April 24, 1962 J. RUDNICK 3,030,655

DOOR PIVOT MEANS

Filed Sept. 11, 1957

Fig. 1.

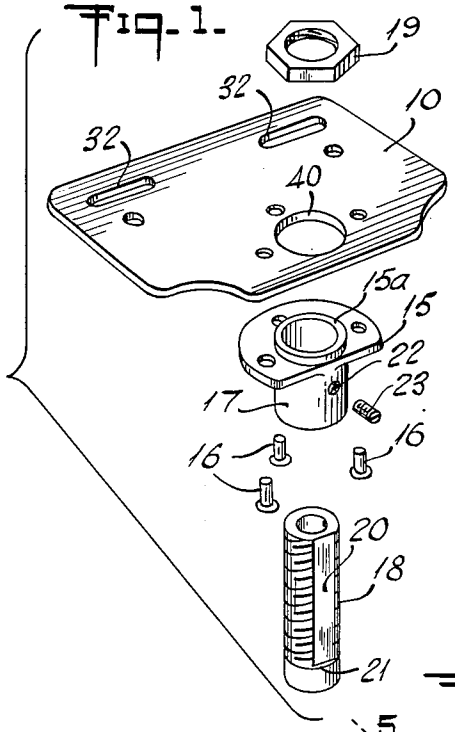


Fig. 2.

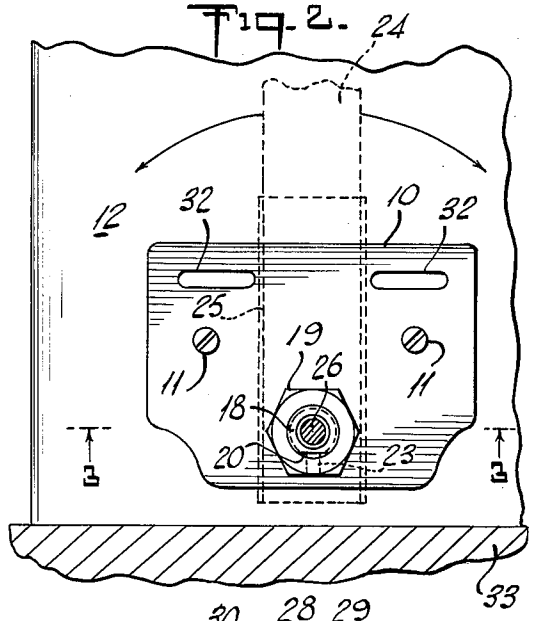


Fig. 4.

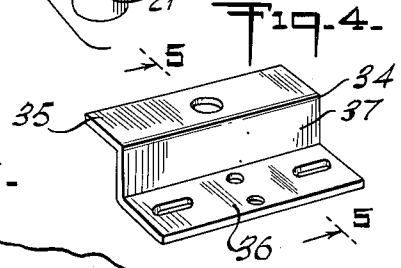


Fig. 5.

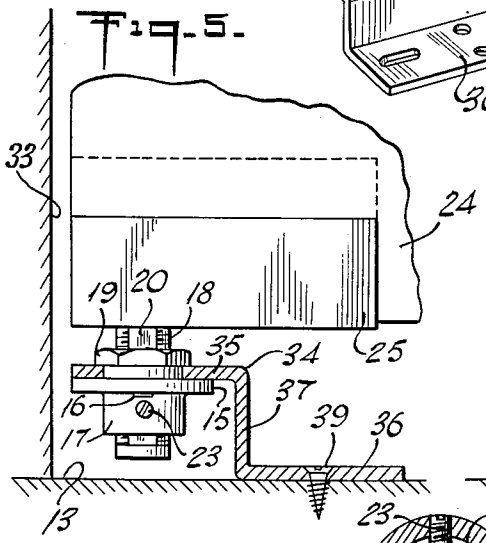


Fig. 3.

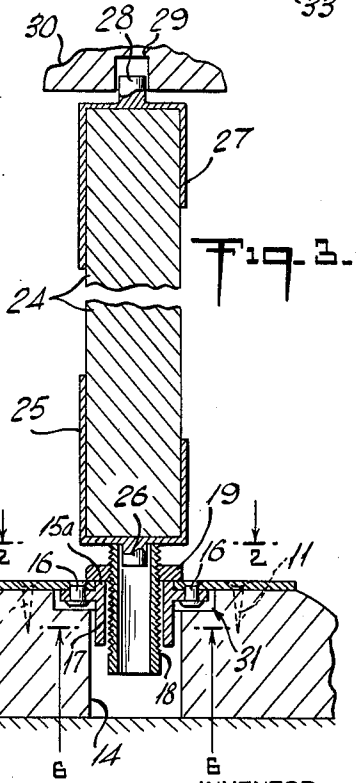
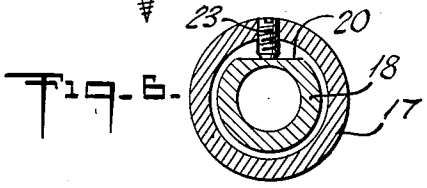


Fig. 6.



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DOOR PIVOT MEANS

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1 Claim. (Cl. 16—151)

The present invention relates to a vertically adjustable door pivot means and more particularly those adapted for folding doors and especially those folding doors which are adaptable for clothing closets and the like. The problem of pivotably suspending folding doors in such a fashion as to enable their adjustment in height is one which has attracted much effort and resulted in various types of structures. Unfortunately, most of the structures developed have been cumbersome in the sense that they are difficult to adjust and expensive and complicated since they entail the assembly of many parts, some of them quite intricate.

An object of the present invention is to provide means to pivotably mount a folding door or the like in such fashion as to enable convenient and simple vertical adjustment in height of the door or member.

Another object thereof is the provision of a vertically adjustable door pivot assembly which contains a minimum of parts and yet is simply and effectively adjustable in height.

Still another object of the present invention is the provision of a durable accurately positionable vertical adjustable means for folding doors and the like.

The above and other objects may be achieved in a preferred form by providing a mounting plate having an aperture therein which may, for example, be affixed to a door saddle, the aperture being coaxial with a cylindrical bore in the saddle and the mounting plate having a depending hollow flanged fitting affixed thereto coaxial with said aperture and extending into said bore, there being a set screw extending inwardly of an inner wall in the depending portion of said fitting, a hollow cylindrical bearing screw being slideably positioned within said depending portion of said flange, said screw having a lateral longitudinally extending flatted portion thereof which bears against said set screw so as to prevent the rotation of said screw relative said flange and mounting plate, and a nut screwed about said screw so that the bottom portion thereof contacts the top of said mounting plate so that as said nut is rotated said screw is displaced vertically, and a pivot pin affixed to the bottom of a folding door, said pin being insertable in the uppermost opening in said bearing screw. Hence, as said screw is displaced vertically, said door pivoted thereon by means of said pivot pin is likewise displaced vertically.

Other objects and a fuller understanding of the present invention may be had by referring to the following detailed description and claims, taken in conjunction with the accompanying drawings which illustrate preferred embodiments thereof, it being understood that the foregoing statement of the objects of the invention and the brief summary thereof is intended to generally explain the same without limiting it in any manner.

In the accompanying drawing:

FIG. 1 is an exploded view in perspective of a vertically adjustable pivot assembly embodying the present invention and suitable for mounting to a saddle underlying a door.

FIG. 2 is a plan view of such assembly mounted upon a saddle together with a door mounted thereon, a portion of a door jamb being shown.

FIG. 3 is a sectional view thereof taken along line 3—3 of FIG. 2.

FIG. 4 is a view of a stepped mounting plate for use in connection with a second embodiment thereof, particularly useful when no saddle is employed and the mounting of the pivoting means is mounted directly to the floor.

FIG. 5 is an elevational view of said second embodiment said stepped mounting plate being shown in section as along line 5—5 of FIG. 4.

FIG. 6 is a sectional view taken along line 6—6 of FIG. 3.

Referring to the form shown in FIGS. 1, 2, 3 and 6, the present invention includes a mounting plate **10** affixed by screws **11** to a saddle **12** which in turn is affixed over floor **13**, said saddle having a cylindrical bore **14**. A hollow flanged fitting **15** having an upper collar **15***a* which fits within a bore **40** in mounting plate **10** is attached to the bottom of mounting plate **10** by rivets **16** and has an unthreaded depending sleeve or shank portion **17** which extends into bore **14**. Said shank serves as a guide for a hollow bearing screw **18** which is held slideably mounted within said shank by a matching adjustment nut **19**. Bearing screw **18** has a longitudinally extending flatted portion **20** at the bottom of which there is formed a horizontally extending step **21**. In a threaded aperture **22** in shank **17** there is positioned a set screw **23**, the inner end of which abuts against, without binding, flatted portion **20** of screw **18**, thus permitting the vertical travel of screw **18** but preventing the rotation thereof along its longitudinal axis.

Step **21** serves as a detent to prevent the vertical upward travel of screw **18** beyond the position wherein step **21** engages set screw **23**. A door **24** is secured to a channel-shaped door support **25** from the lower portion of which there depends a pivot pin **26**, said pivot pin being dimensioned to fit within and being positioned within the aperture in the upper portion of bearing screw **18**, the upper end of said screw and the confronting lower surfaces of door support **25** comprising the bearing surfaces upon which said door rotates. To the upper end of door **24** there is secured a similar channel-shaped door support **27** from which there extends upwardly coaxial with pivot pin **26**, a similar pivot pin **28** journalled in a socket **29** which is secured within a bore, in a support member **30**, coaxial with bore **14**.

Using the means disclosed a folding door is very simply and accurately positioned within its frame. Thus, bore **14** is first made in saddle **12** and if desired, a larger bore **31** may be superimposed upon the top portion of bore **14**, coaxial therewith, so as to permit the positioning of mounting plate **10** flat upon the surface of said saddle, flange fitting **15** lying within said bores and screws **11** securing said mounting plate thereto. If it is so desired, elongated apertures **32** in mounting plate **10** may be employed to temporarily mount said plate to said saddle so as to be horizontally adjustable parallel with a side structure such as door jamb **33**. Door **24** may then be swiftly and easily positioned by inserting pivot pins **26** and **28** in bearing screw **18** and socket **29** respectively. The door may then be adjusted vertically by rotating nut **19**. Since bearing screw **20** is held from rotating relative to mounting plate **10** and nut **19** by means of the engagement of the inner end of set screw **23** with the flatted portion **20** of said screw, the adjustment in height, once made, will not be disturbed when the door is pivoted upon its mount.

A second embodiment which is shown in FIGS. 4 and 5 is employed wherein the door opening is not bordered on the bottom by a saddle but by the floor. In such case, in lieu of mounting plate **10** there is employed a stepped mounting plate **34** comprising two horizontal panels **35** and **36** connected by a vertical panel **37**, horizontal panel **35** having an aperture **38** therein. Mounting plate **34** is secured by screws **39** directly to floor **13**, the balance of the assembly, including flanged fitting **15**, bearing screw **18**, adjustment nut **19**, channel member **25**, door **24** and

the like, all being identical with the form previously described.

The mounting of a door when employing this embodiment of the invention, is self-evident.

Of course, many variations may be made without departing from the spirit of the invention. For example, bearing screw **18** need not be hollow completely along its length, but may bear a depression only in its upper end to form a bearing for pivot pin **26**. Again, a flanged fitting is not essential if the aperture **40** in mounting plate **10** is shaped in a manner corresponding to the cross-section of bearing screw **18** as shown in FIG. 6, since in some forms of the present invention in which the supported doors are of light construction, such a feature is eminently suitable.

So, too, set screw **23** need not be an adjustable screw but there may be substituted therefor a fixed rivet or a fixed pin extending inwardly into shank **17**.

Although the present invention has been described with a certain degree of particularity, it is understood that the present disclosure has been made only by way of example and that numerous variations may be employed without transcending the scope of the invention as hereinafter claimed.

What is claimed is:

Door pivot means to enable the vertical positioning of a door relative to the floor to which it is pivotably connected by means including a pivot pin comprising a

mounting plate horizontally connected to a floor, said plate having an aperture therein, a sleeve fixedly connected to said plate and extending vertically normally downward therefrom, said sleeve being coaxial with said aperture, a bearing screw mounted for reciprocable vertical travel within said sleeve, and extending on either side thereof, the upper end of said screw being recessed to form a bearing socket dimensioned to receive said pivot pin, a nut screwed about said bearing screw above said plate, said screw having a longitudinally-extending external flattened portion, and detent means connected to said sleeve and abutting against said flattened portion of said screw to prevent rotation thereof relative to said plate, whereby as said nut is rotated said bearing screw and said door pivoted thereon are vertically displaced relative to said mounting plate and the floor to which said plate is connected, the upper end of said screw being recessed to a distance greater than the length of said pivot pin whereby said door bears upon the upper surface of said screw.

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