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J. P. McKINNEY, JR

1,618,544

HINGE

Filed Oct. 21, 1924

FIG. 1

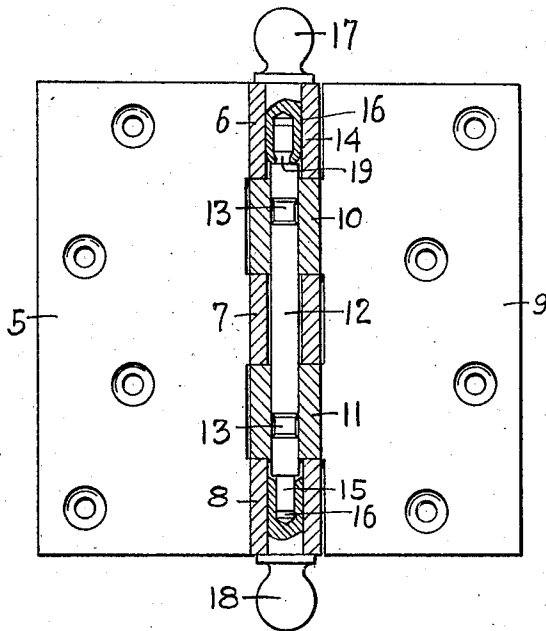


FIG. 2

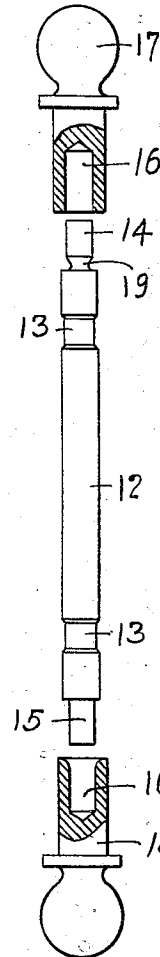


FIG. 3

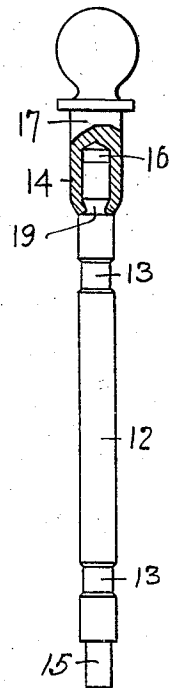
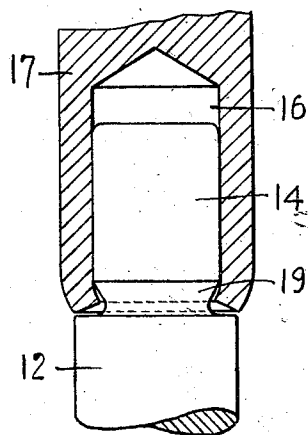


FIG. 4



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HINGE.

Application filed October 21, 1924. Serial No. 745,003.

My invention relates to hinge pintles, and particularly to the pintles of hinges of the butt type wherein the butts that are fastened to the door frame and door respectively are provided with eyes and a pintle for holding the butts in operative relation.

One object of my invention is to provide a hinge of improved form, and one wherein the pintle will wear longer and give more effective service than hinge pintles of the prior art.

One form which my invention may take is shown in the accompanying drawing wherein Fig. 1 is a view, partially in elevation and partially in section, of a hinge embodying my invention; Fig. 2 is a view, on an enlarged scale, of the pintle and ball tips of Fig. 1, in unassembled relation; Fig. 3 shows the manner in which the upper ball tip is connected to the pintle, and Fig. 4 is a view, on a still larger scale, of a portion of the parts shown in Fig. 3.

For convenience of description I have shown one hinge butt 5 provided with three eyes 6, 7 and 8, formed integrally therewith in any well known manner, and which may be secured to a door frame. The co-operating hinge butt 9 is provided with two eyes 10 and 11 also formed in a manner well known in the art and adapted to be secured to a door (not shown).

The pintle 12 which I employ is of somewhat the usual form in that it may be provided with oil grooves 13. However, the pintle has reduced bearing portions 14 and 15 at its upper and lower ends, respectively, that are adapted to seat within recesses 16 formed in the upper and lower ball tips 17 and 18, respectively. The recess 16 in the upper ball tip is partially closed at its lower end to effect a rotatable connection with the groove 19 of the pintle 12, and the tip is not movable longitudinally of the pintle.

The ball tip 18 has a drive fit with the eye 8 and may be roughened somewhat so that it will be retained more securely within the eye when driven home. The bearing portions 16 of the ball tips 17 and 18 are advantageous in that they provide a snug-fitting bearing for the pintle ends which is not always possible with the more or less rough-

ly formed butt eyes, and the interlocking of the ball tip 17 with the pintle 12 prevents the said tip from creeping or working upwardly.

It will be apparent that the greatest strain and wear upon the pintle ordinarily occurs at points opposite to the eyes 10 and 11, and if provision is not made for the pintle to rotate easily in the eyes 7 and 8, the pintle will soon become worn by the eyes 10 and 11 and the door sag.

In the construction shown the pintle is provided with neatly fitting bearings at its upper and lower ends and the weight imposed at the eyes 10 and 11 will tend to cause the pintle to rotate or oscillate with the butt 9 so that the wear usually present at the two eyes 10 and 11 is avoided.

It will be apparent that the two-eye butt may be secured to the door frame and that the three-eye butt may be secured to the door itself, if desired, and it will also be understood that the invention is applicable to butts of other forms and having different eyes than those shown in the drawing.

I claim as my invention:

1. Hinge structure comprising a plurality of superposed eye portions, a pintle of reduced diameter at its upper end extending through said eye portions and having a circumferential groove in said reduced portion, and a tip extending into the upper eye portion and having a recess for the reception of said reduced pintle end, the lower edge of said tip being turned inwardly to prevent relative axial movement of said pintle and tip.

2. Hinge structure comprising a pintle having reduced bearing portions at its ends and a relatively large intermediate portion, a leaf having bearings for rotatably supporting the said reduced portions of the pintle, and a second leaf having a bearing for the intermediate enlarged portion of the pintle, whereby the pintle tends to rotate within the first-named bearings and is frictionally held stationary with respect to the second leaf.

3. Hinge structure comprising a pintle having reduced bearing portions at its ends and a relatively large intermediate portion,

a leaf having upper, lower and intermediate eye portions, the upper and lower eye portions being provided with bearing surfaces for rotatably supporting the reduced pintle ends, a second leaf having two eye portions interspersed between the first-named three-eye portions and having bearing engagement with the intermediate enlarged portion

of the pintle, whereby the pintle tends to rotate within the first-named eye portions 10 and is frictionally held stationary with respect to the two eye portions of the second-named leaf.

In testimony whereof I the said JAMES P. McKINNEY, Jr. have hereunto set my hand.
JAMES P. McKINNEY, JR.