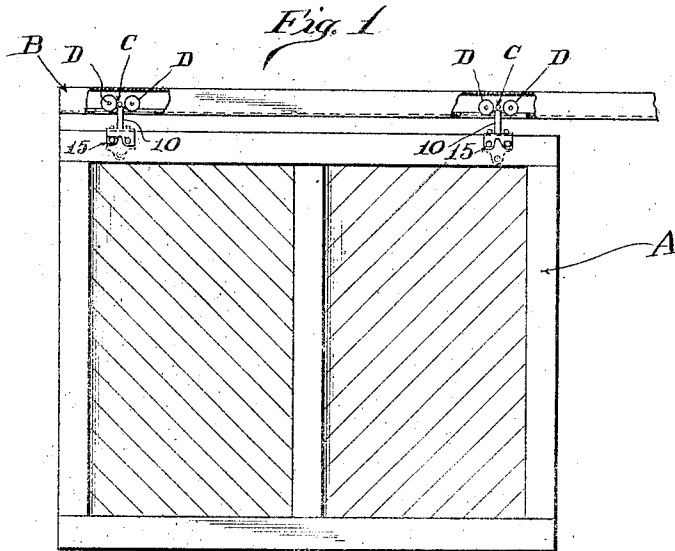
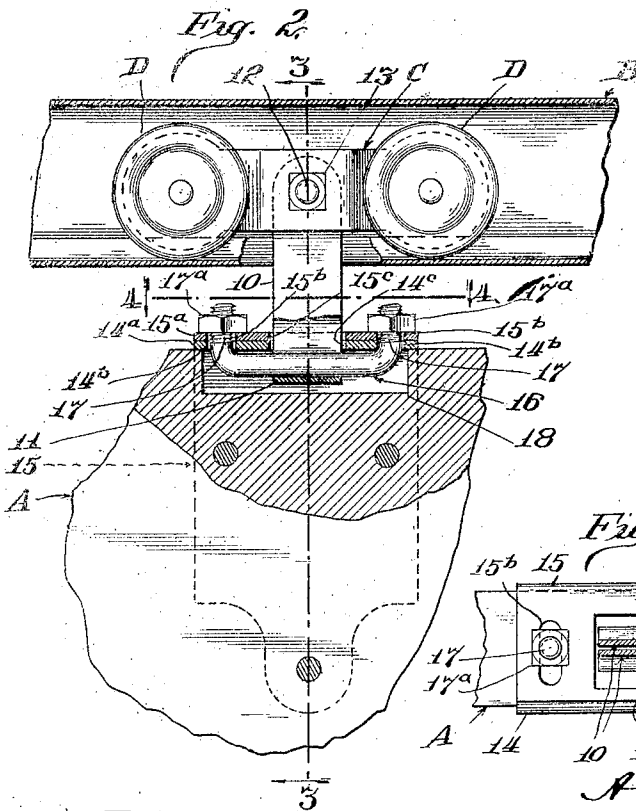
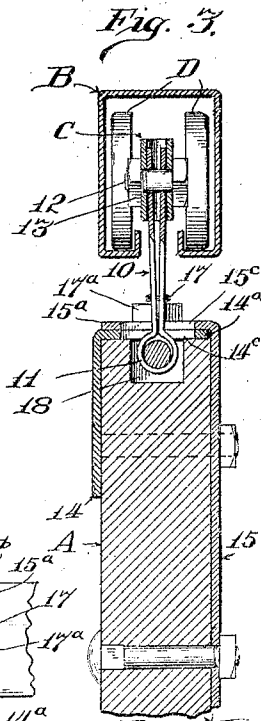
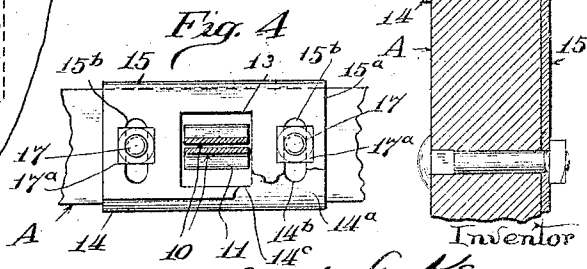


1,382,365.

Patented June 21, 1921.

2 SHEETS—SHEET 1.

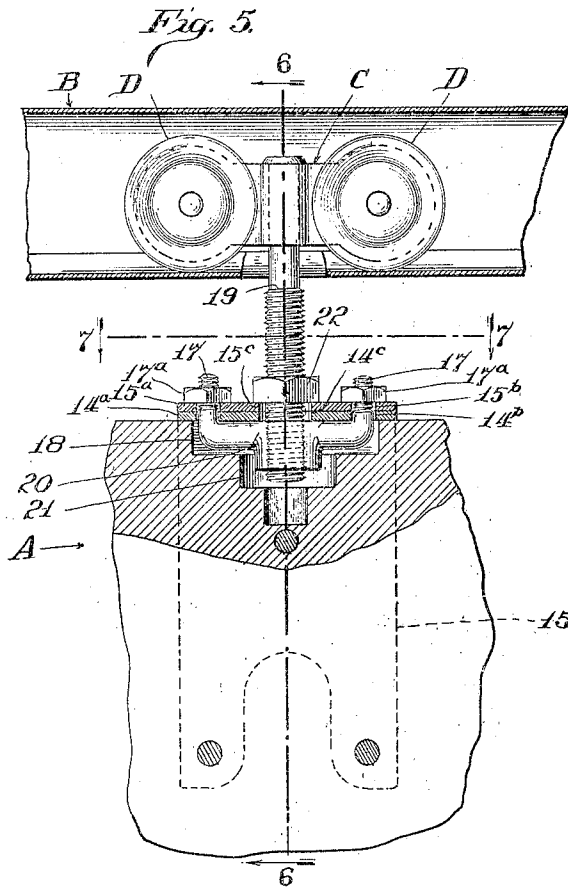
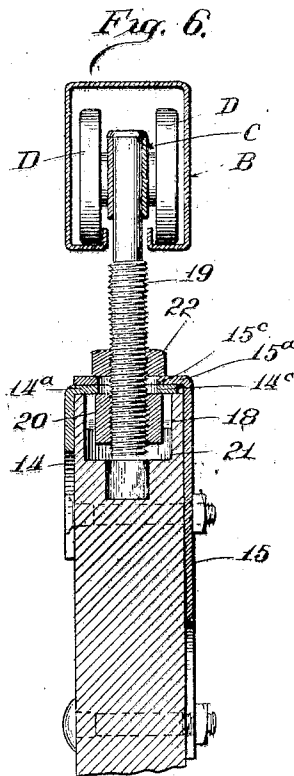
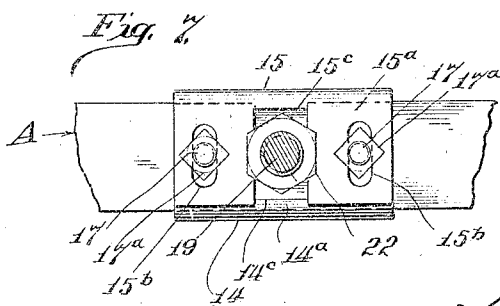
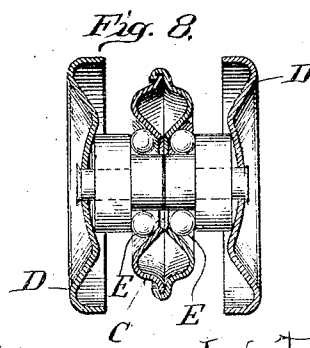


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2 SHEETS—SHEET 2.



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DOOR-HANGER.

1,382,365.

Specification of Letters Patent. Patented June 21, 1921.

Application filed December 2, 1920. Serial No. 427,808.

To all whom it may concern:

Be it known that I, ALBERT L. KERN, a citizen of the United States, and a resident of Aurora, in the county of Kane and State of Illinois, have invented certain new and useful Improvements in Door-Hangers, of which the following is a specification, reference being had to the accompanying drawings.

10 It is desirable that door-hangers be so constructed that they may be readily applied to doors of different thicknesses, and also have such adjustability as to adapt a door to which they may be secured to be suspended so as to lie closer to or farther from the wall in which is the doorway that the door is employed to close. It is the leading object of my invention to provide a cheap, simple and effective construction of hanger that will permit the ready accomplishment of the adjustment required to adapt it for attachment to different widths of doors or to properly hold a door at the desired distance away from a wall. Briefly stated, I accomplish this object by attaching to the lower portion of the rod or bar that depends from the traveling carriage a cross-head that is provided near each of its ends with an upwardly-extending stud, each of which passes through two registering slots formed respectively in the overlapping horizontal portions of the aprons that are connected to opposite faces of the door, and to the upper ends of such studs applying securing devices, such as nuts. It is a further object of the invention to provide, in connection with the pendant rod or bar member that carries such a cross-head, means for moving the door with reference to such pendant,—such movement of the door in one embodiment of the invention being a swinging outward movement and in another embodiment being a vertical movement for adjusting purposes. The first-mentioned movement is permitted by reason of hingedly connecting the pendant and the cross-head together, and the other movement is permitted by screw-threading the lower end of the pendant rod to engage a tapped opening in the cross-head.

What I claim as new will be pointed out in the claims:

In the drawings,—

Figure 1 is a front elevation of a door suspended from an overhead track by my

improved hanger, the track being shown in longitudinal section;

Fig. 2 is an enlarged detail of my improved hanger, the view being partly in side elevation and partly in vertical section, a portion of the lower part of the pendant being broken away and only a fragmentary portion of a door being illustrated;

Fig. 3 is a vertical section taken at line 3—3 of Fig. 2;

Fig. 4 is a cross-sectional view at line 4—4 of Fig. 2;

Fig. 5 illustrates a modified form of my invention, the view being a vertical section through a door and through one of the improved hangers by which it is suspended, some of the parts being shown in elevation, only a fragmentary view of the door being shown;

Fig. 6 is a vertical section taken substantially at line 6—6 of Fig. 5;

Fig. 7 is a cross-sectional view taken at line 7—7 of Fig. 6; and

Fig. 8 is a central section through one of the wheels with which the carriage of either form of the invention is provided.

Referring to the several figures of the drawings,—A indicates a sliding door of any ordinary construction adapted to close a doorway in a wall of a building. B indicates an overhead track for the door hangers, which track may be of any ordinary construction. As shown, it is of that well-known type that is formed from a single piece of sheet-metal bent upon itself to form a structure comprising a top wall, two side walls and two spaced-apart track-rails formed by turning the marginal portions of the side walls inwardly and upwardly. C and D indicate, respectively, the frame and wheels of a carriage adapted, in the construction shown, to run upon the two rails of the track B, ball-bearings E being preferably employed between the frame members C and the axle of each pair of wheels, as shown in Fig. 8. Two of such wheeled carriages will ordinarily be provided for a door, and from each of them is suspended a pendant that projects through the slot between the rails of the track, and to the lower ends of which pendants are secured the door through the use of suitable connecting devices.

Referring now particularly to the construction shown in Figs. 1 to 4, inclusive, the

pendant that has been referred to is shown as formed of a flat strip 10 bent centrally upon itself to form a sleeve or wide eye 11, which sleeve or eye portion constitutes, when the device is in operative position, the lower end of the pendant. The ends of the strip lie between the bars that constitute the frame C of the carriage and are secured in place by a bolt 12 that passes through the pendant and the carriage frame and upon which bolt a nut 13 is screwed. 14 and 15 indicate two aprons adapted to lie alongside of opposite faces of the door A and be secured thereto by bolts and nuts. Each apron is provided with a horizontal member indicated respectively by 14^a and 15^a which lie over the upper edge of the door with one of such parts superimposed upon the other, as clearly shown in Fig. 3. In each member 14^a, 15^a, are two slots that extend transversely of the door, said slots being at opposite sides of the pendant and said slots in one member overlying or registering with the slots in the other member. The two slots in the apron member 14^a are indicated by 14^b and those in the apron member 15^a by 15^b. In the central portion of each horizontal apron member is another transverse slot which are in registry with each other and through which extends the pendant 10. These two last-mentioned slots are indicated by 14^c and 15^c, respectively.

16 indicates a cross-head, which, as shown in said Figs. 1 to 4 inclusive, is formed of a cylindrical shape and has its end portions turned to stand at right angles to the main or body portions to form studs 17, each of which, as shown, is screw-threaded. The cross-head is of such length as to permit the turned ends or studs 17 to extend up through the two pairs of overlying or registering slots in the apron members 14^a and 15^a and they are held in such slots by nuts 17^a that are screwed upon them and against the uppermost one of such apron members. The cross-head passes through the sleeve or eye portion 11 that forms the lower end of the pendant and the fit of the parts is such as to permit a free turning of the cross-head in its sleeve or eye when the door is moved to swing it away from the wall in which is the doorway that the door serves to close. As clearly shown in Fig. 2 the upper edge of the door A has cut therein a recess 18 of proper size and shape to receive the cross-head and the lower portion of the pendant.

By reason of the construction above described it is evident that doors of any thickness may be suspended by the means shown so long as the thickness of the door is not such as to preclude a sufficient extent of the overlying slots in the apron members 14^a and 15^a to register for receiving the vertically-disposed end studs. Also, while it is desirable that the door be suspended so that

its longitudinal center be directly below the middle portion of the carriage axles, yet if it is found desirable—or necessary on account of the thickness of the door—to have the door's said longitudinal center at one side or the other of such middle portion of the carriage axles, such arrangement of the door can readily be made after the nuts on the studs 17 have been loosened sufficiently, as will be readily appreciated, the nuts of course being tightened down again upon the uppermost horizontal apron member after the adjustment has been made.

In Figs. 5, 6 and 7, is shown a modified construction with respect to the pendant and the cross-bar that it is connected with. In other respects the construction is substantially as already described, and, therefore, such like parts are designated by the same reference characters as in the other construction. In said modification the pendant is shown as formed of a cylindrical rod and is indicated by 19. The frame bars of the wheeled carriage from which it depends are bowed outwardly to form a socket through which the pendant passes, and in which it can be rotated, a head on the upper end of the pendant rod resting on the upper edges of said frame bars so as to hold it against withdrawal downward—the pendant thus having a swiveling connection with the carriage frame. For a considerable portion of its length the pendant rod is screw-threaded and such screw-threaded portion extends through a tapped opening in an enlarged or thickened central portion of a cross-bar 20 which corresponds in function with the cross-bar 16 of the first-described construction. The horizontal members of the apron are of course to be provided, as in the other construction, with transverse registering slots 14^c and 15^c through which the pendant rod passes. In this modified form the cross-bar is preferably made as a malleable casting, and owing to having threaded into it the pendant rod 19 it is necessarily made somewhat larger and heavier than the cross-rod first described. It, however, is provided with the same upwardly-extending screw-threaded studs 17 as in the other construction that pass through and cooperate with the slotted apron members so as to allow of the same adjustments as before described. While the modified form does not permit of the outward swinging of the door it does permit of a limited vertical adjustment of the door which, in some door installations, is a matter of considerable importance. When the modified construction is employed the central portion of the recess 18 in the upper edge of the door is deepened so as to allow for the enlarged central portion of the cross-bar and also to receive the lower portion of the pendant, as clearly shown in Fig. 5 where

such deepened central portion of the recess is indicated by 21. It will be readily understood that inasmuch as the cross-bar 20 is held fixedly in place by the nuts 17^a on its studs, a rotation of the pendant in the tapped opening of such cross-bar will compel a vertical adjustment of the door. After the desired vertical adjustment has been thus secured the pendant is held locked against further rotation by means of a nut 22 that is to be screwed down against the uppermost apron member.

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

1. A door-hanger comprising in combination a wheeled carriage, a pendant connected at its upper end therewith, a device connected with the lower end of said pendant and extending at an angle therefrom and in substantially the same direction as the path of travel of the carriage when the hanger is attached to a door, said device having an upwardly extending stud, a member adapted to be affixed to a door and extend over the upper edge thereof and above said device that is connected with the lower end of the pendant, said member being provided with an opening therethrough for the passage of the pendant and another opening for the reception of said stud.

2. A door-hanger comprising in combination a wheeled carriage, a pendant connected at its upper end therewith, a cross-head connected with the lower end of said pendant and extending substantially parallel with the path of movement of the carriage and having upwardly-extending screw-threaded studs, the connection between the pendant and cross-head permitting a relative movement between them, a member adapted to be affixed to a door and extend over the upper edge thereof and above said cross-head, said member being provided with a slot for the passage of the pendant and with other slots for the reception of said studs, and a nut on each stud for locking the studs in different adjusted positions in said last-named slots.

3. A door-hanger comprising in combination a wheeled carriage, a pendant connected at its upper end therewith, a cross-head connected with the lower end of said pendant and extending substantially parallel with the path of movement of the carriage, said cross-head being provided with vertical studs, and a member adapted to be affixed to a door and extend over the upper edge thereof and above said cross-head, said member

being provided with an opening for the passage of the pendant and with other openings for the reception of said studs.

4. A door-hanger comprising in combination a wheeled carriage, a pendant connected at its upper end therewith, a cross-head connected with the lower end of said pendant and extending substantially parallel with the path of movement of the carriage and having upwardly extending screw-threaded studs, the connection between the pendant and cross-head being a jointed one to permit a rocking movement of the cross-head, a member adapted to be affixed to a door and extend over the upper edge thereof and above said cross-head, said member being provided with a slot for the passage of the pendant and with other slots for the reception of said studs, and a nut on each stud for locking the studs in different adjusted positions in said last-named slots.

5. A door-hanger comprising in combination a wheeled carriage, a pendant formed of a piece of metal bent centrally upon itself, means for securing the ends of said strip to said carriage, a cross-head having its central portion rotatably mounted in the bend of said strip, said cross-head having at each of its ends an upwardly-extending stud, a member adapted to be affixed to a door and extend over the upper edge thereof and above said cross-head, said member being provided with a slot for the passage of the pendant and with other slots for the reception of said studs, and means connected with the studs for securing them in any adjusted position in said last-named slots.

6. A door-hanger comprising in combination a wheeled carriage, a pendant connected at its upper end therewith, a cross-head connected with the lower end thereof and extending substantially parallel with the path of movement of the carriage and provided at each end with an upwardly-extending screw-threaded stud, two aprons adapted to be secured to opposite sides of a door and each having a horizontal member for extending over the edge of such door, said horizontal members overlapping and each being provided with a central slot for the passage of the pendant and also provided at each side of said central slot with another slot through which last-named slots the said studs extend, and means connected with said studs for securing them in any adjusted position in such last-named slots.

ALBERT L. KERN.