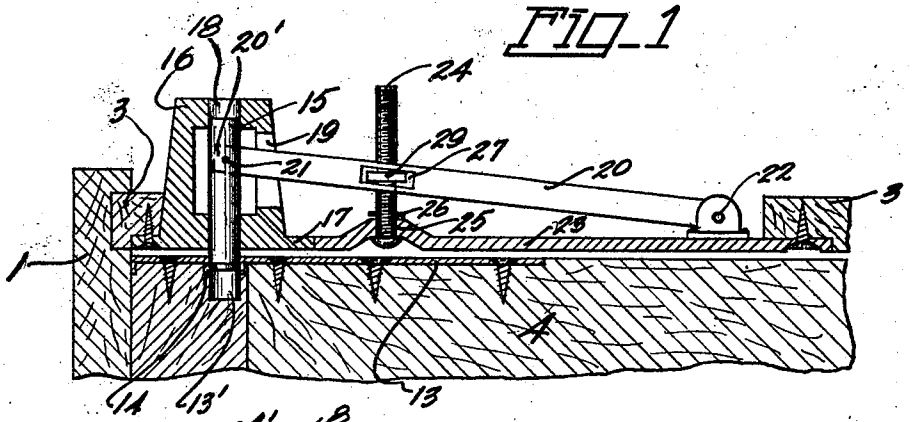
Jan. 1, 1924 1,479,413

C. HEDMAN

DOOR HINGE

Filed Feb. 25, 1922

Fig. 1



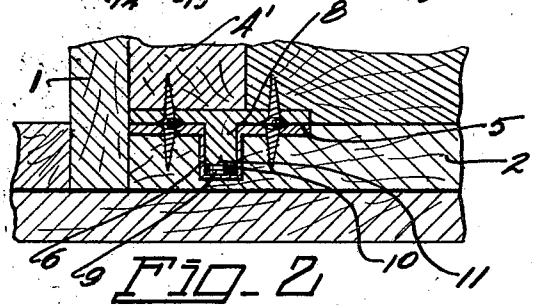


Fig. 2



Fig. 5

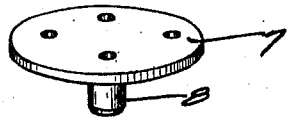


Fig. 3

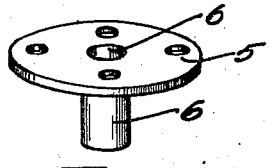


Fig. 4

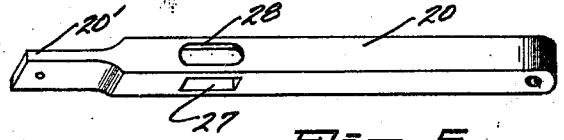


Fig. 6

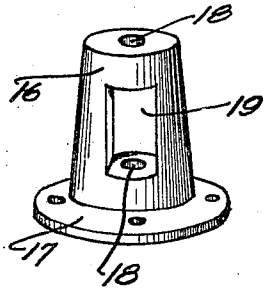


Fig. 7

Inventor
Carl Hedman

By Herbert E. Smith
Attorney

Patented Jan. 1, 1924. 1,479,413

UNITED STATES PATENT OFFICE.

CARL HEDMAN, OF SPOKANE, WASHINGTON.

DOOR HINGE.

Application filed February 25, 1922. Serial No. 539,092.

To all whom it may concern:

Be it known that I, CARL HEDMAN, a citizen of Sweden (first papers having been taken out to become a citizen of the U. S.), residing at Spokane, in Spokane County and State of Washington, have invented certain new and useful Improvements in Door Hinges, of which the following is a specification.

My present invention relates to improvements in door hinges of that type involving the use of upper and lower pintles or pivot pins and in which one of the pintles, as the upper one, is removable for facilitating the hanging as well as removal of the door from its hinges. The primary object of the invention is the provision of means whereby the door may be positioned with convenience and centered with accuracy in its bearings, and retained in proper position for opening and closing. To this end the invention consists in certain novel combinations and arrangements of parts as will be hereinafter more fully described and claimed.

In the accompanying drawings I have illustrated one complete example of the physical embodiment of my invention, wherein the parts are combined and arranged according to the best mode I have thus far devised for the practical application of the principles of my invention.

Figure 1 is a sectional view at the top of the door showing the upper pintle in operative position with relation to the door, and the means for removing the pintle.

Figure 2 is a similar view showing the lower or floor pintle supporting the door.

Figure 3 is a perspective view of the lower plate and pintle for the door.

Figure 4 is a perspective view of the floor socket-plate.

Figure 5 is a perspective view of a centering washer used in the floor socket-plate.

Figure 6 is a perspective view of the lever or link by means of which the removable pintle is adjusted.

Figure 7 is a perspective view of the bearing head for the upper or removable pintle.

In the drawings in which a preferred form of the invention is illustrated 1 designates a portion of the door casing, 2 the floor, and 3 the top rail of the door casing all of which are or may be of usual construction. The door 4 is of suitable construction and is provided with the usual hanging style 4'. The floor is preferably countersunk to receive the bearing plate 5, which as shown is a circular, metallic plate fashioned with a central lower projection or socket member 6, and the plate and its socket member, or hollow boss are secured in the floor member 2 by screws as shown. At the lower edge of the door and secured to the hanging style 4' is located the bottom pintle-plate 7, which is a circular plate or metal disk complementary to the bearing plate 5, and is fashioned with a depending pintle 8. The pintle plate has a bearing on the bearing plate, and the pintle 8 is seated in the socket 6. For adjusting the height of the bottom of the door above the floor I utilize washers 9 in the bottom of the socket or hollow boss 6, and a centering washer 10 is placed on top of these washers 9. The top washer 10 as seen in Fig. 5 is provided with a pointed centering pin 11 that enters a central recess or seat in the bottom of the pintle 8. Thus the required number of washers 9 may be utilized to elevate the door above the floor sufficiently to permit the door to swing over carpet or rug, and the conical centering pin 11 insures the proper and correct position of the pintle on its bearing, as well as reducing friction on the bearing parts.

At the upper edge the door is countersunk or mortised to receive the metal plate 13, secured therein by screws, and a socket 13' in the upper edge of the door, or in the top of the hanging style is strengthened by the integral bearing ring 14 of the door plate 13. The socket 13' and bearing ring 14 are designed to receive the lower end of the upper, removable pintle 15, and the pintle is supported in a hollow cap, preferably tapered and designated as 16. The door casing is mortised or bored out to receive the cap 16 and the cap is secured in place by screws passed through holes in the attaching flange 17 at the lower end of the cap, and shown as circular. Two alined openings 18, 18 are provided in the cap for the pintle and enlarged transverse slot 19 is also fashioned in the cap through which slot the pintle is passed. For raising or lowering the pintle 15 I untilize a lever 20 having one end passed through the slot 19 of the cap, and this reduced end 20' is slipped into a mortise in the pintle and pivoted therein on the pivot pin 21 that passes transversely

through the pintle and the lever end 20'. At its other end this lever has a stationary pivot point 22 on the casing-plate 23 which closes the mortise or opening, in which the lever is located. The lever is swung on its pivot or fulcrum 22 by means of the screw 24 that is passed through an orifice in the countersunk portion 25 of the casing-plate. The screw is free to turn in the casing plate, and a cotter pin 26 is passed through an opening in the screw above the casing plate to retain the screw in operation position.

The lever is fashioned with a pair of transverse intersecting slots 27 and 28, and the screw is passed through the slot 28 as seen in Figure 1. Within the slot 27 of the lever is retained a traveling nut 29 through which the screw is threaded. It will thus be apparent that the screw may be turned in its bearing 25, and as the nut is retained in the slotted lever, the screw action will result in moving the nut on the screw, and through the movement of the nut the lever is swung on its fulcrum or pivot 22. In order to withdraw the pintle from its socket 13'—14, the screw 24 is turned to the left in Figure 1 causing the nut 29 to travel toward the end of the screw thus swinging the lever and elevating the pintle until its lower end is withdrawn from the socket in the top of the door. By turning the screw to the right the movement of the nut is reversed and the pintle may be inserted in its socket.

In hanging the door, the top pintle is withdrawn within its cap 16, and the lower pintle of the door is then centered in correct and elevated position. The socket 13'—14 at the upper or top portion of the door is then alined with the pintle cap and the door turned or swung on its lower pintle out of alinement with the door casing to give access to the screw 24 in the head of the casing.

By turning the screw 24 as described the pintle 15 is projected into its socket in the top of the door, and the door is properly hung. If it is necessary to remove the door, the latter is swung partly open in order that the screw 24 will be accessible and by turning the screw the upper pintle is retracted or withdrawn and the door may be lifted from its lower pintle-bearing. The upper pintle is of sufficient length, and the space between the top edge of the door and the casing-head is adequate to permit placing the lower bearing in place or removing the door from its lower bearing. The conical bearing pin beneath the lower pintle which receives the weight of the door holds the door in proper position on its bearing and also reduces friction, and the presence of the washers 9, as before stated, insure freedom of movement of the door over the floor covering. When properly oiled or lubricated the bearings for the pintles insure a noiseless and easy swinging motion of the door, and a durable and stable door hanging device is secured.

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

1. The combination of a slotted pintle-support in a door casing, a pintle slidably supported in said support, a casing plate, a lever pivoted on said plate and having its free end pivoted to the pintle, a screw having a bearing in the casing plate, and a traveling nut on said screw retained in a slot in said lever.

2. The combination in a door hanging device with a door-plate having bearing-ring, of a casing plate and an adjusting screw having a bearing in said plate, a slotted pintle cap and a slidable pintle in said cap, a slotted lever pivoted on the casing plate and having pivotal connection with the pintle, and a traveling nut on the screw retained in said slotted lever.

3. The combination with a door having a pintle, of a floor bearing-plate and a hollow boss thereon to receive said pintle. washers interposed between said pintle and boss, and a centering washer in said boss having a central centering pin to engage the pintle.

In testimony whereof I affix my signature.

CARL HEDMAN.