No. 754,721. PATENTED MAR. 15, 1904.

D. W. TOWER.

LATCH.

APPLICATION FILED APR. 22, 1903.

NO MODEL.

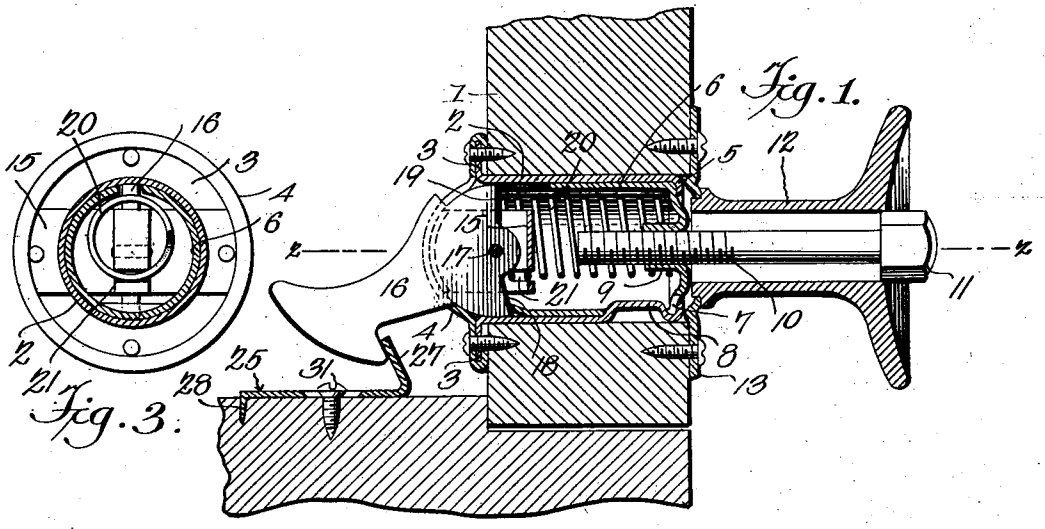


Fig. 1.

Fig. 3.

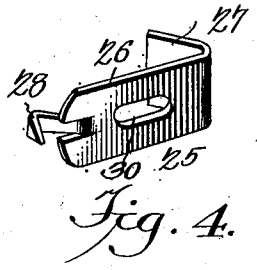


Fig. 4.

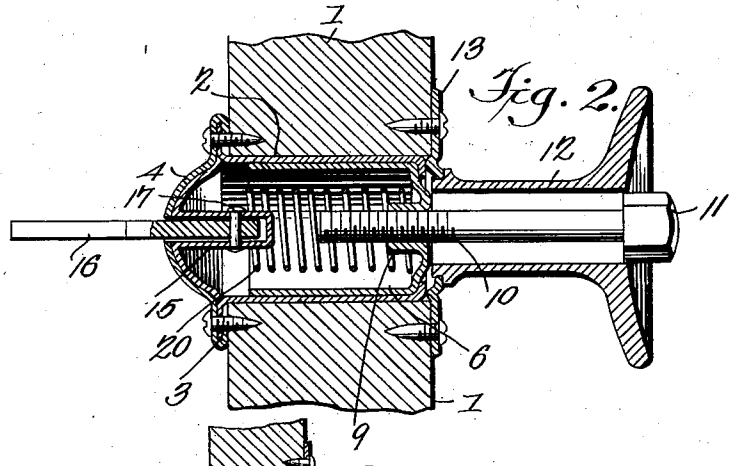


Fig. 2.

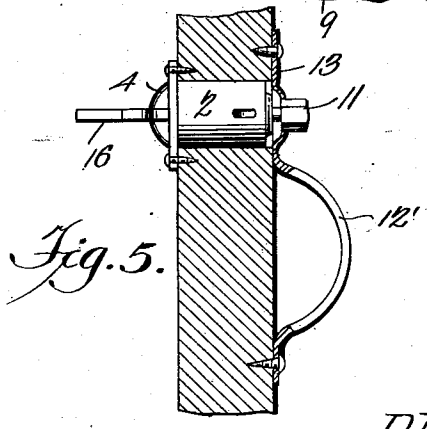


Fig. 5.

Witnesses

E. F. Stewart

Jno. E. Parker

D. W. Tower, Inventor.

by C. A. Snow & Co.

Attorneys

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

No. 754,721. Patented March 15, 1904.

UNITED STATES PATENT OFFICE.

DANIEL W. TOWER, OF GRAND RAPIDS, MICHIGAN.

LATCH.

SPECIFICATION forming part of Letters Patent No. 754,721, dated March 15, 1904.

Application filed April 22, 1903. Serial No. 153,838. (No model.)

To all whom it may concern:

Be it known that I, DANIEL W. TOWER, a citizen of the United States, residing at Grand Rapids, in the county of Kent and State of Michigan, have invented a new and useful Adjustable Door-Catch, of which the following is a specification.

This invention relates to certain improvements in door-catches, and has for its principal object to provide a catch of simple construction which may be readily adjustable to doors of different thicknesses.

The catch forming the subject of the present invention is of the push-knob type, in which the catch member is normally held in engagement with a keeper or in keeper-engaging position by means of a spring and which is positively moved to disengaging position by pressure exerted on the thumb-knob.

One of the further objects of the invention is to provide a catch in which all of the parts are made of sheet metal, which may be readily formed by suitable dies and assembled and placed in position at but small cost.

A further object of the invention is to provide an improved form of keeper or striker which may be readily adjusted to proper position and then secured by a single screw or similar securing device.

With these and other objects in view the invention consists in the novel construction and arrangement of parts hereinafter described, illustrated in the accompanying drawings, and particularly pointed out in the appended claims, it being understood that various changes in the form, proportion, and minor details of construction may be made without departing from the spirit or sacrificing any of the advantages of the invention.

In the drawings, Figure 1 is a sectional plan view of an adjustable door-catch constructed in accordance with the invention. Fig. 2 is a longitudinal sectional elevation of the same on the line 2 2 of Fig. 1. Fig. 3 is a face view of the inner side of the cap-piece of the catch. Fig. 4 is a detail perspective view of the keeper or striker. Fig. 5 is a sectional view illustrating a catch of similar construction in which a vertical handle is employed in place of the knob shown in Fig 1.

Similar numerals of reference are employed to indicate the corresponding parts throughout the several figures of the drawings.

The device forming the subject of the present invention is intended particularly for use in connection with furniture—such as cabinet, sideboard, bookcase, and wardrobe doors—although it is equally applicable for use in connection with doors or drawers of any character.

In the drawings, 1 represents the door, in which is a suitable opening for the reception of the cylindrical body 2 of the catch. The body portion is formed of stamped or drawn sheet metal provided at one end with an annular flange 3, adapted to be engaged by an inturned flange formed at the periphery of the dome-shaped cap-piece 4, also formed of sheet metal, the two being swaged together during the assemblement of the parts, as hereinafter described. The outer end of the body portion has an inturned flange 5 for limiting the movement in one direction of a loosely-fitting inner shell 6 of tubular form, the shell being provided with a longitudinal groove 7 for the reception of a depressed or inset portion 8 of the main body of the catch for the purpose of preventing independent movement of either member while permitting free longitudinal play of the shell. The outer end of the shell 6 is turned inward, forming a short tubular section 9, having an internal thread for the reception of a threaded stem 10, the threaded connection between the two serving to permit the adjustment of the catch to doors of various thicknesses within reasonable limits. The outer end of the stem 10 is non-circular in form, terminating in a preferable hexagonal head 11, adapted to fit in a correspondingly-shaped recess in a knob 12, the inner end of the shank of said knob being rigidly secured to a front plate or escutcheon 13 and the latter having an annular rib or flange fitting within the opening formed in the door. It is intended during the fitting of the catch to the door that the stem 10 shall first be turned until it projects a sufficient distance from the face of the door, after which the knob 12 is fitted over the hexagonal head 11 and is secured in place by the front plate or escutcheon 13.

To the inner face of the cap 4 is secured a yoke 15, preferably formed of stamped sheet metal and secured by rivets, screws, or similar fastening devices to the cap-piece. The yoke forms a guide for the reception of the cap end of the catch 16, the latter passing through a diametric slot in the cap-piece and its lower end being pivotally connected to the yoke by a transeverse pin 17. The lower portion of the catch is provided with opposing shoulders 18 and 19, which project beyond the opposite edges of the yoke, the shoulder 19 being engaged by the sliding shell 6 during unlocking movement, while the shoulder 18 is normally engaged by one end of the helical spring 20, which serves to maintain the catch in locking position. In the yoke there is formed a transversely-disposed slot 21 for the reception of one side of the spring 20, the bottom of the slot terminating short of the shoulder 19, in order that the spring shall bear against the shoulder 18 only of the catch. The outer end of the spring bears against the outer portion of the shell 6.

In operation, the parts being in the position shown in Fig. 1, the depression of the head 11 will force the shell 6 inwardly until the shoulder 19 is engaged and the catch swung free of its keeper, this movement taking place against the stress of the spring 20. The locking movement of the catch is accomplished by the expansion of the spring, the latter bearing against the shoulder 18 and forcing the head of the catch to engaging or locking position.

In connection with the catch there is employed a keeper or striker 25, formed of a single plate of sheet metal comprising the main body 26 and an annular flange 27 for engagement with the catch. At that end of the plate opposite the flange 27 is a prong 28, formed integral with the body of the keeper or striker and pointed, so that it may be driven into the woodwork in order to assist in maintaining the keeper in proper position. The keeper is further provided with a longitudinally-disposed slot 30, through which passes a securing-screw 31, the slot permitting the necessary range of adjustment of the keeper with respect to the catch, and after the screw or other screwing device has been tightened the prong 28 may be driven home and the keeper held from further movement.

In Fig. 5 is illustrated a slight modification of the invention, wherein a particular head 12′ is employed in place of the knob 12, (shown in Fig. 1,) and with the exception that the stem is in this case somewhat shorter the structure remains the same as that previously described.

Having thus described the invention, what is claimed is—

1. In combination, a casing, a yoke carried by the casing, a dome-shaped cap-piece secured to the casing and provided with a diametrical slot, a catch extending through the slot and pivotally connected to the yoke, and a spring bearing against the catch to maintain the same in locked position.

2. In combination, a pivotally-mounted catch having a pair of diametrically-opposed shoulders, a spring bearing against one of the shoulders and serving to normally maintain the catch in locking position and a push-knob mechanism having operative connection with the opposite shoulder for moving the catch to unlocking position against the stress of the spring.

3. In combination, a pivotally-mounted catch having a pair of oppositely-directed shoulders, a spring bearing against one of such shoulders and serving to maintain the catch in locking position, a longitudinally-movable member adapted to engage the opposite shoulder for movement of the catch to unlocking position and a push-knob adjustably connected to said member.

4. In combination, a pivotally-mounted catch, having a pair of oppositely-directed shoulders, a spring bearing against one of the shoulders and serving to maintain the catch in locking position, a slidable shell having a tubular portion provided with an internal thread, and a push-knob having a threaded stem adjustable in the threaded tubular portion.

5. In combination, a pivotally-mounted catch, having a pair of oppositely-directed shoulders, a yoke for the support of the catch, said yoke having a spring-receiving slot, a helical spring bearing against one of the shoulders and having a portion entering the slot to thereby prevent contact with the opposite shoulder and a push-knob having operative connection with said opposite shoulder.

6. In combination, a pivotally-mounted catch having a pair of oppositely-directed shoulders, a spring bearing against one of the shoulders, means for preventing contact of the spring with the opposite shoulder, and a push-knob having operative contact with said opposite shoulder.

7. In combination, a pivoted catch, a spring bearing directly on one side of the pivot-pin of the catch and normally maintaining the latter in locked position, a longitudinally-movable member for positively engaging the opposite side of the catch and moving the same to unlocking position, means for limiting the movement of said member in both directions, and a push-knob engaging said member and adjustable with respect thereto.

8. In combination, a pivotally-mounted catch, a spring for normally maintaining the catch in locked position, a longitudinally-movable member for moving the catch to unlocking position, and forming also a casing and a bearing for the spring, means for preventing rotative movement of said member, a head or knob having a non-circular push-knob-guide

opening, and a push-knob extending through said opening and adjustably connecting the longitudinally-movable member.

9. In a device of the class specified, the combination with a cylindrical body portion having a depression or inset and provided at one end with an annular flange, a dome-shaped cap-piece secured at the flange and provided with a diametrical slot, a catch extending through the slot, a yoke carried by the cap-piece and to which said catch is pivotally connected, said yoke being provided with a spring-receiving slot, a longitudinally-movable shell disposed within the body portion and slotted for the reception of the depressed or inset of said body portion, said shell bearing at one end against a portion of the catch and being provided at its opposite end with a threaded tubular neck, a push-knob having a threaded stem adapted to the threaded neck, a spring bearing against the catch to maintain the same in locked position and having a portion entering the slot of the yoke, a knob or head having an opening for the passage of the push-knob, and a face-plate or escutcheon for securing the knob in position.

10. The combination with a catch, of a keeper comprising a body portion, having an opening for the passage of a securing device, and provided with an integral prong for engagement with the surface to which the keeper is to be attached, said prong being initially bent outward so that its pointed entrance end shall be approximately in the general plane of the base of the catch.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

DANIEL W. TOWER.

Witnesses:

MARGARETE JOHNS,

E. L. KNAPP.