Oct. 25, 1932. J. W. CROWELL 1,885,084

DOUBLE DOOR HARDWARE

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Fig. 1

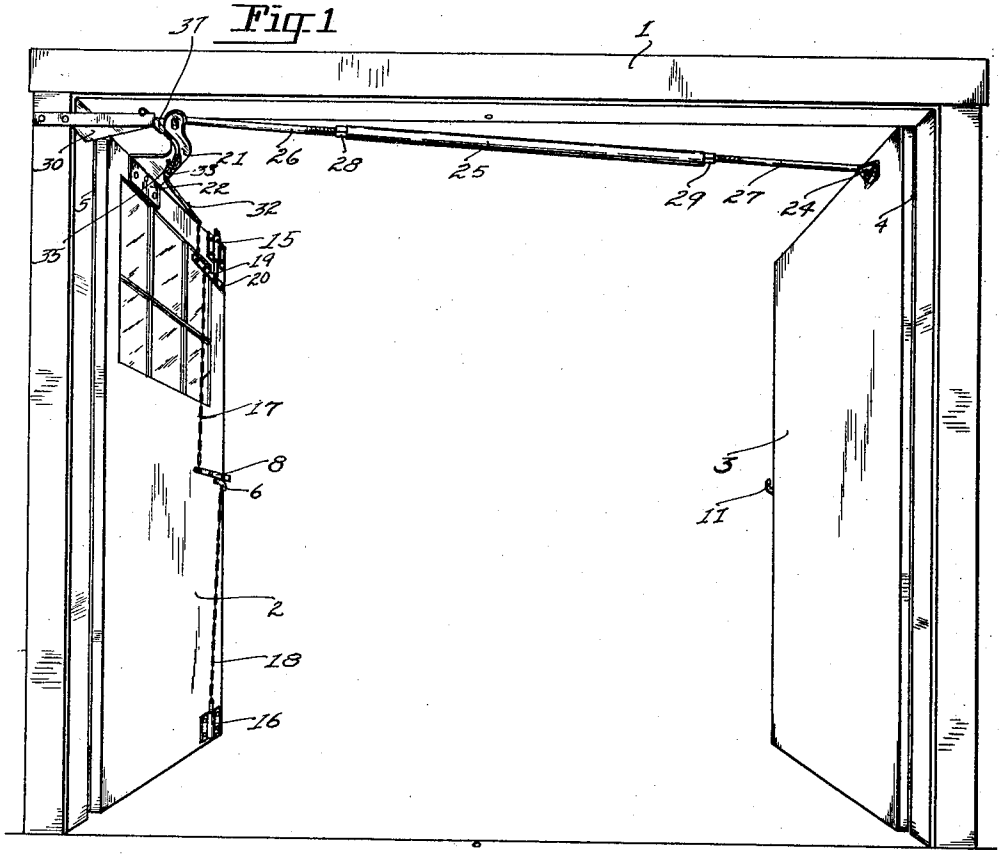
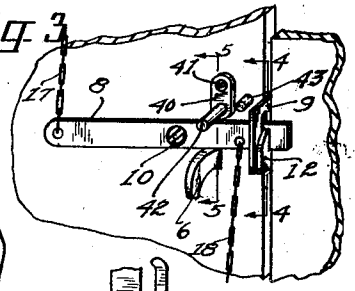


Fig. 3



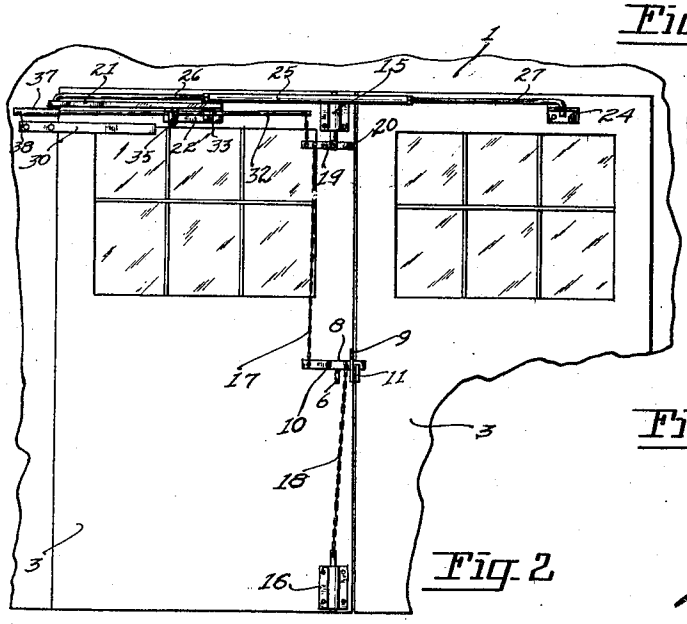


Fig. 2

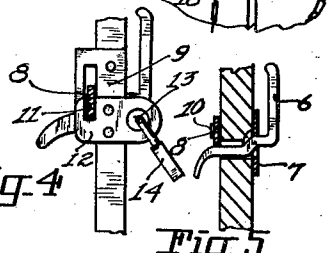


Fig. 4

Fig. 5

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DOUBLE DOOR HARDWARE

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Fig. 6

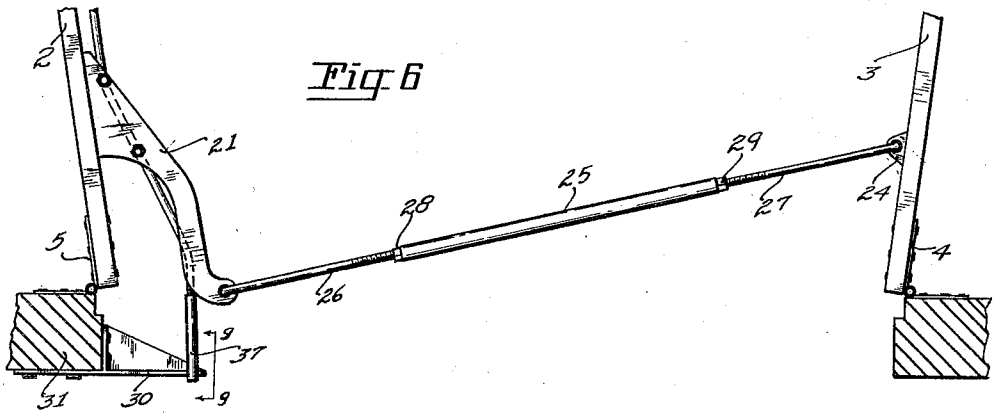
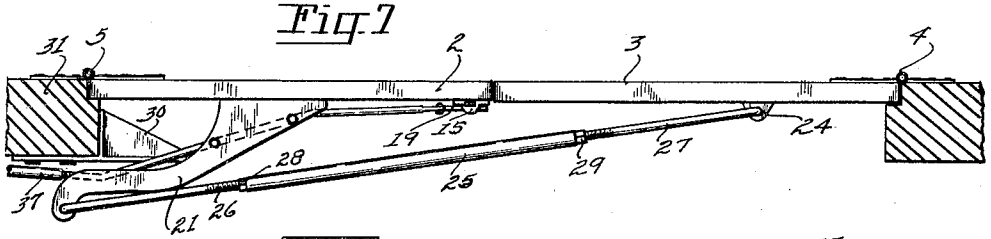


Fig. 7



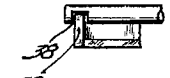


Fig. 9

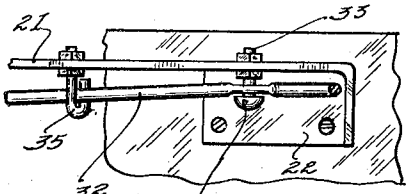


Fig. 10

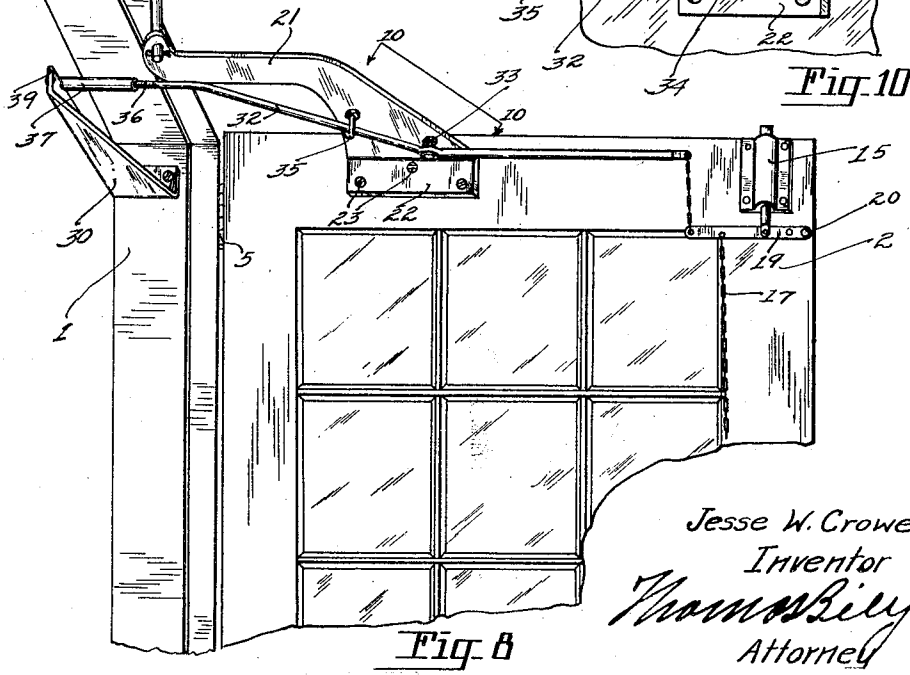


Fig. 8

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UNITED STATES PATENT OFFICE

JESSE W. CROWELL, OF PORTLAND, OREGON

DOUBLE DOOR HARDWARE

Application filed February 5, 1931. Serial No. 513,605.

The purpose and object of my invention is to provide hardware for double doors that are adapted to be hinged about vertical hinges. My devices are so arranged that when one of the doors is opened the other of the doors will also be opened and when one of the doors is closed the other door will also be closed.

The invention in its preferred embodiment comprises a bracket adapted to be placed upon the inside of one of the doors, and a bracket adapted to be secured upon the inside of the other of the doors. An adjustable strut is disposed between the two brackets. A bracket is secured upon the inside of the door frame in registry with a locking latch that will cause the mechanism to engage it and hold the respective doors open, when one of the doors is opened.

A latch is secured to the door assembly whose purpose is to unlock locking bolts secured to the upper and lower end of one of the doors, when it is desired to open the doors. A locking bar is associated therewith which unlocks a locking latch from the bracket secured to the door frame, when it is desired to shut the door. The manually manipulative latch assembly extends through the door.

One of the objects of my invention consists in providing hardware for pairs of double hinged doors that is adapted to lock the doors in either closed or open position by manipulating only one of the doors.

A further object of my invention consists in providing simply constructed hardware for doors that is comprised of few parts and adapted for use upon companion pairs of doors. The devices may be easily installed and may be used over relatively long operating periods of time with freedom from mechanical operating annoyances.

A still further object of my invention consists in so constructing the hardware for double acting companion doors that it will facilitate the opening and/or the closing of the pair of doors when but one of the doors is manually manipulated.

A still further object of my invention consists in so constructing garage door hardware that the hardware may be adapted to pairs of garage doors of substantially greater, or less widths by the adjustment of only a strut. The strut is adapted for connecting one of the doors to the other.

A still further object of my invention consists in the placing the garage door hardware upon the inside of the doors thereby to eliminate the hazard of having the same tampered with.

Still further objects of my invention consists in providing hardware that will facilitate its placement upon pairs of doors of varying widths with equal facility and that will permit the locking of the doors when open and locking the doors shut through the use of a lock placeable through the hasps of the hardware that is disposed upon the outside of the garage door.

With these and incidental objects in view, the invention consists in certain novel features of construction and combination of parts, the essential elements of which are set forth in the appended claims, and a preferred form of embodiment of which is hereinafter shown with reference to the drawings which accompany and form a part of this specification.

In the drawings:

Fig. 1 is a perspective view of a pair of doors, illustrating the doors open and illustrating the same as being viewed from the inside toward the front looking out.

Fig. 2 is a fragmentary, front view of the doors closed and viewing the same from the inside.

Fig. 3 is a fragmentary, perspective view of the latch mechanism as viewed from the inside.

Fig. 4 is a sectional, end view of the latch mechanism, the same being taken on line 4—4 of Fig. 3, looking in the direction indicated.

Fig. 5 is a sectional, end view, of the latch mechanism, the same being taken on line 5—5 of Fig. 3, looking in the direction indicated.

Fig. 6 is a fragmentary, top, plan view, of the pair of doors illustrated in Fig. 1 and illustrating the doors as being locked, in an open position.

Fig. 7 is a sectional, top, plan view, of the mechanism illustrated in Fig. 1 and in Fig.

6 and illustrating the doors as being closed.

Fig. 8 is a perspective, view of the primary brackets secured to one of the doors and of the mechanism associated therewith, the same being made to illustrate the mechanism when the door is locked, in open position.

Fig. 9 is a fragmentary, end view, of the locking latch, adapted for locking the doors in open position, the same being taken on line 9—9 of Fig. 6, looking in the direction indicated.

Fig. 10 is a fragmentary, sectional, side view, of the mechanism illustrated in Fig. 8. The same being taken on line 10—10 of Fig. 8, looking in the direction indicated.

My invention is primarily intended for use in conjunction with pairs of garage doors of substantially equal sizes adapted for being hinged about a vertically disposed hinge. I do not wish to be limited in the application of my device to garage doors as the same may be used with equal facility on pairs of doors for any and all purposes wherein the same are to be hinged about vertically disposed, or substantially vertically disposed hinges.

Like references characters refer to like parts throughout the several views.

1 is the door frame. 2 and 3 comprise a pair of doors which are adapted for being hinged about hinges 4 and 5 and maintained thereby vertically secured to the door frame. A hand manipulative latch 6 extends through one of the doors and is adapted for being manipulated from either side thereof. The hand manipulative latch is manipulative relative to a plate 7, preferably placed upon the outside of the door for the purpose of taking the place of a latch that may be reciprocated in order to raise the locking latch 8. A door plate 9 is secured to the same door and the locking latch 8 is rockably disposed about a suitable journal support 10. The locking latch 8 is adapted to engage within a receiving slot 11 disposed within the plate 12.

Holes 13 are placed in registry within the respective plates 9 and 12 in order that a lock 14 may be placed therethrough for locking the doors when in a closed position. Locking bolts 15 and 16 are placed upon the oppositely disposed ends of the same door in order that the doors may be locked to the door frame.

Flexible connections 17 and 18 are secured to the latch 8 and are preferably placed equidistant from the journal pin 10. The flexible connections 17 and 18 are either directly, or indirectly secured to the locking bolts 15 and 16. The locking bolt secured to the top of the door is preferably secured to a locking latch 19 which is hingedly disposed about a journal pin 20. A bracket knee 21 has an off-set flange 22 disposed upon its one end to facilitate the fastening of the bracket knee to the door. The bracket knee is secured to the door by any suitable fastening means, as through the use of screws, or bolts 23. A bracket 24 is secured to the oppositely disposed door 3. A strut connects the brackets 21 and 24. The strut is comprised of a central barrel member 25 and adjustable ends 26 and 27 which are adjustably secured to the barrel 25. When the strut has been adjusted to the desired position, the same will be locked relative to each other, as through the use of lock nuts 28 and 29.

A bracket 30 is secured to one of the posts 31 of the door frame. A latch bar 32 is adapted to engage a supporting bolt 33 that is secured to the knee bracket 21 and extends downwardly therefrom. The supporting bolt 33 has a head 34 that is adapted for positioning, and for permitting the latch bar 32 to be pivoted thereabout.

A U-shaped bolt 35 is also secured to the knee bracket 21 and extends downwardly therefrom and is in registry with the latch bar 32 and in spaced relationship with supporting bolt 33.

The outer end of the latch bar 32 is threaded as illustrated at 36 and an adjustable head end 37 is threadedly secured to the latch bar 32 and to the rib 39 of bracket 30.

A notch 38 is disposed within the latch bar 32 that is adapted to engage the rib 39 of the bracket 30 as illustrated in Fig. 9, this arrangement is to hold the door assembly open and locked when the head 37 engages the rib 39 of the bracket 30. The manipulation of the latch 8 unlocks the locking bolt from the bracket and permits the doors to be closed.

To facilitate the locking of the locking latch from the inside when the doors are closed, I provide a bar 40 that is rotatably disposed about a supporting journal pin 41. An arm 42 extends outwardly from the free end of the bar 40 that is in registry with the latch 8 and when rotated into the position, as illustrated in Fig. 3, the latch is held locked and when rotated about the pin 41 so that the arm engages the stop pin 43 the latch 8 may be freely manipulated.

While the form of mechanism herein shown and described is admirably adapted to fulfill the objects primarily stated, it is to be understood that it is not intended to confine the invention to the one form of embodiment herein shown and described, as it is susceptible of embodiment in various forms, all coming within the scope of the claims which follow.

What I claim is:

1. In a device of the class described, in combination with a pair of doors, locking bolts secured to the upper and lower portions of one of the doors, a latch disposed through the same door, a locking latch rockably secured to the same door and adapted for being manipulated by the first mentioned latch, means for connecting the locking bolts to the locking latch, brackets on the doors, a strut connecting the brackets, a bracket secured to the

frame of the doors, and a latch bar carried by the bracket of the first mentioned door, said bar engaging and being in direct alignment with said frame bracket.

2. In a device of the class described, in combination with a pair of doors, locking bolts secured to the upper and lower portions and at one end of one of the doors, a latch disposed through the same door, said latch being adapted for manipulation from either side of the door, locking means rockably secured to the same door, said locking means adapted for being actuated by the latch, means for connecting the locking bolts to the locking means, brackets on the doors, an adjustable strut connecting the brackets, a bracket secured to the frame of the doors, and tilting locking means carried by the bracket of the first mentioned door, said locking means being in locking engagement with the said frame bracket when the doors are in open position.

3. Apparatus as in claim 2 including means for connecting the tilting locking means to the upper one of the locking bolts.

4. In a device of the class described, the combination with a door frame, a pair of doors hingedly secured to the frame, locking bolts secured to the upper and lower portions of one of the doors, manually manipulative locking means disposed within the same door between the locking bolts, means for connecting the locking bolts to the locking means, brackets disposed upon the doors, adjustable means connecting the brackets, a bracket secured to the door frame, tilting locking means associated with and adapted to engage the bracket disposed upon the locking bolt carrying door, and means for connecting the tilting locking means to the upper one of the locking bolts.

5. In a device of the class described, the combination of a pair of doors, brackets secured to the doors, a strut connecting the brackets, a supporting bolt secured to one of the brackets, a U-bolt secured to the same bracket, a locking bar rockably disposed relative to the supporting bolt and adapted for being maintained in alignment by the U-bolt, a head disposed upon the free end of the locking bar, said head being provided with a locking notch adapted to engage the frame bracket, a bracket secured to the door frame and disposed in registerable alignment with the head, and manually manipulative means for disengaging the notched head from the bracket of the door frame.

JESSE W. CROWELL.