Jan. 26, 1943. H. C. BLODGETT 2,309,436

REMOVABLE CENTER POSTS FOR VERTICALLY SLIDABLE DOORS

Filed June 3, 1939 2 Sheets-Sheet 1

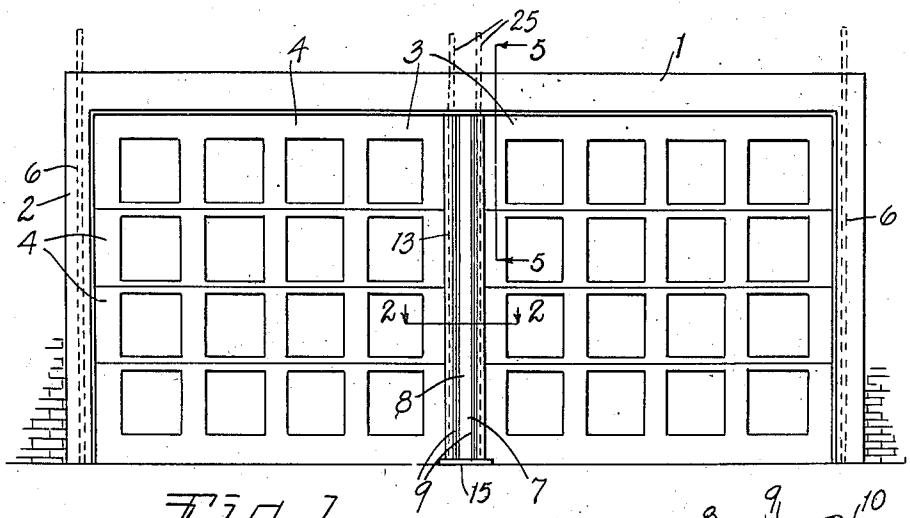


Fig. 1.

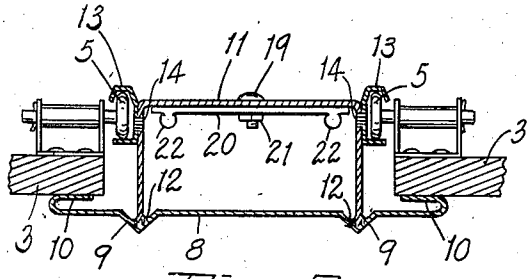


Fig. 2.

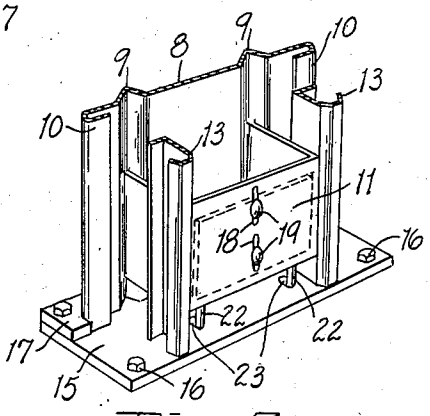


Fig. 3.

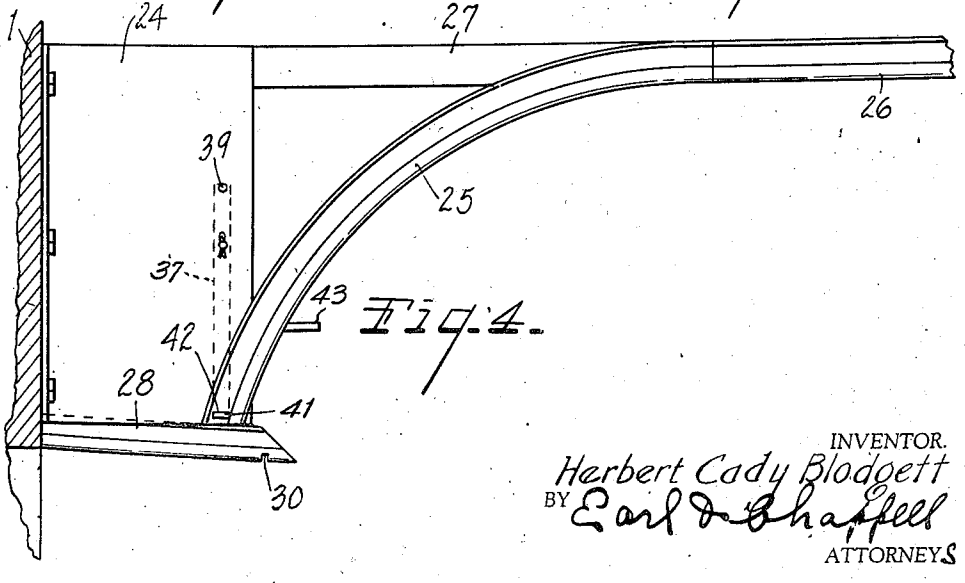


Fig. 4.

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REMOVABLE CENTER POSTS FOR VERTICALLY SLIDABLE DOORS

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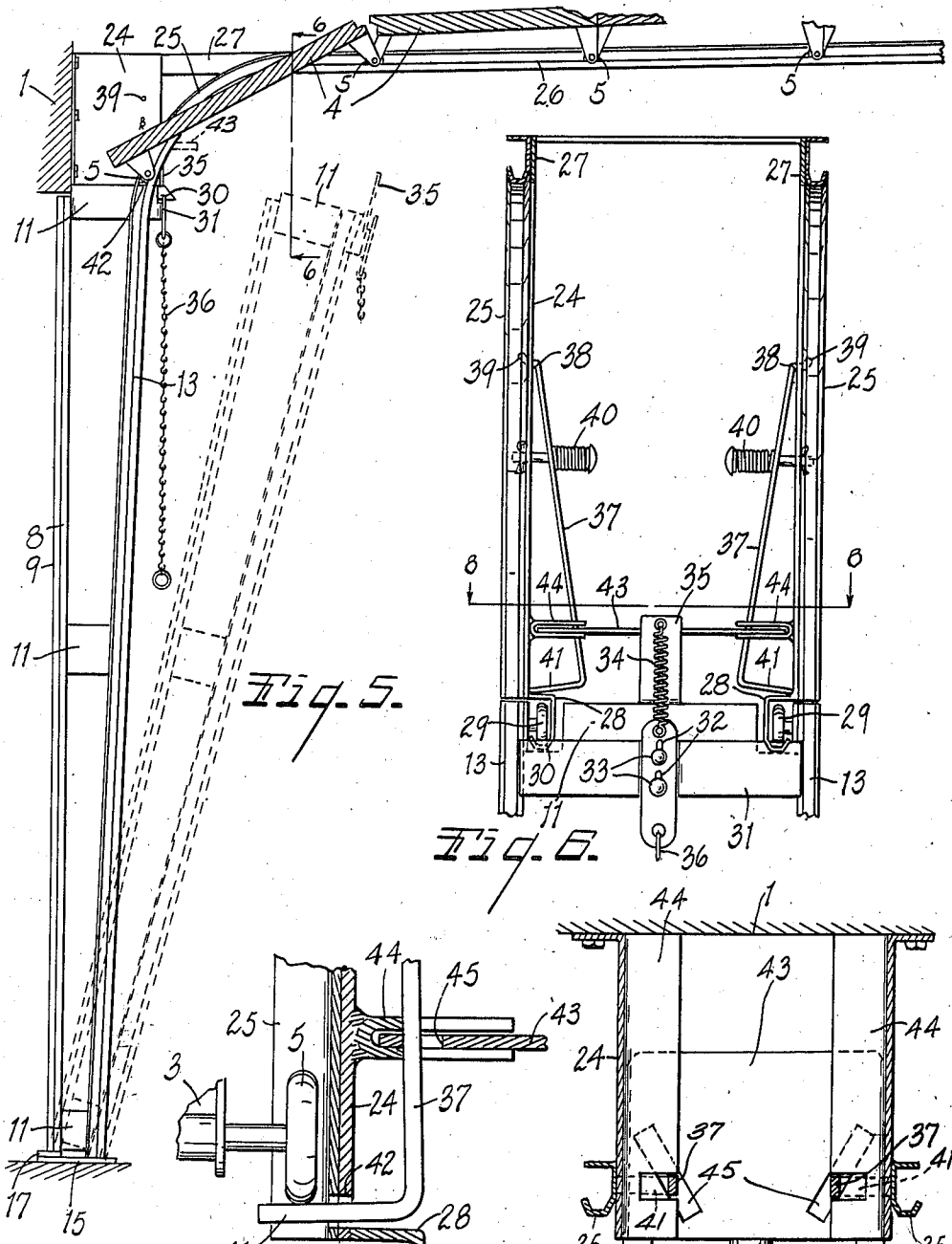


Fig. 5.

Fig. 6.

Fig. 7.

Fig. 8.

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UNITED STATES PATENT OFFICE

2,309,436

REMOVABLE CENTER POST FOR VERTICALLY SLIDABLE DOORS

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Application June 3, 1939, Serial No. 277,122

5 Claims. (Cl. 189—46)

This invention relates to improvements in removable center posts for vertically slidable doors.

The main objects of this invention are:

First, to provide a removable post adapted to be operatively mounted between a pair of vertically sliding adjacent doors to permit the unobstructed use of the entire opening normally occupied by the doors.

Second, to provide a post of the type described, which is simple, inexpensive, and light enough in weight to permit it to be easily removed and carried to another location.

Third, to provide a removable post structure, which will latch or hold the doors in open or horizontally retracted position when the post is removed.

Fourth, to provide a post of the type described providing a suitable surface adapted to be sealingly engaged by the doors in operative closing position.

Fifth, to provide a removable post which is capable of being readily released and removed, although securely held in operative position.

Sixth, to provide a removable post which is manufactured of the fewest possible parts to thereby lower the cost to a minimum and wherein the parts are of exceedingly simplified construction capable of being manufactured in quantities and readily assembled and shipped as a unit.

Objects relating to details and economies of the invention will appear from the description to follow. The invention is defined in the claims.

A preferred embodiment of the invention is illustrated in the accompanying drawings, wherein:

Fig. 1 is a front elevation illustrating the removable center post of the invention installed with a pair of vertically sliding doors, for example, in a garage or hangar.

Fig. 2 is an enlarged fragmentary view in section on line 2—2 of Fig. 1, illustrating details of construction of the post and the relation of the doors thereto.

Fig. 3 is a fragmentary perspective view further indicating the structure of the center post and its mounting on a floor plate.

Fig. 4 is a fragmentary view in side elevation illustrating details of construction of the header and track provisions associated with the post of the invention.

Fig. 5 is a fragmentary view in side elevation, being in section on a line corresponding to line 5—5 of Fig. 1, illustrating the post mounted in the door opening with a vertically sliding door shown in open position, the manner of removing or positioning the post being indicated in dotted lines.

Fig. 6 is an enlarged fragmentary view in section on line 6—6 of Fig. 5, with the post in operative or erected position.

Fig. 7 is an enlarged fragmentary view in section in a vertical plane illustrating the latching member constituting part of the invention in its operative track obstructing position when the post is removed.

Fig. 8 is a fragmentary view in section on line 8—8 of Fig. 6, further illustrating the details of the latching mechanism.

The present invention relates to a removable center post for a vertically operating door installation in which there are a pair of adjacent doors. In some cases, such as for a garage or hangar, it is desirable or necessary to utilize all of the opening beneath the door header, which of course is not possible with the usual permanent center post with which the doors coact in opening and closing. It is therefore the primary purpose of this invention to provide a removable center post capable of being readily and quickly disconnected from the door header and of such construction as to enable the post to thereafter be readily transported to an out-of-the-way position. It is highly desirable that such a structure be not only simple in its parts and light so as to be capable of being carried by a single person, but also that the same be adapted for inexpensive fabrication in order to reduce the cost thereof to a minimum. The structure of this invention includes features particularly designed to these ends.

Referring to the drawings, (Fig. 1) the reference numeral 1 indicates the header of a double door opening or frame 2 having a pair of adjacent vertically sliding doors 3 of well known type associated therewith. These doors are ordinarily provided with hinged sections or panels 4 carrying at the pivot points thereof rollers 5 traveling in vertically disposed tracks 6 at the opposite sides of the door frame. In hitherto known constructions, the centerpost separating the two door openings has carried similar vertically disposed tracks whereby the doors 3 are individually actuable from operative closing position to the inoperative, horizontal, rearwardly retracted position illustrated in Fig. 5.

In accordance with the invention, the center post, which is generally indicated 7 and which is illustrated in detail in Figs. 2 and 3, is made up of a vertical sheet metal front panel 8 having a pair of V-corrugations 9 therein which serve to ornament and also to stiffen the panel as well as perform a further function to be described. This panel terminates at its edges in reversely turned spring flanges 10 providing resilient door jambs against which the doors 3 bear in closing position to thereby provide a tight seal without the use of weather stripping.

The aforesaid panel 8 has welded thereto a plurality of vertically spaced U-shaped metal

bracket or track support members 11, the flanges of which are readily located relative to the front panel 8 by means of the V-corrugations 9. The welding holding the aforesaid sheet metal panel and U-shaped members together is indicated at 12.

The post 8 carries on opposite sides thereof a pair of track members 13 which are welded to the outer sides of the members 11 at 14. The post tracks 13 receive the door rollers 5 in the manner clearly illustrated in Fig. 2. The vertical portions of the track are preferably rearwardly inclined as illustrated.

In order to position the post 7 relative to the door frame, I provide a floor plate 15 located in the door opening centrally between the doors 3 and secured by bolts, studs, or other suitable means 16 to the floor. This plate has a front abutment or positioning member 17 secured thereto, the said member preferably having an outline corresponding to the outline of the face of the vertical panel 8. The abutment member enables the post to be quickly and easily located in place on the floor plate and to thereafter be firmly held in position against forward displacement. The web of the lowermost support member 11 has a pair of spaced vertically extending slots 18, through which extend bolts 19 carried by an adjusting plate 20 on the inner side of the U-shaped member. Nuts 21 coact with the aforesaid bolts to enable the plate 20 to be adjustably positioned vertically. This plate 20 has a pair of pins or lugs 22 welded thereto, which project downwardly and are engageable in recesses 23 in the floor plate so as to enable the initial mounting of the post on the plate to be readily and quickly effected.

The post 7 made up of the front panel, the tracks 13, and the U-shaped connecting members extends vertically the approximate height of the horizontal door header 1. Immediately above the post, the header is provided with a bracket or other fixture providing a pair of rearwardly directed bracket plates 24, see Figs. 5, 7 and 8, which are spaced laterally substantially and have the curved portions 25 of the horizontally mounted tracks 26 secured thereto, the aforesaid curved portions being aligned with the vertical tracks 13 on the post in the operative erected position of the latter illustrated in solid lines on Fig. 1. These horizontal tracks 26 are also supported by a rearwardly extending fixed arm 27 suitably secured to the door header bracket 24. The tracks 25 and 26 are adapted to receive the track rollers 5 on the vertically operable door and, like the post tracks 13, are disposed on the outer sides of the post in front to rear alignment with the latter tracks 13. On the inner side thereof, the bracket side plates 24 carry the post guides or ways 28 which are straight channel-shaped members welded to the said plates substantially at right angles to the vertical, though slightly inclined forwardly and upwardly. These ways are adapted to receive wheels or rollers 29 which are mounted on the inner sides of the uppermost post member 11, the aforesaid wheels 29 entering the stationary guide ways 28 as the post 7 is swung from the inoperative position illustrated in dotted lines in Fig. 5 to the operative position illustrated in solid lines in Fig. 5.

In order to latch the post in operative vertical position, I provide a pair of latch keeper notches 30 in the bottoms of ways 28 adjacent the outer ends of the ways, see Figs. 4 and 5, and I slidably mount on the uppermost bracket 11 a vertically acting spring urged latch member 31. This member is in the form of a plate having vertical slots 32 therein guided by suitable studs 33 on the web of U-shaped member 11. The said latch plate is resiliently biased upwardly by the coil spring 34 connected thereto and to the U-shaped member, entering the keeper notches 30 in ways 28 in erected position to hold the parts in that position. The web of the uppermost U-shaped member has connected thereto, preferably integrally, an upstanding tongue or tappet 35, the function of which will hereinafter be referred to.

From the foregoing, it will be apparent that with the post in the operative position shown in solid lines in Fig. 5 the track elements 13, 25, and 26 form a continuous track for the door rollers 5 and the post is securely held in operative position by the engagement of latch 31 in the keeper recesses or notches 30 on the fixed ways 28. The latch 31 is adapted to be actuated downwardly by a convenient chain 36 to disengage the same from the keeper notch, whereupon the post may be swung rearwardly to the dotted line position, the guide wheels or rollers 29 rolling outwardly of the ways 28 and facilitating this movement.

The invention also includes means for preventing downward actuation of the horizontally retracted door 3 when the post has been removed as described. This includes a pair of track obstructing members or arms 37 which are disposed within the bracket plates 24 in a substantially vertical position, being loosely pivoted to the bracket plates at 38 by means of offset lugs 39 and being normally urged outwardly by coil compression springs 40 mounted on headed studs carried by the bracket plates 24. These springs are interposed between the heads of the studs and the arms 37 and serve to normally urge the arms outwardly so that offset fingers or lugs 41 on the arms are normally urged through side openings 42 in the wings of the bracket 24 and the curved track portions 25. Thus, in outward position, the track obstructing lugs 41 intercept the curved track portion obstructing the lowermost wheels 5 on the door as illustrated in Fig. 7 to prevent the further downward movement of the door. When the lugs are retracted in a manner to be described movement of the wheel into the vertical track 13 is possible.

In order to actuate the aforesaid obstructing members or arms 37 to retracted position, I provide a plate 43 which is slidably mounted in opposed horizontally opening U-shaped guides 44 welded on the inner sides of the bracket plates 24. This plate has the inclined cam slots 45 therein, in which slots the arms 37 are disposed. The plate 43 is normally resiliently biased outwardly by the coaction of spring urged arms 37 with the cam slots so that with the post 7 in inoperative withdrawn position the plate projects outwardly from bracket 24 as illustrated in dotted lines in Fig. 5 and in solid lines in Fig. 4, the arms 37 then being in track intercepting position. The plate 43 is, however, adapted to be engaged by the upstanding tappet 35 on the uppermost post bracket 11 to urge the plate inwardly against the action of springs 40, with the result that the cam slots actuate the arms 37 inwardly toward one another to withdraw fingers or lugs 41 to inoperative position of Figs. 6 and 8. The result is that with the post in operative erected position free passage

of the door guide rollers 5 along the continuous guide track is permitted.

The aforesaid construction is one which is exceedingly inexpensive, light, and readily manufactured and installed by reason of its skeleton construction. It may be readily assembled and shipped as a unit. Once the post is set up, to remove and carry it away, it is necessary only to disengage the latch 31 by actuation of chain 30, whereupon the door 3 will be held in horizontally retracted position until the post is again replaced, which is likewise readily accomplished by merely engaging lugs 22 with the floor plate recesses 23 and tilting the post forwardly.

Although I have illustrated the aforesaid skeleton construction as an advantageous feature, it will be apparent to those skilled in the art that the U-shaped post members or brackets 11 may be replaced by a continuous member if such is desired.

I have illustrated and described my improvements in an embodiment which is very practical. I have not attempted to illustrate or describe other embodiments or adaptations as it is believed this disclosure will enable those skilled in the art to embody or adapt my improvements as may be desired.

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

1. In combination with a swingably removable post for the door frame of a vertically acting door, fixed door guide tracks, means securing said tracks to the frame, said post having opposed tracks coacting with said fixed tracks in operative position of the post to constitute continuations thereof, a pair of track obstructing members, means pivotally mounting said members for lateral swinging movement relative to said frame between said fixed tracks, said members having track obstructing elements thereon and said fixed tracks having openings through which said elements are swingably receivable in operation thereof to dispose the same in track obstructing position, horizontally reciprocable cam means mounted on said frame between said members having camming engagement therewith to swingably actuate the same, spring means urging said cam means in a direction to dispose said members in operative position with said elements obstructing said fixed tracks, and means on said post operatively engageable with said cam means in the operative position in the post in said frame to cause the cam means to withdraw said members from operative track obstructing position.

2. In combination with a swingably removable post for the door frame of a vertically acting door, fixed door guide tracks, means securing said tracks to the frame, said post having opposed tracks coacting with said fixed tracks in operative position of the post to constitute continuations thereof, a pair of track obstructing members, means mounting said members for movement relative to said frame between said fixed tracks, said members having track obstructing elements thereon and said fixed tracks having openings through which said elements are receivable in operation thereof to dispose the same in track obstructing position, cam means mounted on said frame between said members having camming engagement with said members to actuate the same, means urging said cam means in a direction to dispose said members in operative position with said elements obstructing said fixed tracks, and means on said post operatively engageable with said cam means in the operative position in the post in said frame to cause the cam means to withdraw said members from operative track obstructing position.

3. In combination with a swingably removable post for the door frame of a vertically acting door, fixed door guide tracks, means securing said tracks to the frame, said post having opposed tracks coacting with said fixed tracks in operative position of the post to constitute continuations thereof, a pair of track obstructing members, means mounting said members for movement relative to said frame, said members having track obstructing elements thereon and said fixed tracks having openings through which said elements are receivable in operation thereof to dispose the same in track obstructing position, cam means mounted on said frame having camming engagement with said members to actuate the same, means urging said cam means in a direction to dispose said members in operative position with said elements obstructing said fixed tracks, and means on said post operatively engageable with said cam means in the operative position in the post in said frame to cause the cam means to withdraw said members from operative track obstructing position.

4. In combination with a swingably removable post for the door frame of a vertically acting door, fixed door guide tracks, means securing said tracks to the frame, said post having opposed tracks coacting with said fixed tracks in operative position of the post to constitute continuations thereof, a pair of track obstructing members, means mounting said members for movement relative to said frame, said members having track obstructing elements thereon and said fixed tracks having openings through which said elements are receivable in operation thereof to dispose the same in track obstructing position, cam means mounted on said frame having camming engagement with said members to actuate the same, means urging said members into operative position with said elements obstructing said fixed tracks, and means on said post operatively engageable with said cam means in the operative position in the post in said frame to cause the cam means to withdraw said members from operative track obstructing position.

5. In combination with a swingably removable post for the door frame of a vertically acting door, fixed door guide tracks, means for securing said tracks to the frame, said post having opposed tracks coacting with said fixed tracks in operative position of the post to constitute continuations thereof, track obstructing members, means mounting said members for movement relative to said frame to obstruct said fixed tracks when the post is removed from the frame, cam means on the frame engageable with said members to retract the same from track obstructing position, means on said post engageable with said cam means when the post is in operative position to effect said retraction, a guide way on said frame extending rearwardly therefrom and substantially horizontally, and an anti-friction guide roller on said post adjacent the top thereof rollingly engageable in said way to laterally position the post relative to the frame and to facilitate swinging thereof into operative position in the frame and actuation of said cam means.

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