W. C. ROWE.

HINGE.

APPLICATION FILED FEB. 15, 1916.

1,180,192.

Patented Apr. 18, 1916.

Fig 1

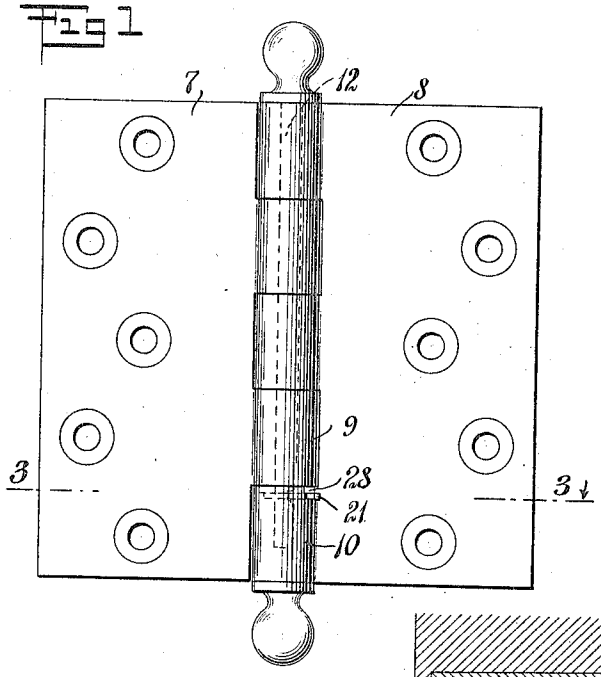


Fig 2

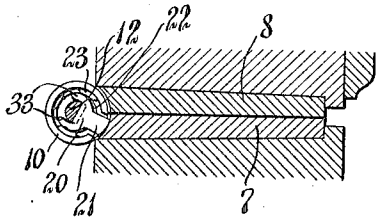


Fig 3

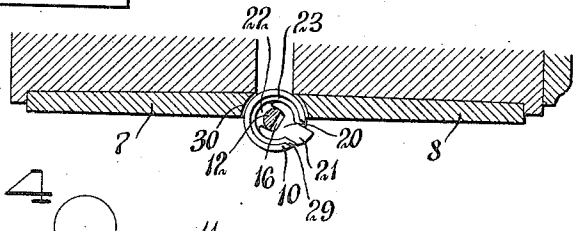
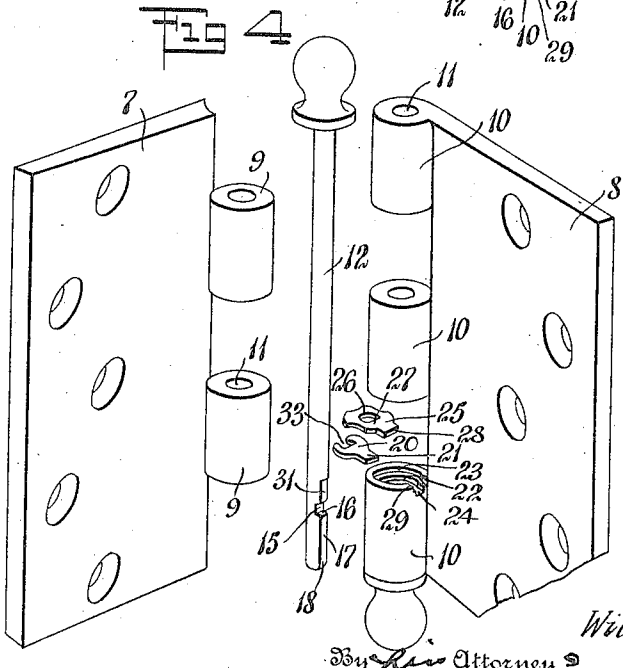


Fig 4



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HINGE.

1,180,192. Specification of Letters Patent. Patented Apr. 18, 1916.

Application filed February 15, 1916. Serial No. 78,356.

To all whom it may concern:

Be it known that I, WILLIAM C. ROWE, a citizen of the United States of America, residing at Plainville, Connecticut, have invented a new and useful Hinge, of which the following is a specification.

My invention relates to hinges and the objects of the invention are to provide a non-rotating and therefore "non-rising" hinge pin and to prevent the removal of the hinge pin when the door is in certain positions.

Another object is to produce a hinge of this character which will be of very simple and inexpensive construction.

In the carrying out of these objects I employ a locking device mounted to slide radially in a knuckle of one of the hinge leaves and provide this slide with an operating portion extending into the plane of and arranged to be operatively engaged by a portion of the coöperating hinge member.

Other features of the invention and details of construction will appear as the specification proceeds, attention being directed to the accompanying drawing wherein is illustrated a practical and preferred form the invention may take.

In this drawing:—Figure 1, is a front or face view of a hinge embodying the invention. Fig. 2, is a sectional view of the same taken substantially on the plane of the line 3—3 of Fig. 1, showing the hinge in the "door-closed" position, with the hinge pin locked against withdrawal. Fig. 3, is a view on the same plane with the door wide open and the hinge pin in unlocked condition. Fig. 4, is a perspective view of the several parts which go to make up this form of hinge.

The two members or leaves of the hinge are designated 7 and 8 and are shown provided with the usual sets of coöperating hinge loops or knuckles 9 and 10 provided with a bore 11 therethrough for the hinge pin 12. This hinge pin is for locking purposes provided in one side thereof with a transversely cut recess or slot 15 providing the transversely extending locking shoulder 16. The side of the pintle in which this transverse locking slot is cut may be flattened as indicated at 17 and the lower end of this flattened portion may be rounded or tapered off as indicated at 18 to form an entering wedge for a purpose which will appear later.

The locking member is in the form of a slide 20 having an abrupt inner end as indicated in Figs. 2, 3 and 4 to engage in the slot 15 in the pintle over the locking shoulder 16 and provided with a radially and outwardly extending portion 21 through which it is operated. In the construction illustrated this slide is mounted in a depressed portion 22 of the annular seat 23 formed in the upper end of the lower knuckle 10, the shank portion 21 of the slide extending outward through the radial passage 24 cut through the wall of the knuckle.

The locking slide is maintained in proper position by a plate 25 mounted in the seat 23 over the top of the slide. This plate has as indicated, in Fig. 4, an opening 26 corresponding to the bore in the knuckle and provided at one side with an inwardly extending projection 27 arranged to coöperate with the flattened side portion 17 of the pintle. The plate 25 is shown secured against rotation in its seat 23 by providing it with a lug 28 forming shoulders engaging with the shoulders indicated at 29 in Fig. 4.

The operation of the invention will be readily understood, it being seen that when the pintle is entered in the bore in the knuckles, the tapered lower end of the pintle acting as a wedge or cam will force the slide outwardly so as to permit the pintle being seated to its full depth with the transverse notch 15 therein in line with the slide. The parts will now occupy the position indicated in Fig. 3. If the hinge leaves are now brought together as in the door-closing operation, the portion 30 of the hinge leaf 7 engages over the outer end of the shank portion 21 of the locking slide and forces said slide inward into engagement over the locking shoulder 16 as indicated in Fig. 2. The hinge pin is now locked against withdrawal and is also held against rotation.

The locking slide need not be relied upon to secure the hinge pin against rotation as this function may be accomplished by providing the cover plate 25 with a projection such as that indicated at 27 in the illustration which, when the parts are assembled, engages the flattened portion at a point indicated at 31 in Fig. 4 when the parts are assembled to hold said pin against turning.

The movement of the locking slide may be guided and assisted by forking the in-

ner end of the slide as indicated at 33 so as to embrace the pintle.

From the foregoing it will be seen that the pintle is held by the plate 25 against rotation in all positions of the hinge leaves and that when the hinge leaves occupy a predetermined position, such as the "door-closed" position indicated in Fig. 2, the pintle will be positively locked against withdrawal. When the parts are in the unlocked position such as that indicated in Fig. 3 where the locking slide is no longer positively held locked with the pintle, the pintle may be withdrawn and the hinge leaves separated, the locking shoulder 18 preferably being disposed on a slight slant as indicated in Fig. 4 so that when the parts are in such a position the inclined locking shoulder will act when the pintle is withdrawn in the capacity of a cam to force the slide outwardly to thereby wholly free the pintle from said slide.

What I claim is:—

1. In a hinge construction, hinge leaves provided with coöperating knuckles having a bore therethrough, a radially movable slide mounted in one of the knuckles, a pintle engaged in said bore having a recess only in one side thereof providing a notch to receive the end portion of the slide, and means for forcing said slide inward into said notch in the side of the pintle to thereby secure said pintle against withdrawal from the knuckle and to hold the same against rotation in said knuckle.

2. In a hinge construction, hinge members having coöperating knuckles provided with a bore therethrough, one of said knuckles having an annular seat surrounding said bore and a radially extending depression below said seat, a radially movable slide engaged in said depression, a plate engaged in the seat over said slide, said slide having a projecting portion arranged to be operatively engaged by the other hinge leaf and a hinge pin having a recess in one side thereof arranged to be engaged by the inner end portion of said slide.

3. In a hinge construction, hinge leaves having coöperating knuckles provided with a bore therethrough, one of said knuckles having an annular seat surrounding said bore and a radially extending passage communicating with said seat, a hinge pin engaged in the bore in the knuckles and provided with a transversely extending recess in one side thereof, a slide mounted in the seat aforesaid provided with forked arms embracing the pintle and a shank portion projecting radially outward through the radial passage arranged to be engaged by a portion of the other hinge leaf and to be thereby forced inwardly into engagement with the recess in the side of the pintle.

4. In a hinge construction, hinge leaves having coöperating knuckles provided with a bore therethrough, a pintle engaged in said bore having a transverse notch providing a locking shoulder and a recessed portion in the side thereof above said locking shoulder, a radially extending slide mounted in one of the hinge knuckles arranged to engage in the notch in the pintle over said locking shoulder and a plate non-rotatably mounted on said knuckle over said locking slide and provided with a projection extending inwardly into the recessed portion in the side of the pintle to therefore hold the same against rotation.

WILLIAM C. ROWE.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."