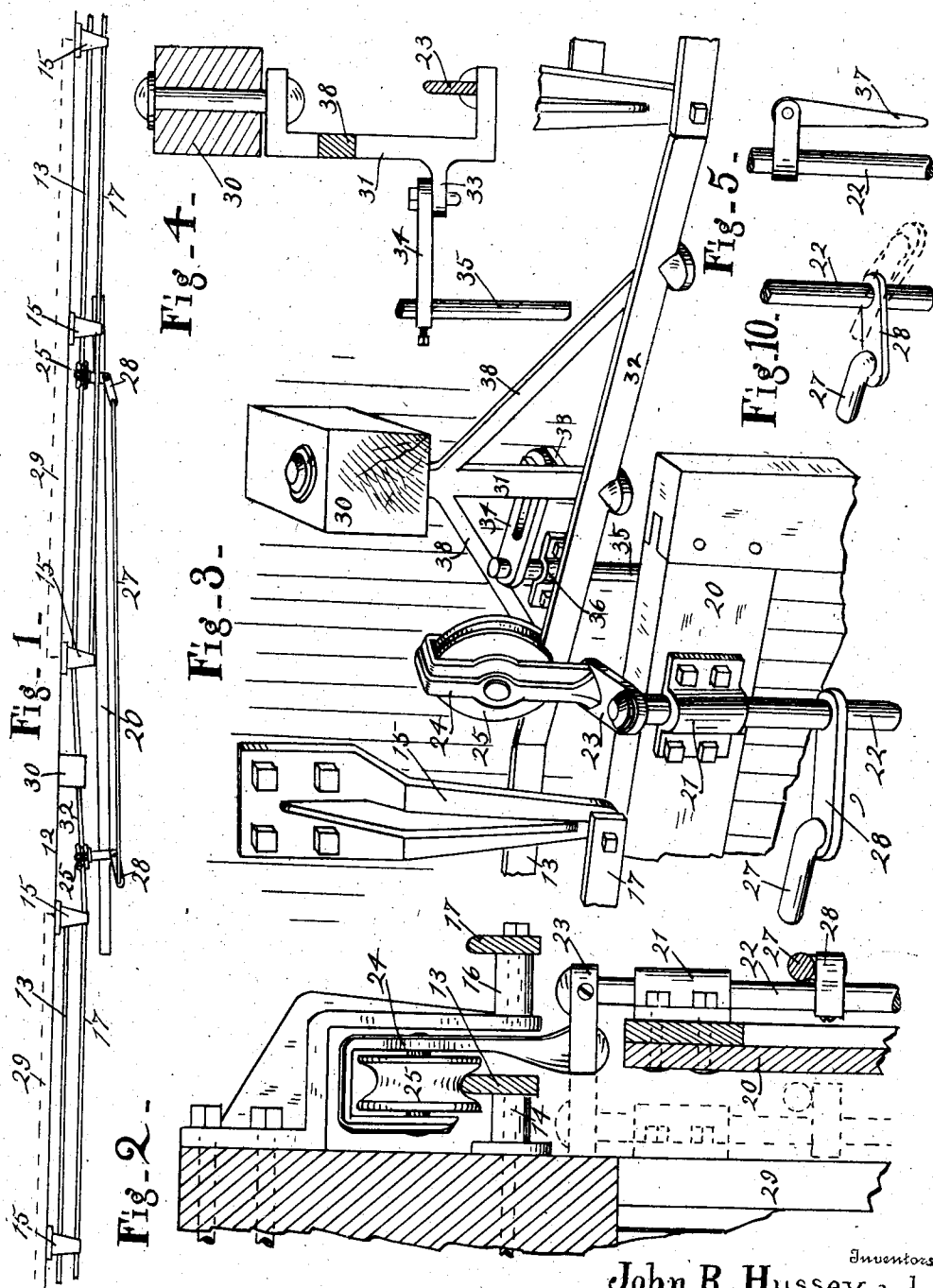
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PATENTED OCT. 30, 1906.

J. R. HUSSEY & V. F. OUTLAND,
SLIDING DOOR CONSTRUCTION.

APPLICATION FILED MAY 2, 1905.

2 SHEETS—SHEET 1.



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Fig. 6.

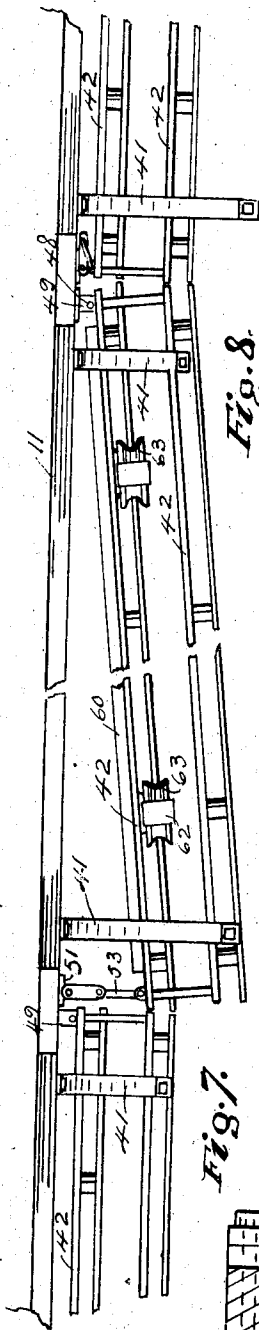


Fig. 7.

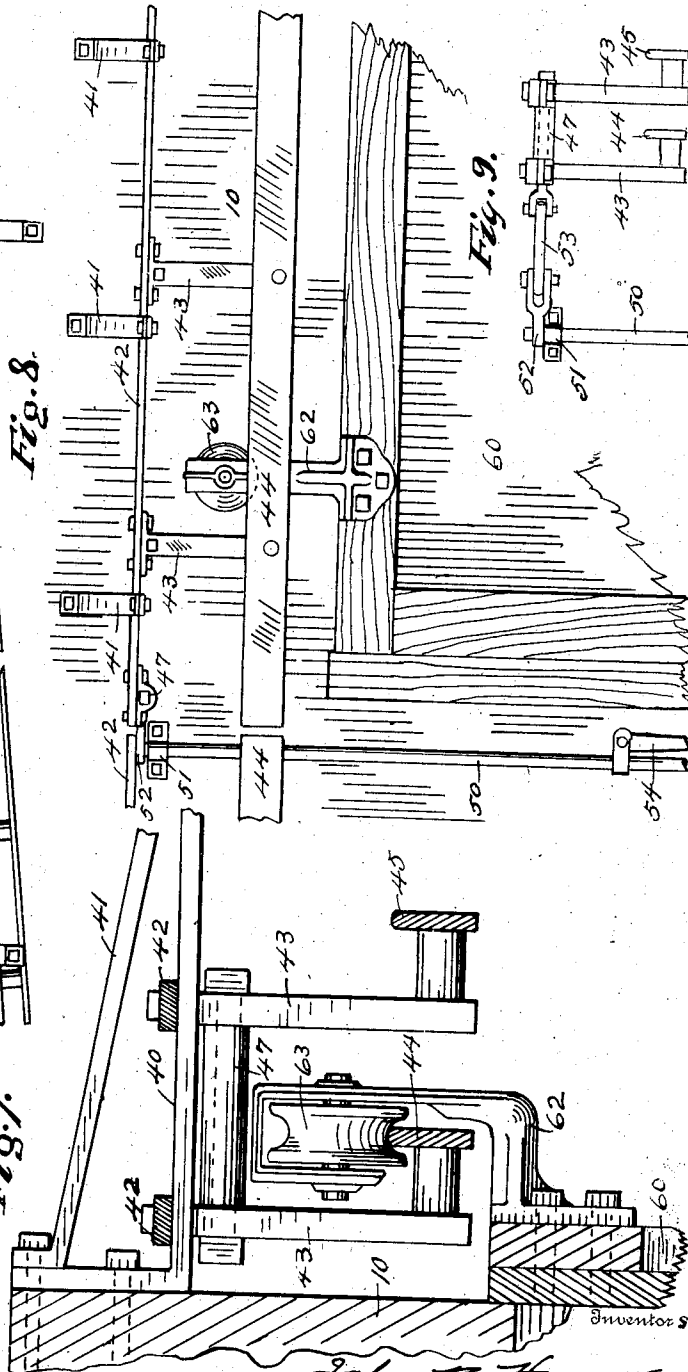
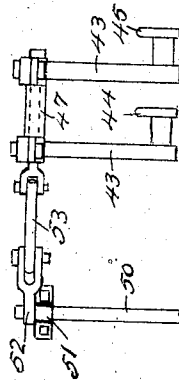


Fig. 9.



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SLIDING-DOOR CONSTRUCTION.

No. 834,673.

Specification of Letters Patent.

Patented Oct. 30, 1906.

Application filed May 2, 1905. Serial No. 258,507.

To all whom it may concern:

Be it known that we, JOHN R. HUSSEY and VIRGIL F. OUTLAND, of Indianapolis, county of Marion, and State of Indiana, have invented a certain new and useful Sliding-Door Construction; and we 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 a new and improved way for handling sliding doors at the ends of dry-kilns and other structures where there are a plurality of doors and it is desirable to move the doors individually into and out of their places and also to move one door past the other doors that may be closed.

The chief feature of the invention consists in the employment of a switch construction for moving a door so that the door may be moved past other doors which are closed. This idea of employing a switch may be embodied in different forms, and we have shown herein two forms thereof; but we do not desire to be limited to any particular form or to the details of construction herein set forth.

We show herein a structure with a plurality of openings adapted to be closed by doors that are suspended by rollers on track-sections. There are two parallel track-sections for each opening mounted in connection with the structure. The door is supported when closed on the inner of said track-sections. In the form first shown the double track-sections for the various openings in the structure are stationary, in line with each other, and separated from each other somewhat. Between their ends a switch track-section is mounted in any suitable way, and means is provided for moving and holding said switch-section in position to make a connection between either of one pair of adjacent track-sections with the diagonally opposite one of the other pair of track-sections, whereby a door may be moved either way from an inner track-section over said switch upon the next outer track-section and then be on the outer or main line of track. Therefore the double track-sections correspond with the door-openings in the structure, and a pivoted switch is mounted opposite the jambs between the door-openings, so as to be movable to connect an outer track-section with an in-

ner track-section. With this arrangement any one of a plurality of sliding doors mounted as shown can be moved in either direction from its position and pass clear of its opening without disturbing any of the other doors or without employing any other means than said double stationary track-sections connected by switches, as described.

In the modified form the doors are suspended by roller-bearings on an inner of a pair of track-sections. The track-sections of the pair are stationary and parallel with reference to each other, and the two constitute a frame or double track-section that is pivotally mounted at one end to the structure or building and is movable away from or toward the building at the other end, the distance of such movement equaling the distance between the track-sections of the pair. A number of these double track-sections corresponding to the number of doors are similarly mounted on the building, abutting each other and in line with each other. When closed, the door is suspended on the inner track-section of a pair, but when one end of said track-frame is moved outwardly to its limit the inner track-section of one pair is moved into alinement with the outer track-section of the adjacent pair. Hence when all the doors are closed in this arrangement there are two continuous tracks formed of sections, any one of which may at one end be moved, so that the inner or carrying track will enable the door thereon to be run upon the outer or main track.

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 diagrammatic view in plan of said invention, a door being partially moved from the structure on the switch toward the outer track. Fig. 2 is a vertical section through a portion of the building and upper part of the door, the door being open. Fig. 3 is a perspective view of the switch and the adjacent ends of the stationary track-sections, the upper part of the door being supported on the switch, parts being broken away. Fig. 4 is a side view of the means for supporting the switch, parts being in section and parts broken away. Fig. 5 is a lower continuation of a crank-shaft mounted on the door. Fig. 6 is a plan view, somewhat in diagram, of the modified

form, parts being broken away and the door being in process of transference to the outer track. Fig. 7 is a vertical section through the structure and the upper part of the door to show the track construction. Fig. 8 is a side elevation of a portion of the structure and door and track construction, the door being closed. Fig. 9 is a side elevation of the means for actuating the crank-shafts for moving the door away from or toward the building. Fig. 10 is a perspective view of a portion of a crank-shaft and a crank thereon in an extreme position, the opposite extreme being in dotted lines.

In detail there is shown in the first five figures a structure 10, which may be the end of a dry-kiln or other building and which may be provided with any number of door-openings 11, between which there are jambs 12. Above and corresponding to each door-opening a track-section 13 is secured stationary to the building by bolts 14. This track-section supports the door when closed, and therefore may be called the "inner" track-section. Above said track-section 13 brackets 15 are secured to the building, which by means of bolts extending through sleeves 16 carry the outer track-section 17. This track-section is parallel and on the same level with and located a few inches farther away from the structure than said track-section 13. Both of said track-sections are stationary. The door 20 has secured to it bearings 21, carrying a pair of crank-shafts 22, on the upper end of which there are cranks 23, that support and have mounted in them upwardly-extending roller-brackets 24, in the upper looped ends of which rollers 25 are mounted, said rollers being adapted to fit and run on said track-sections. When the door is closed, said rollers are on the inner track-section 13 and support the door. Said crank-shafts 22 are connected by the rod 27 and cranks 28, so that they will act substantially in unison and yet will give to the crank-shaft some independent play while the door is passing a switch. The cranks 28 do not move through an arc of one hundred and eighty degrees, as shown in Fig. 10.

The door 20 when closed fits in a rabbet 29, that extends along the four sides of the door-opening and for the thickness of the door. The door is moved bodily out of or into the rabbet by the crank-shafts 22 and cranks 23, carrying the rollers 25. For this purpose the crank-shafts 22 are actuated by the handle 37. (Seen in Fig. 5.)

A timber 30 extends outward from the jamb of the building about midway between the openings therein and the stationary track-sections, and in it a switch-support 31 is rotatably mounted, and said switch-support has secured rigidly to it a switch 32, the same being braced by braces 38. The switch track-section 32 is mounted about midway

between its ends and is of such length as to enable it to connect diagonally opposite ends of the stationary track-sections.

The switch is thrown or operated by an arm 33 on the switch-support and a slotted bar 34, secured on the crank-shaft 35, which is mounted in bearings 36, secured to the jamb of the building between the door-openings. Said crank-shaft 22 is operated by a handle 37, like what is shown in Fig. 5.

In this construction the operation is as follows: Assuming the door to be closed, it is moved bodily outward from its rabbet by operating the handle 37 on one of the crank-shafts 22, so that the door will be moved into the position shown in Fig. 2, when it is outward beyond the inner track-rail and the crank 23 extends outward instead of inward. Next the switch at the side of the door onto which the door is to be moved is thrown by the handle 37 on the crank-shaft 35 so the switch will connect with the inner section of track on which the door is hanging. The door is then moved laterally across said switch upon the outer track and clear of the openings. The door may be moved in either direction by operating the switch, as desired. When the door is returned, it is forced bodily into its rabbet by reversing the crank-shafts 22 so the cranks 23 will extend inward.

In the modified form shown in Figs. 6 to 9 only one door-opening and door are shown; but said construction is adapted for operation in connection with a plurality of doors, as shown in Fig. 1. Outwardly-extending brackets are secured to the structure on a line above the door-openings. Some of these are longer than others and extend outward farther; but all are formed similarly. They consist of a lower horizontal bar 40 and a brace-bar 41. A pair of track-supporting bars 42 are loosely placed upon the bracket-bars 40. Arms 43 are secured to the under side of said bars 42 by bolts, as shown in Fig. 8, and the track-sections 44 and 45 are secured to said arms, as appears in Fig. 7. These track-sections are horizontal and parallel, the track-section 44 being near the building and the track-section 45 a few inches farther therefrom. The arms 43 are arranged in pairs oppositely situated, as seen in Fig. 7, and are secured together by bolts running through sleeves 47, that act as spacers and lie between the arms 43. This makes a solid frame-like double track-section, all parts of which are moved together when the same is moved. The double track-section is pivoted at 48 to the bracket 49, secured to the side of the building, as appears in Fig. 6. This pivotal connection is near one end of the double track-section, and the other end thereof is movable outward from the building and inward toward it on the bracket-bars 40 by means of the crank-shaft 50, mounted in the brackets 51, secured to

the jamb of the building and which has on its upper end the crank 52. A connecting-bar 53 is pivoted to said crank and also to the inner track-supporting bar 42, as seen in Figs. 6 and 9. The crank-shaft 50 is actuated by the handle 54.

A number of double track-sections mounted and pivoted as the one just described are placed along the building in line with each other, so that normally there are two parallel tracks; but when desired the movable end of one of the double track-sections may be moved outward, so that the end of one of the inner track-sections thereof when moved outward will come into alinement with the opposite outer track-section of the next double track-section, as seen in Fig. 6, and thus switch the door from one to the other.

The door 60 has brackets 62 secured to the top thereof, and rollers 63 are mounted in said brackets, so as to ride upon said track-sections. The inner track-section of each pair therefore supports the door while it is closed, and when it is desired to remove the door said track-section is movable outwardly at one end, as explained. Then said door may be moved from the track-section on which it has been supported to an outer track-section. If all the other doors in the series are closed, the outer track-sections will make a continuous track, on which said door may be run to any desired position.

The door may be returned to its position by reversing the operation just described.

What we claim as our invention, and desire to secure by Letters Patent, is—

1. The combination with a structure having a plurality of openings, and doors for said openings, of a pair of parallel track-sections for each opening, the track-sections of each pair being parallel and beside each other and one being nearer the structure than the other, means for movably supporting the door on the inner track-sections of the pair, and means for bringing the inner track-section of one pair of track-sections into connection with the outer track-section of another

pair of track-sections, substantially as set forth.

2. The combination with a structure having a plurality of openings and doors for said openings, of a pair of parallel track-sections for each opening the track-sections of each pair being parallel and beside each other and one nearer the structure than the other and the corresponding track-sections of the pairs of track-sections being in alinement with each other, means for movably supporting the door on the inner track-section of a pair, and a switch between the pairs of track-sections for connecting an inner track-section of one pair and an outer track-section of another pair for the lateral movement of the doors.

3. The combination with a structure having a plurality of openings and doors for said openings, of a pair of parallel stationary track-sections mounted in connection with said structure near each opening, the track-sections of each pair being beside each other and one being nearer the structure than the other, and the corresponding track-sections of the pairs being in alinement with each other, means for movably supporting the door on the inner track-section of each pair, an oscillatory support mounted in connection with the structure between the pairs of track-sections, a switch secured to said support and adapted to connect the ends of the diagonally opposite track-sections of adjacent pairs of track-sections, and a crank-shaft mounted in connection with the structure for oscillating said support and moving said switch to the desired position for the lateral movement of said doors.

In witness whereof we have hereunto affixed our signatures in the presence of the witnesses herein named.

JOHN R. HUSSEY.
VIRGIL F. OUTLAND.

Witnesses:

W. H. BONHAM,
N. ALLEMONG.