June 29, 1937. S. P. GREDZINSKI 2,085,154

DOOR FIXTURE

Filed Oct. 5, 1936

Fig. 1.

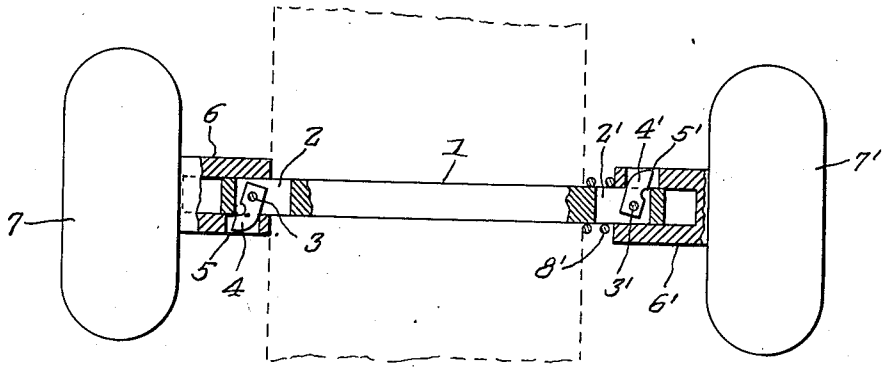
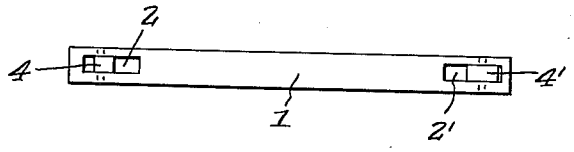


Fig. 2.



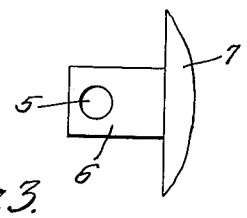


Fig. 3.

Inventor

Stanley P. Gredzinski,

By Clarence A. O'Brien

Hyman Berman

Attorneys

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DOOR FIXTURE

Stanley P. Gredzinski, Mount Carmel, Pa.

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2 Claims. (Cl. 292—354)

This invention relates generally to door fixtures, but more especially to the knob and shaft of the conventional door-locking mechanism.

The object of the present invention is to provide a substitute for the conventional set screw fastened type of knob and shaft which will be more efficient and lasting in service, simple in design and construction, and which requires no screws or screw threads in fastening the knob to the shaft. Consequently, loosening of the knob due to stripping the threads on the knob shaft, an objectionable feature of the conventional knob structure, is entirely avoided.

With the above objects in view, the invention consists of the novel construction, arrangement and combination of parts hereinafter more fully described and pointed out, with reference to the accompanying drawing, wherein:

Figure 1 is a view, partly in elevation and partly in section of the proposed novel knob and shaft construction.

Figure 2 is a plan view of the knob shaft and Figure 3 is a fragmentary detail view of the knob shank.

In applying the invention to a convential door knob fixture, the knob shaft 1 is provided inwardly of each end with a square faced opening 2—2'. This may be done by drilling the space between two of the set screw holes usually provided in the conventional set screw fastened type of knob and shaft door lock and by filing the resultant hole to make it square at the edges. A small hole is then drilled crosswise of each end of the shaft and forwardly of the transverse center of holes 2—2' to receive the pivot end 3—3' of locking dogs 4—4'; there being two of such dogs, one for each hole in the shaft. The locking dogs are preferably formed of heavy sheet metal and with half round free end portions, shaped and filed to pass easily into the set screw holes 5—5' in the shanks 6—6' of the conventional doorknob 7—7'.

In assembling the knobs and shaft, the inside knob preferably is placed on the shaft prior to inserting same through the door-contained lock. This is done by turning the shaft until the dog 4 at the inside end of the shaft swings downwardly below the shaft and then sliding the knob over the end of the shaft until the dog drops into the knob shank opening 5. The shaft is then inserted through the door and lock to project on the outer side of the door, the latter being represented in dotted lines in Figure 1. A helical spring 8' is placed over the outer projecting end of the knob shaft and the outside knob 7' is then placed over the end of the shaft and pushed inwardly to compress and tension the spring 8', while at the same time bringing the shank opening 5' in registry with the shaft opening 2' to permit dog 4' to enter the knob shank opening in which it is retained by the thrust of the spring 8' outwardly against the knob when the latter is released.

The conventional door lock generally has one or more flat washers on the knob shaft, one on each side of the door to take up play between the knobs. With the present invention, such washers are unnecessary since the spring 8' functions to take up all loose play between the knobs and at the same time yieldably tensions the assembly to hold the knob and shaft securely interlocked by the dogs 4—4' whereby the knobs and the shaft are turned as a unit.

The units of the device are easily assembled or taken apart, and as will be obvious, the invention may be applied to conventional knob-type door lock structures and with minimum alterations in the original construction thereof.

Having thus described the invention, what is claimed as new is:

1. A doorknob structure comprising a shaft, a knob on each end of the shaft, said shaft and knobs being relatively slidable, co-acting members on said knobs and shaft for releasably connecting the former with the latter when the knobs are moved outwardly of the corresponding ends of the shaft, said co-acting members being disengageable by the inward movement of the said knobs on the shaft, and a spring encircling the shaft and adapted to be compressed between one side of the door and the adjacent knob for yieldably holding said knobs at the limit of their outward movement.

2. A doorknob structure comprising a shaft, a knob having a tubular shank inserted over an end of the shaft, a dog pivoted at one end within an opening in the end of the shaft and having its free end engaging a corresponding opening in the shank of the knob, the said free end of the dog being movable out of the opening in said shank of the knob and into the opening in the shaft when the said knob is moved in one direction on the latter and being adapted when engaged with said knob to abut an edge of the opening in the shaft when the said knob is moved in the opposite direction, and means for resiliently resisting inward movement of the knob on the shaft.

STANLEY P. GREDZINSKI.