R. G. WINTER.

DOOR LATCH.

APPLICATION FILED DEC. 11, 1915.

1,244,394.

Patented Oct. 23, 1917.

Fig. 1

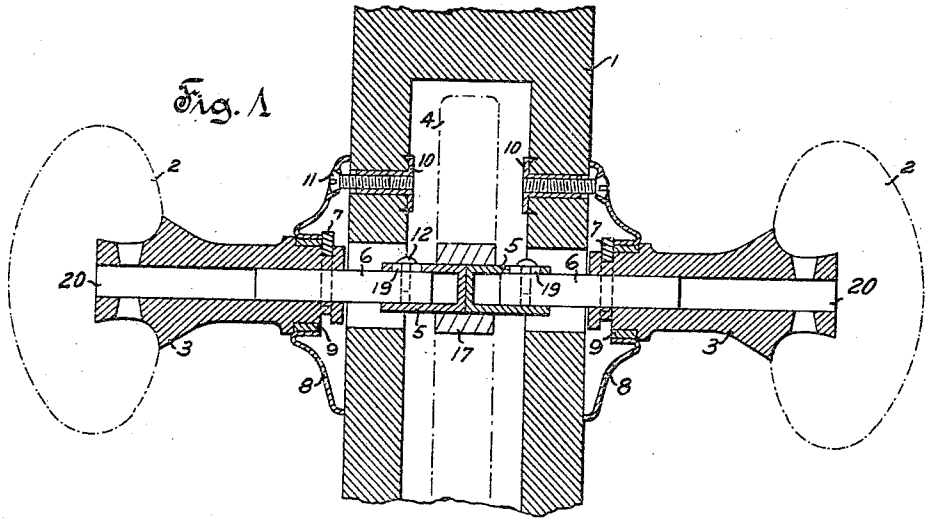


Fig. 2

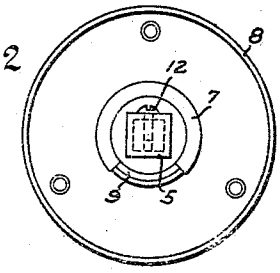


Fig. 3

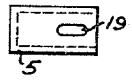


Fig. 4



Fig. 10



Fig. 6



Fig. 9



Fig. 5



Fig. 8

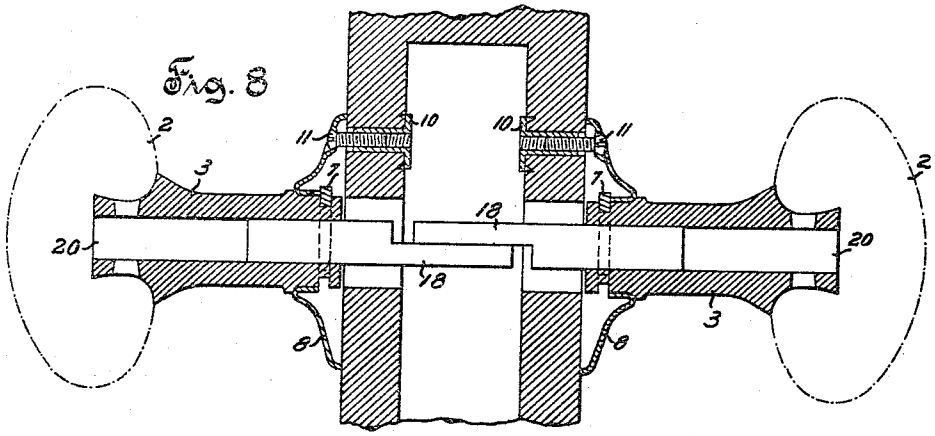


Fig. 7



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UNITED STATES PATENT OFFICE.

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DOOR-LATCH.

1,244,394. Specification of Letters Patent. Patented Oct. 23, 1917.

Application filed December 11, 1915. Serial No. 66,645.

To all whom it may concern:

Be it known that RUDOLPH G. WINTER, a citizen of the United States of America, residing at Milwaukee, in the county of Milwaukee and State of Wisconsin, has invented a certain new and useful Door-Latch, of which the following is a specification.

This invention relates to door latches and has for its object the provision of such a latch which, within limits, is applicable to doors of different thickness without having loose door knobs and in which there are no screws for adjustment visible which are likely to become loose.

This object has been accomplished by forming the oscillating manipulating means in two main parts each of which is mounted in a bearing in the rose at either side of the door, so as to secure same both laterally and against end thrust. One difficulty in doing this has been met. That is the firm securing in place of the rose itself. In the usual case, the door is mortised for some distance about the spindle to accommodate the latch casing. The rose does not extend beyond the limits of the mortise. This leaves only a thin portion of the door to which to fasten the roses. Wood screws would be too short if not interfering with the latch casing, to hold the roses securely enough in the practice of this invention. So here is used clamping means made in two parts one of which is inserted from within the mortise and the other from the outside through the rose. The oscillating manipulating means is made extensible between its journal portions in any convenient way to accommodate the different thickness of door and yet have the two main parts thereof lie within the hub of the latch casing.

In the drawings forming part of this disclosure of the invention,

Figure 1 is a cross section through the latch,

Fig. 2 is an inside view of a rose and attached parts,

Fig. 3 is a side view of a spindle extension piece,

Fig. 4 is an end view of same.

Fig. 5 is a cross section of the wood engaging part of the rose securing clamp.

Fig. 6 is a plan view of same,

Fig. 7 is a face view of the knob shank complementary thrust member,

Fig. 8 is a cross section through a modified form of latch.

Fig. 9 is a side view of a modified form of the wood engaging part of the rose securing clamp, and

Fig. 10 is a plan view of same.

In the practice of one form of the invention disclosed, a door 1 has the usual mortise shown in Fig. 1 with the latch casing 4 in dotted line. The roses 8 are firmly secured in place at the sides of the door by clamping means, the wood engaging part 10 of which is provided with sharp upstanding corners 14, see Figs. 5 and 6. This part 10 of the clamp may be made in any convenient way as by flat heading the end of a tube, or by brazing a head to a tube. A modified form is shown in Figs. 9 and 10, in which a tube 15 has its end flat headed and formed with sharp upstanding corners 16. In all cases the wood engaging part of the rose securing clamp is threaded to coact with the rose engaging part of the clamp, which takes the form of machine screws 11. The roses 8 are formed at the opening therethrough with inwardly extending bearing portions which may or not be reinforced by thimbles 9 secured therein, and which serve to carry the oscillating manipulating means.

The oscillating means is formed in two parts. Each of these parts comprises a knob 2, a knob shank 3, a knob shank complementary thrust member 7, a half spindle 6, and extension piece 5 with its securing screw 12. The knob shank is preferably cast with an axial square hole 20 and the half spindle 6 is pressed or driven therein a desired extent to firmly frictionally secure same in place. The knob 2 is secured to the shank 3 in any desired way.

The knob shank 3 is formed with a journal portion where it passes through the bearing portion of the rose 8. Thrust journals are provided, on the outside of the rose by a shoulder on the knob shank 3, and on the inside of the rose by a complementary thrust member 7 for the mounting of which the shank 3 is recessed, preferably annularly, and the ends of the member after same is engaged with said recess, are bent inwardly as clearly indicated by dotted lines in Fig. 7.

The extension piece 5 is formed of a square tube with preferably one end closed. A longitudinal slot 19 is formed in one side near the other end. The extension piece 5 is secured to the inner end of the half spindle 6 by a screw 12 passed through the slot 19

and threaded in a tapped hole in the half spindle.

In the form of the invention shown in Fig. 8, the extension of the oscillating means is accomplished by forming the half spindles 18 with the half of their ends removed so as to adjustably interfit as shown. In this case the spindle can conveniently be made of larger cross section. In either case the half spindles with their extensions if present, coact to fit with full cross section the square hole in the latch hub 17.

The order of assembling the parts of this door latch is as follows. The wood engaging parts of the rose securing clamps are first set in place from within the mortise. The latch casing is then inserted in place in the mortise and affixed to the door. The knob, shank, and half spindle, with its extension, if any, are next secured to a rose by the thrust member 7. The extension piece 5 is then adjustably secured to the end of the half spindle 6 so as to bring its end in the mid plane of the door finally. The end of the spindle or the extension, is then inserted in place in the hub 17, and the rose firmly fixed in place by the screws 11 of which there are preferably three screwing into the tapped holes in the parts 10 of the clamps holding the rose 8 in place. The remaining rose with attached parts is similarly made fast.

The peculiar advantage of the form of wood engaging part of the rose securing clamp shown in Figs. 9 and 10, is in its adaptability to be placed close up against the transverse wall of the mortise if necessary.

It is not desired to be limited to the exact forms of the invention disclosed, but that the invention includes other forms within the scope of the claims.

It is claimed and desired to secure by Letters Patent,

1. In a door latch, the combination of a door, a latch casing located in a mortise in said door, a rose on each side of said door, clamping means extending to the inner surface of the mortise as an abutment for securing said roses to said door, and mutually separate rigid means each journaled and held from end thrust in one of said roses and each insertible in the latch hub of said casing whereby said hub may be rotated to withdraw the latch.

2. In a door latch, the combination of a door, a latch casing located in a mortise in said door, a recessed rose secured to said door, said rose having an inwardly extending bearing portion, and means journaled in said rose and insertible in the latch hub of said casing whereby said latch hub may be rotated to withdraw the latch, said means including a U-shaped washer located within said rose and a shank having a thrust abutment engaging said rose adjacent the outer end of the bearing portion thereof and a journal fitting said bearing portion of said rose and being recessed adjacent the inner end of the bearing portion of said rose for the reception of said washer before and after its ends are bent into clenching engagement with said shank, said washer serving as a complementary thrust bearing.

3. In a door latch, the combination of a door, a latch casing located in a mortise in said door, a rose at each side of said door, clamping means extending to the inner surface of the mortise as an abutment for securing the roses in place, and mutually separate rigid means each journaled in one of said roses and adjustably extensible to accommodate different thicknesses of door and yet have the parts lie within the hub of said casing whereby said hub may be rotated to withdraw the latch.

4. As an article of manufacture, a knob shank cored with an opening defined by substantially parallel bounding line elements at different distances from the axis of said opening and said opening extending into the body of the shank from only the end thereof, and having a spindle of similar shape held in said opening by friction set up by forcing said spindle therein.

In testimony whereof, the signature of the inventor is affixed hereto.

RUDOLPH G. WINTER.

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