UNITED STATES PATENT OFFICE.

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COVERED BARN-DOOR TRACK AND HANGER.

947,019.


To all whom it may concern:

Be it known that EMILE F. MONNIER, a citizen of the United States, and a resident of Coggon, in the county of Linn and State of Iowa, have invented a certain new and useful Covered Barn-Door Track and Hanger, of which the following is a full, clear, and exact description.

The principal objects which the present invention has in view are: to provide a device for hanging sliding doors, which is fully protected from rain and snow; and to provide a device which is simplified in construction and arrangement to permit the installation thereof by an unskilled person.

One embodiment of the present invention is disclosed in the construction illustrated in the accompanying drawings, wherein like characters of reference indicate corresponding parts in all the views.

Figure 1 is a perspective view of a door mounted upon a covered track and hangers constructed in accordance with my invention; Fig. 2 is a detail view in side elevation of a hanger truck; Fig. 3 is a top view of the hanger truck shown in Fig. 2; Fig. 4 is a detail view in end elevation, showing the hanger mounted upon the tracks, and the housing for the same; Fig. 5 is a perspective view of the end closing and retaining device; Fig. 6 is a perspective view of a modified form of my invention with housing turned under to form part of track; Fig. 7 is a horizontal section taken through the housing illustrated in Fig. 6, looking down on the track slot; and Fig. 8 is a perspective view of one of the end closure caps used in conjunction with the modified form of structure.

The door 6 is of any usual and suitable construction, and is suspended above the floor of the structure to which it is applied. It is secured to a bent strap 7 by means of bolts passed through the door, and through perforations 8, 8, in said strap. The strap, before being secured to the door, is passed through a stirrup opening 9 formed in a plate 10. The plate 10 is secured to side arms 11, 11, which are spread to receive the spherical rollers 12, 12, as shown particularly in Figs. 2 and 3 of the drawings. The rollers 12, 12 are rotatively mounted upon axles 13, 13, which are passed through the said rollers and side arms 11, 11, and riveted or overturned at 14, 14, at the outside of the said side arms 11, 11.

With a door or similar structure provided with a carrying truck, such as described, it will be noticed that the structure is held in a vertical position by its own weight. At the same time the door may swing and yield to a pressure which otherwise would cause the door to become jammed.

The rollers 12, 12 are arranged to track upon the edges of a slot 15, which is formed between bent plates 16, 16, riveted at 17, 17 to straps 18 and to a housing 19 at proper intervals. The housing 19 is shaped and reinforced to maintain the contour imparted to it by the forming press, and is provided with an over-reaching extension 20 to overhang the upper edge of the straps 18. The housing is secured to the straps by rivets 21, 21.

At each end of the track structure formed by the plate 16 and the housing 19, the latter is held in line by brackets 22, 22, secured to the building structure upon which the track is mounted, by suitable fastenings passed through perforations 23, 23.

The bent plates 16 are formed from material sufficiently heavy to retain their shape while supporting the weight of the door. The plate 16 is joined to the straps 18 as illustrated in the drawings. The plate 16 being thus secured, the straps 18 and the housing 19 are joined by the rivets 21, 21. The track structure is now secured to the building by driving at suitable intervals, through the upper edge of the joined straps and housing, any desired form of fastenings. The door 6 is now raised, until the rollers 12, 12 may be inserted within the space above the plates 16, the door being held in this position by any common method, such as blocking. When the trucks are both within the track space, the brackets 22 are inserted and fastened in position.

The brackets 22 are shaped to the inner contour of the housing 19. The brackets are provided at the outer edge thereof with a hook-shaped ear 26, which is bent, as shown more particularly in Fig. 5 of the drawings, to permit the body of the housing 19 to rest within the groove 27 formed by the hook 26. It will be seen from this construction that the walls of the brackets 22 prevent any sag of the housing 19, and the ears 26 prevent the outward displacement of the said housing.

The brackets 22 having been secured in position, the blocks, or other devices, for
suspension the door 6 are removed, permitting the weight of the door to rest upon the rollers 12, 12 and the plates 16, 16.

With hangers constructed as thus described, a door will move from end to end of the track formed by the plates 16, 16 with very little friction, by reason of the fact that the rollers 12, 12 accommodate themselves readily to the opening of the plates 16, 16, and bear upon the edge of the metal forming the slot 15.

By reason of the construction wherein is employed two spherical rollers 12, 12, mounted in the truck formed by the side arms 11, 11, the weight of the door is distributed over a larger area than would result from mounting the door upon a single roller. By using the spherical rollers 12, 12, any inequality in the opening of the slot 15 is compensated, thereby requiring less accuracy in the construction of the tracks.

There is shown at Figs. 6, 7 and 8 a modified form of the construction, wherein the extension 25 is dispensed with and the house ing 19 is turned toward the plate 16, being given the same curvature as the said plate. The housing 19 thereby forms the outer half of the track for the spherical rollers 12, 12 in the same manner as in the construction shown in Fig. 4 of the drawings, wherein the track is formed by the two plates 16, 16. Further, in this modified form I construct the housing in short lengths to be joined by a sleeve 28, which is suitably riveted to the ends of the sections of the housing 19. This sleeve may be so constructed as to render the construction more rigid, by forming a corrugation in the said strap. The rivets 29, 29 shown therein may be substituted by screw bolts, should it be desired.

By this latter form, the operation of the invention is in all respects the same as described above, except that the modified form serves an advantage when the hanger is being shipped, the short sections being advantageous in shipping.

The bracket 22, shown at Fig. 8 and used in conjunction with the modified form of the track structure, is in all respects similar to the bracket 22 shown in Fig. 5 of the drawings, except that the lower extension formed in the structure shown in Fig. 5 to conform to the straight extension 25 is omitted.

With a track constructed in conformity with the modified form, the operation of erecting is as follows: The first joint of track is secured to the building and then leveled. The second joint is then inserted in the sleeve 28 and built up with the first joint and fastened in place. The third joint is added in the same way until the entire track is in position.

Having thus described my invention, what I claim as new and desire to secure by Letters Patent is:

In a barn door hanger the combination with a truck comprising a plurality of spherical rollers rotatively mounted in a frame, a stirrup rigidly secured in said frame between said rollers and depended therefrom to form a hinge section, a strap passing through said stirrup forming a hinge section and adapted to be secured to the door; of a tubular track comprising a plurality of track sections circularly bended in cross section the lower ends thereof being disposed to form a continuous slot for the passage of said stirrup and a track for said rollers, a housing having an inclined upper surface and a depending apron rigidly connected to one of said track sections to support the lower edge thereof above the lower edge of said apron, a plurality of hanging straps rigidly secured to said housing and the other of said track sections, and bracket pieces filling the ends of the tubular structure formed by the said track sections and housing said pieces having extensions folded about the ends of the said housing and adapted to be secured to the building structure to maintain the tubular formation and support the said housing.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

EMILE F. MONNIER.

Witnesses:
C. E. Buckley,
H. S. Joslin.