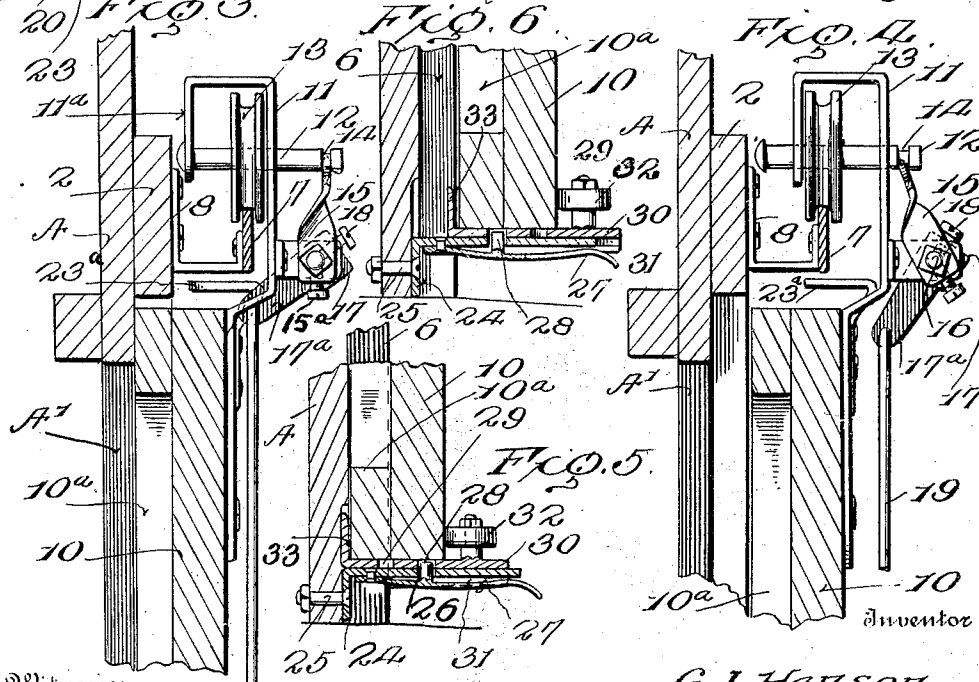


967,765.

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UNITED STATES PATENT OFFICE.

GEHART J. HANSON, OF BUXTON, NORTH DAKOTA.

HANGER FOR SLIDING DOORS.

967,765.

Specification of Letters Patent. Patented Aug. 16, 1910.

Application filed December 31, 1909. Serial No. 535,789.

To all whom it may concern:

Be it known that I, GEHART J. HANSON, citizen of the United States, residing at Buxton, in the county of Traill and State of North Dakota, have invented certain new and useful Improvements in Hangers for Sliding Doors, of which the following is a specification.

My invention relates to sliding doors such as are ordinarily used for barns and like constructions, and particularly, the invention relates to the means for supporting or hanging such a sliding door, the object of the invention being to provide means whereby the door may be forced laterally inward against the door frame and moved laterally outward away from the door frame so as to permit the door to have an easy sliding motion, the mechanism for this purpose to be operated by means of a handle conveniently placed upon the face of the door.

The invention includes, generally speaking, the usual longitudinally extending track upon which the door is supported upon rollers, the door being provided with hangers which shiftingly engage with the arbors of these rollers so that the hangers and door may move laterally, in operation, to the track and rollers, by means of the handle before referred to.

For a full understanding of the invention and the merits thereof, and to acquire a knowledge of the details of construction, reference is to be had to the following description and accompanying drawing, in which:

Figure 1 is a face view of a door constructed in accordance with my invention and of a structure upon which the door is applied; Fig. 2 is a longitudinal section thereof, on the line 2—2 of Fig. 1; Fig. 3 is an enlarged vertical section on the line 3—3 of Fig. 1; Fig. 4 is a like view to Fig. 3, but showing the door shifted outward; Fig. 5 is a fragmentary vertical section of the rear lower corner of the door and part of the door frame, and showing the adjustable means for holding the lower portion of the door in proper engagement with the door frame; and, Fig. 6 is a like view, only showing the roller moved outward to space the door from the face of the building.

Corresponding and like parts are referred to in the following description and indicated in all the views of the drawing by the same reference characters.

In the embodiment of my invention which I herein show, A designates the face of a structure of any desired kind, and 2 a longitudinal beam supported thereon.

3 designates a longitudinal sill which extends to the door opening, and 5 designates the vertical jamb at the end of the door opening.

6 designates a vertical intermediate beam which is disposed between the beams 2 and 3 and defines the inner end of the door opening.

Supported on brackets 8 projecting from the face of the beam 2, is the longitudinally extending rail 7 which may be of any suitable character. A door 10 having the framing strips 10^a upon its inside face, is provided at its upper edge with the upwardly and inwardly extending hangers 11 which are returned upon themselves, as at 11^a. Mounted in these hangers are the arbors 12, these arbors being laterally shiftable through the hangers. Supported on each of the hangers are the flanged rollers 13 which rest upon the rail 7, in the manner usual to door hangers. The extremity of each spindle or shaft 12 is annularly grooved, as at 14, for engagement each with an arm 15. These arms are attached to the opposite extremities of a rock shaft 16, being held in place on the rock shaft in any suitable manner, as by set screws. Mounted upon the rock shaft is the collar 17 which is held in any desired adjusted position by means of a set screw 18. This collar has projecting from it the arm 17^a which extends downward and toward the door and is provided at its extremity with an eye for engagement with a vertical rod 19. This rod extends downward to any convenient location on the door and is there engaged with an operating lever 20, this lever being pivoted at 21 and projecting toward the edge of the door. Mounted adjacent to the end of the operating lever is the angle bar 22 having its outwardly projecting flange 23 cut away at two points for engagement with the extremity of the lever, the lever being of sufficient resiliency or yielding sufficiently to permit it to be moved outward out of engagement with the flange 23 or the notches in the flange, and moved to any desired position and again engaged with the flange. It will be obvious that when the rod 19 is moved up or down, the arms 15 will shift the hangers 11 with relation to the spindles 12 so that when the rod is pulled in one direction, the arm 15 will move inward,

and when in the other direction, the arm will be moved outward. In Fig. 3 I show the position of the parts when the rod 19 is raised, thus pushing the hanger 11 inward and moving the door 10 inward in relation to the roller 15 and the track 7. In Fig. 4 I show the position of the parts when the rod 19 is lowered, which acts to move the hanger 11 and the door 10 outward or away from the door casing. It will be seen that the rock shaft 16 is held in its adjusted position by means of the handle 20 and the notched angle bar 22. In order to prevent the door rising so that the rollers will get off the track, I attach to the upper edge of the door the angular strips or irons 23^a. These are attached at opposite ends of the door or at any suitable location thereon and project inward beneath the lower edge of the track.

In order to provide means whereby the lower margin of the door may be held either in contact with the lower portion of the door jambs or out therefrom, I provide the sill 3 with the outwardly projecting angular bracket 24 which is attached to the sill by means of the bolt 25. This angular strip is provided along its length with a perforation 26, and mounted upon the under side of the strip is the spring 27 which projects somewhat beyond the strip and is downwardly turned at its end. This spring is provided upon its upper side with the locking pin 28 which is adapted to project into either one of two perforations 29 in a sliding bar 30. This sliding bar 30 has downwardly and inwardly turned margins 31 which engage over the edges of the angular strip 24 and form a guide for the bar 30 so that the bar may be shifted in or out upon the strip. This bar 30, at its inner end, is upwardly turned, as at 33, to fit against the inside face of the door, while its outer end is provided with the roller 32 which is mounted in any suitable manner thereon and bears against the outside face of the door. It will thus be seen that as the bar 30 is shifted in or out to any one of its two positions, the lower margin of the door will be carried to or from the sill 3. It is of course obvious that the roller 32 is shifted in accordance with the movement of the hanger 11. Thus, when the hanger is shifted out, the roller 32 is shifted outwardly, and vice versa. The rear end of the sill 3 is provided with the stop 34, which stop comprises a spring which is returned upon itself and then outwardly extended so that when the door is moved back to its open position, the rear end of the door will engage with the spring so that the door will be frictionally held.

The operation of my invention is obvious. Under normal circumstances, the door will be supported as in Fig. 4 and away from the space of the structure. In this position, the

door may be easily moved upon the track, as usual in this class of doors. In severe weather, however, or when it is desired to close the structure tightly, the handle is operated to shift the door inward, as in Fig. 3, thus bringing the framing strips 10^a into contact with the inner face of the door frame and with the inner edges of the jambs, thus tightly closing the door against the entrance of wind, snow or rain. When it is desired to open the door, it is only necessary to operate the handle, whereupon the door will move to the position shown in Fig. 4, and may be slid back.

My invention is simple, thoroughly effective in practice, and may be cheaply manufactured and easily applied. The collars 17 of the arms 17^a are adapted to be adjusted anywhere along the length of the rock shaft 16, and thus by using the proper length of rock shaft, the hanger may be attached to doors of any desired size. The arms 15 are also adjustable along the rod by means of set screws 15^a, though I do not wish to limit myself to this particular detail.

Having thus described the invention, what I claim is:—

1. The combination with a door and a longitudinal rail upon which it is carried, of a hanger attached to the door and extending over the rail, a spindle transversely shiftable through the hanger, a roller on the spindle and engaging with the rail, and means movable with the door and engaging with the spindle for shifting the hanger and door laterally upon the spindle.

2. The combination with a door and a longitudinal rail upon which it is carried, of opposed hangers attached to the door and extending up and over the rail, transverse spindles mounted in each hanger and shiftable laterally therethrough, a roller carried on each spindle and engaging with the rail, a rock shaft supported on the hangers and extending longitudinally of the door, arms on the rock shaft, each engaging with one of the spindles, and an operating rod connected to said rock shaft, extending downward into convenient position upon the door, whereby the shaft may be actuated.

3. The combination with a door and a longitudinal rail upon which the door is carried, of opposed hangers attached to the door, extending upwardly, inwardly and downwardly, a spindle in each of the hangers and laterally shiftable therethrough, a roller mounted on each spindle and engaging with said rail, outwardly projecting bearings supported on the hangers, a longitudinally extending rock shaft mounted in said bearings, upwardly extending arms on the rock shaft engaging with the spindle to shift the spindle and hanger laterally relative to each other, an arm attached to the rock shaft and projecting out therefrom,

an actuating rod attached to the extremity of the arm, and a pivoted handle on the actuating rod, whereby the latter may be operated.

4. The combination with a door and a longitudinal rail upon which the door is carried, of opposed hangers attached to the door, extending upwardly, inwardly and downwardly, a spindle in each of the hangers and laterally shiftable therethrough, a roller mounted in each spindle and engaging with said rail, outwardly projecting bearings supported on the hangers, a longitudinally extending rock shaft mounted in said bearings, upwardly extending arms on the rock shaft engaging with the spindle to shift the spindle and hanger laterally relative to each other, an arm attached to the rock shaft and projecting out therefrom, an actuating rod attached to the extremity of the arm, a pivoted handle on the actuating rod, whereby the latter may be operated, and a catch device for holding the handle in a raised or lowered position.

5. A support for sliding doors, including a hanger adapted to be attached to the door, said hanger extending upward, inward and downward, a spindle shiftable through the hanger, an arm pivotally supported on the hanger and engaging with the spindle to shift the same laterally, and means attached to the arm, whereby it may be turned.

6. The combination with a door and a longitudinal rail upon which the door is carried, of a hanger, a roller mounted therein and engaging with the track, means for shifting the upper edge of the door laterally relative to the roller, and a laterally adjustable member adapted to be moved outward or inward in either of the adjusted positions, said member bearing against the outer face of the door.

7. The combination with a door and a longitudinal rail upon which the door is carried, of hangers located upon the upper edge of the door, said hangers extending upward, inward and downward, a spindle carried in each one of the hangers and shiftable laterally therethrough, a roller on each spindle, engaging with the track, a rock shaft extending longitudinally of the door and supported on said hangers, arms attached to the rock shaft and engaging with the spindles to laterally move the same, an arm projecting outward from the rock shaft, an actuating rod attached to said arm, a support mounted below the lower edge of the door, and a laterally adjustable member mounted upon said support and adapted to be moved out-

ward or inward and held in its adjusted position, said member carrying a roller bearing against the outer face of the door.

8. The combination with a door and a longitudinal rail upon which the door is carried, of hangers located upon the upper edge of the door, said hangers extending upward, inward and downward, a spindle carried in each one of the hangers and shiftable laterally therethrough, a roller on each spindle, engaging with the track, a rock shaft extending longitudinally along the door and supported on said hangers, arms attached to the rock shaft and engaging with the spindles to laterally move the same, an arm projecting outward from the rock shaft, an actuating rod attached to said arm, a bracket mounted upon the door sill, below the lower edge of the door and projecting outward, a transversely shiftable member mounted on the bracket, having an upwardly turned inner end engaging with one side of the door, a roller mounted on the other extremity of the member and engaging with the outer face of the door, and a catch attached to the bracket and adapted to hold said member in either of its laterally adjusted positions.

9. The combination with a door and a longitudinal rail upon which the door is carried, of hangers located upon the upper edge of the door, said hangers extending upward, inward and downward, a spindle carried in each one of the hangers and shiftable laterally therethrough, a roller on each spindle, engaging with the track, a rock shaft extending longitudinally along the door and engaging with the spindles to laterally move the same, an arm projecting outward from the rock shaft, an actuating rod attached to said arm, a bracket mounted upon the door sill, below the lower edge of the door, said bracket having a perforation through it, a spring on the under side of the bracket, having an upwardly extending pin projecting through the perforation, a bar supported upon the upper face of the bracket and having sliding engagement therewith, said bar being formed with perforations adapted to receive the projecting end of the pin, said bar, at its inner end, being upwardly turned to engage the inner edge of the door, and at its outer end having a roller engaged with the outer face of the door.

In testimony whereof I affix my signature in presence of two witnesses.

GEHART J. HANSON. [L. S.]

Witnesses:

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