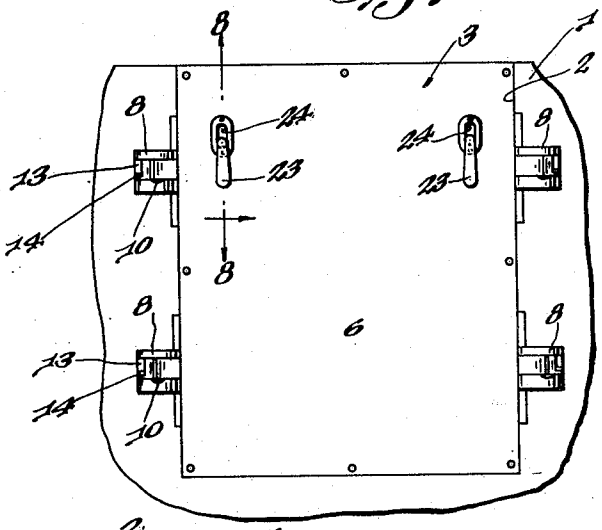
July 22, 1930. W. P. HUEBNER 1,771,041

DOOR MOUNTING

Original Filed July 24, 1925 2 Sheets-Sheet 1

Fig. 1.



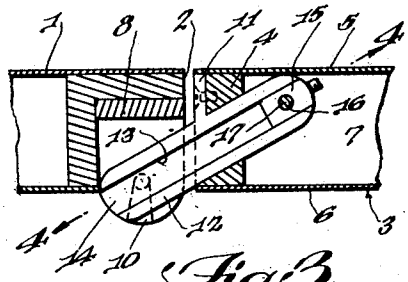


Fig. 3.

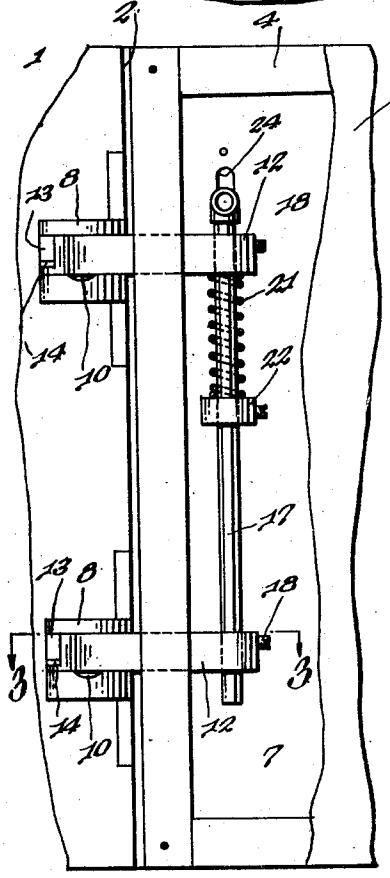


Fig. 2.

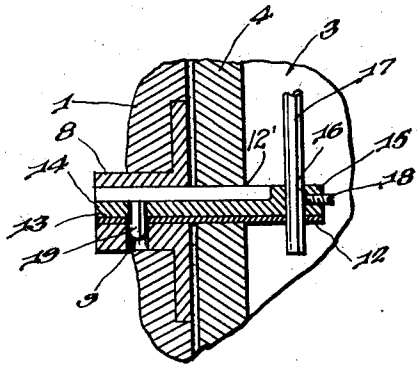


Fig. 4.

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DOOR MOUNTING

Original Filed July 24, 1925 2 Sheets-Sheet 2

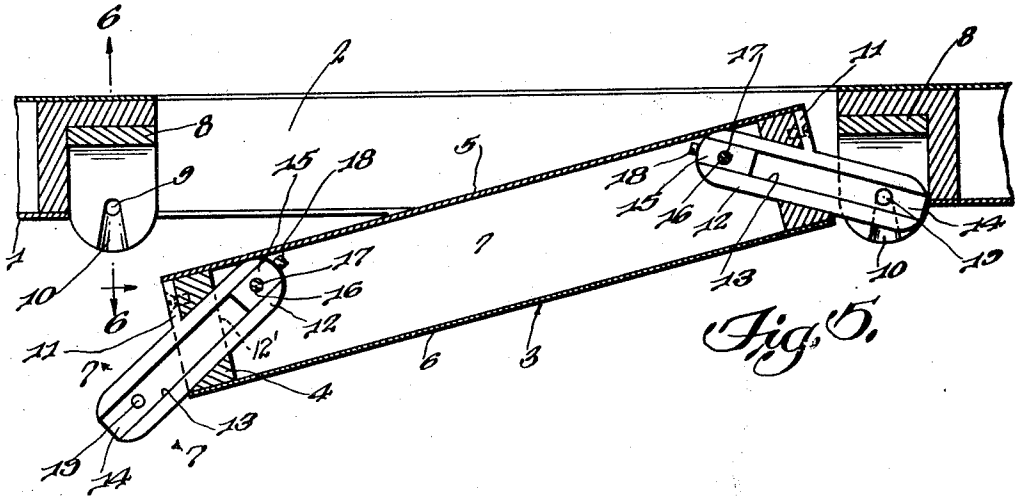


Fig. 5.

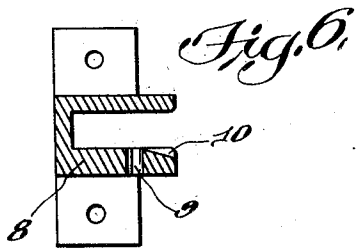


Fig. 6.

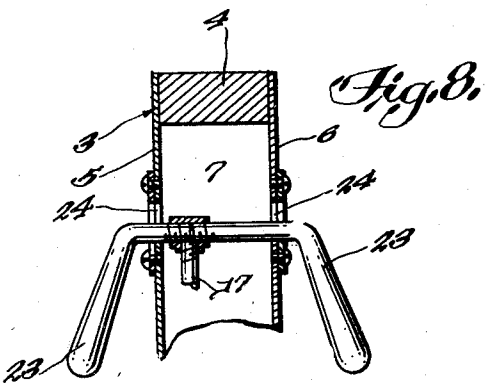


Fig. 8.

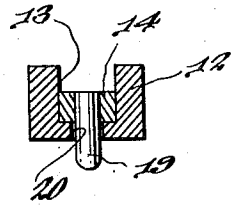


Fig. 7.

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Patented July 22, 1930 1,771,041

UNITED STATES PATENT OFFICE

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DOOR MOUNTING

Refile of abandoned application Serial No. 45,923, filed July 24, 1925. This application filed May 13, 1930. Serial No. 452,143.

The invention relates to door mountings and more particularly has reference to a type of door mounting which allows a door to be swung or pivoted to an open position about either of its lateral edges.

This application is a re-file of an application filed July 24, 1925, Serial No. 45,923.

The usual practice in mounting doors is to provide hinges on one lateral edge of the door only and to swing the doors from these hinges as a pivot. With such construction, the door may be opened about one side only.

Doors hung according to the method outlined in the above construction possess many disadvantages, principally among them being the difficulty of carrying bulky objects through the doorway and the inconvenient loss of space caused by the fact that the door can be swung about one edge only.

While door mountings have been constructed which allow the door itself to be pivoted or opened about either of its edges. they have as a general rule possessed a highly complicated design due to a complex linkage system employed to actuate the hinges or pivots thereof. Necessarily the tendency for a mounting of this type to become out of order is great.

The major object of this invention is to provide a novel door mounting capable of allowing a door secured thereto to be opened and swung about either of its edges.

An equally important object of this invention is the provision of a door capable of being opened and swung about either of its edges, which may be applied to any type of structure, vehicle or boat, and which may be associated with any type of door frame.

Another object of the invention is to devise a door mounting which is so constructed and arranged as to form a latch mechanism for retaining the door against swinging movement and also provides a suitable hinge construction whereby the door may be readily swung to an open position about either of its edges.

A further object of the invention is to devise a door capable of being opened about each edge with hinges on each edge and means for disengaging a set of hinges on one edge of the door from their pivot so that the door may be opened from that side.

A still further object of the invention is the designing of a door capable of being opened about either edge, the door and mounting being of simple construction and possessing a compact design.

With these and other objects in view, which may be incident to my improvements, the invention consists in the parts and combinations to be hereinafter set forth and claimed, with the understanding that the several necessary elements comprising my invention may be varied in construction, proportions and arrangement, without departing from the spirit and scope of the appended claims.

The invention contemplates the provision of a door mounting which allows the door to be opened about either of its edges. One method of practically effecting the concept of the invention is the provision of a novel set of hinges on each edge of the door with means for disengaging the pivot of a set of the hinges from cooperating mounting members on the door frame so that the door may be opened by exerting a force upon the side of the door which has been disengaged from the hinges.

In order to make my invention more clearly understood, I have shown in the accompanying drawings, means for carrying the same into practical effect without limiting the improvements in their useful applications to the particular constructions, which for the purpose of explanation, have been made the subject of illustration.

In the drawings:

Figure 1 is an elevational view of my improved door mounting showing the door in closed position.

Figure 2 is a detailed elevation of the mechanism at one side of the door.

Figure 3 is a detailed section on the line 3—3 of Figure 2.

Figure 4 is a sectional view on the line 4—4 of Figure 3.

Figure 5 is a horizontal sectional view taken through the hinge and latch members.

Figure 6 is a detailed section on the line 6—6 of Figure 5.

Figure 7 is a detailed section on the line 7—7 of Figure 5.

Figure 8 is a detailed section on the line 8—8 of Figure 1.

Throughout the drawings similar reference numerals refer to like parts in the different views. There is shown in Figure 1 a wall indicated by the reference numeral 1. As will presently appear this may be the wall of any type of structure, ship, or vehicle. This wall is provided with an opening 2, forming a door frame in which a door 3 is mounted so as to provide a closure.

As may be observed from an inspection of Figures 2, 3, and 5, the door is formed of suitable edge members 4, which may be of any desired material. Secured to the side portions are the back face 5 and front face 6 of the door. Thus it may be observed that between the faces 5 and 6 and the sides there is provided a compartment or chamber 7.

Mounted upon each side of the door frame by screws or the like, are a plurality of U-shaped members 8. As may be noted in Figure 6 each U-shaped member is provided with a vertical opening or socket 9 through one arm of the U. This arm is also formed with an inclined guideway 10 which extends from the outer end thereof to the opening 9. It is to be noted that the guideway slopes downwardly from the opening to the end of the arm of the U-shaped member, the purpose of which will hereinafter appear.

The door edges 4 are provided with suitable openings 12′ of rectilinear cross section which communicate with the compartment 7. Each opening 12′ is cut on a diagonal which slopes outwardly from the back face 5 to the front face 6 of the door. Secured to the door edge adjacent the bottom of each opening is a plate 11 which supports a latch bar 12 positioned in the opening 12′. Each latch bar 12 is an elongated rectangular member having a channel 13 extending therethrough for its full length. In effect the latch bars give the appearance of a channel beam used in building construction work.

Adapted to be seated in each of the channels 13 so that they are movable vertically are latch plates 14. These plates are rectangular shaped members and have formed upon their outer end, that is the end adjacent the side of the opening 2, projecting pins 19, which are adapted to pass through an opening 20 formed at the outer end of the latch bar with which each plate 14 is associated.

The inner end of each latch plate 14 is enlarged as indicated by the reference numeral 15. Thus the latch plate presents the appearance of the letter L. The enlarged end 15 of each plate is provided with an opening 16 through which an actuating rod 17 passes. Cooperating with the opening 16 in the latch plate is a similar opening in the latch bar so that the rod 17 may pass through both of these members. For the purpose of securing each latch plate to the rod 17 a set screw 18 is provided.

As pointed out, one of the objects of the invention is the provision of a door mounting which is of such construction as to allow the door to be opened from either of its edges. In order to accomplish this a pair of U-shaped members 8, latch bars and latch plates are provided upon each side of the opening 2 and upon each edge of the door. For the purpose of actuating the latch plates so that the door may be opened, closed and latched, the rod 17, previously mentioned, is secured to each pair of latch bars on the same edge of the door, as is clearly shown in Figure 1.

The rod 17 has mounted thereon a coiled spring 21 which is maintained in contact with the upper latch bar 12 by means of an adjustable collar 22 mounted upon the rod 17.

For the purpose of raising each rod 17 so as to operate the latch mechanism an actuating handle 23 is provided. This handle extends through both sides of the door as is shown in Figure 8 and is mounted so as to slide within the cooperating slots 24 formed in each face of the door. The upper end of the rod 17 is secured to the actuating handle in any convenient manner as shown in Figure 8 so that upon lifting the handle upwardly the rod 17 may be raised.

From the foregoing description the operation of the door will at once be apparent. Assuming that the door is closed, as disclosed in Figure 1, it will be appreciated that each projecting pin 19 will be seated within the socket 9 formed in each of the U-shaped members 8.

For the purpose of description, assume that the door is to be swung about the hinges on its right hand side, as viewed in Figure 1. In order to accomplish this the operating handle 23 on the left hand side of the door is pulled upwardly. This results in raising the rod 17 and consequently the latch plates 14 upon the left hand side of the door. When this operation is completed, it may be observed that the pins 19 are cleared from their engagement with the sockets 9 formed in each of the U-shaped members 8 on the left side of the door. While still maintaining the actuating handle 23 in a raised position the door may now be opened.

It will be appreciated that because of the construction of the handle 23 the door may be opened by a person on either side thereof. Of course, in some instances the double handle may be dispensed with and it is necessary only to provide a handle which projects on one side of the door.

While the pins 19 on the left side of the door have been freed from engagement, it will be appreciated that the pins on the right hand side of the door are still in engagement with the sockets in the U-shaped members on

that side. Thus the pins on the right hand side of the door function as pivots and allow the door to be swung open or shut as desired.

Upon the release of the operating handle 23, the rod 17, because of the spring 21, is forced downwardly and as it descends it carries with it the latch plates 14. These plates are seated in flush engagement with the bottom of the channel 13.

To close the door it is only necessary to push it together. As the door reaches the end of the U-shaped members 8 positioned on the left of the door, the pins 19 ride up the inclined guideway 10 on each of these members. When the door has reached its closed position these pins will be directly over the sockets 9 and will be seated therein because of the action of the spring 21 which draws the latch plates downwardly, thus the door is automatically secured in a closed position.

While the operation of the door has been described as opening from the left, thus pivoting the door upon its right hand side, it will be appreciated that to open the door from the right hand side so as to pivot it about the pins on the left, operations similar to those outlined above are carried out. In this instance, however, the actuating handle on the right is operated.

Although each actuating handle 23 has been described as operated separately in order that its latch mechanism may be released it will be appreciated that by simultaneously raising the operating handles on each edge of the door, the door may be entirely removed from its frame. In many instances, particularly in transporting bulky objects through the doorway, the advantage of this construction will be apparent.

While only two latch bars and latch plates with cooperating U-shaped members have been disclosed on each edge of the door, it will be appreciated that a greater number of these may be employed without departing from the spirit of the invention or the scope of the appended claims. By such an expedient the door may be of any size desired if suitable supports therefor are provided.

Likewise it is to be understood that while I have shown a door, the frame or wall adjacent thereto being opened at its upper end, as in the case of a door on an automobile having an open body, it will be understood that the door mounting of my invention may be associated with any type of door frame. Thus the door mounting may be associated with a frame closed on four sides or one closed on two sides only. It will also be appreciated that the door may be mounted so as to swing either inwardly or outwardly as well as to be pivoted about a horizontal or vertical axis.

From the foregoing description it will be appreciated that I have provided a novel door mounting which allows the door to be swung from either of its edges using the other edge as a pivotal axis. Likewise it is to be observed that a door of this nature which may be employed with any type of structure, vehicle or ship, and which may be associated with any type of door frame has been devised. It will also be appreciated that I have designed a door capable of being swung about either of its edges as a pivot, which is of simple design and of simple operation.

While I have shown and described the preferred embodiment of my invention, I wish it to be understood that I do not confine myself to the precise details or construction herein set forth, by way of illustration, as it is apparent that many changes and variations may be made therein, by those skilled in the art, without departing from the spirit of the invention, or exceeding the scope of the appended claims.

I claim:

1. In a door capable of being swung about either of its opposite edges a mounting therefor comprising, a plurality of channeled latch bars positioned on each of the opposite edges of the door, a latch plate movably mounted in the channel of each latch bar, a plurality of hinge members provided with sockets positioned on a door frame associated with the door, each of said latch plates adapted to engage a socket in a hinge member, and means for disengaging the latch plates on either edge of the door from their corresponding hinge members so that the door may be swung about its opposite edge.

2. In a door capable of being swung about either of its opposite edges a mounting therefor comprising, a plurality of channeled latch bars positioned on each of the opposite edges of the door, each of said latch bars being provided with an opening adapted to have a pin formed on a latch plate mounted in the channel thereof pass therethrough, a plurality of hinge members positioned upon a door frame associated with the door, each of said members being provided with a socket adapted to receive a pin of a latch plate, and means for disengaging the pins of the latch plates on either edge of the door from their corresponding hinge members so that the door may be swung about its opposite edge.

3. In a door capable of being swung about either of its opposite edges a mounting therefor comprising, a plurality of channeled latch bars positioned on each of the opposite edges of the door, each of said latch bars being provided with an opening adapted to have a pin formed on a latch plate mounted in the channel thereof pass therethrough, a plurality of U-shaped hinge members positioned upon a door frame associated with the door, one of the arms of each U-shaped member being provided with a socket adapted to receive a pin of a latch plate, each of said arms being

also provided with an inclined guideway sloping downwardly from the socket to the end of the arm, and means for disengaging the pins of the latch plates on either edge of the door from their corresponding hinge members so that the door may be swung about its opposite edge.

4. In a door capable of being swung about either of its opposite edges, said door having edge members connected by a front and back face so as to form a compartment therebetween, a mounting therefor comprising a plurality of channeled latch bars, said door edges being provided with a plurality of openings communicating with said compartment, each of said latch bars extending within said openings and supported by a plate secured to said door edge, a latch plate mounted in each of said channeled latch bars, a plurality of U-shaped hinge members positioned upon a door frame associated with the door, one of the arms of each U-shaped member being provided with a socket adapted to be engaged by a latch plate, and means for disengaging the latch plates on either edge of the door from their corresponding hinge members so that the door may be swung about its opposite edge.

5. In a door capable of being swung about either of its edges a mounting therefor comprising, a plurality of channeled latch bars positioned on each of the opposite edges of the door, each of said latch bars being provided with an opening adapted to have a pin formed on a latch plate mounted in the channel thereof positioned therein, a rod positioned near each edge of the door, each of said rods extending through the latch plates and latch bars on one edge of the door, and being secured to the latch plates, a spring on each rod adapted to maintain it in such position that the latch plates secured thereto are normally seated in the channels of the latch bars, an actuating handle connected to each rod so that the rod may be moved to raise the latch bars out of their seat in said channels, and a plurality of U-shaped hinge members positioned on a door frame associated with said door, an arm of each U-shaped member being provided with a socket adapted to engage a pin of a latch plate, each of said arms being also provided with an inclined guideway sloping downwardly from the socket to the end of the arm.

In testimony whereof I affix my signature.

WILLIAM P. HUEBNER.