G. A. KUHN.

SPRING DOOR CATCH.

APPLICATION FILED JUNE 13, 1919.

1,330,945.

Patented Feb. 17, 1920.

FIG. 1.

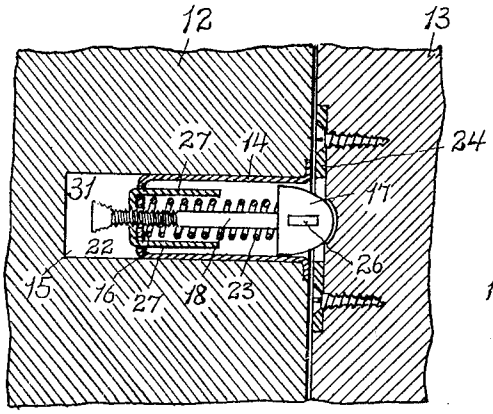


FIG. 2.

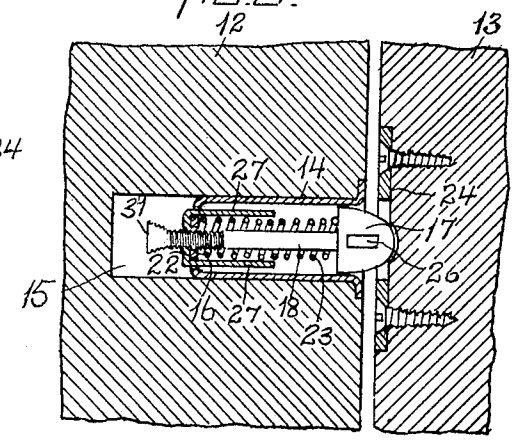


FIG. 5.

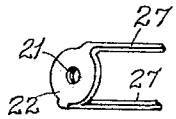


FIG. 3.

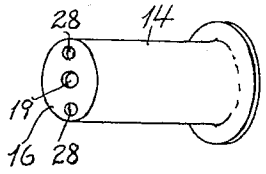


FIG. 4.

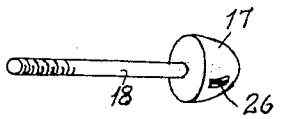


FIG. 6.

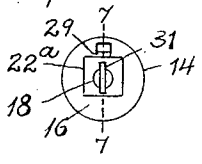


FIG. 7.

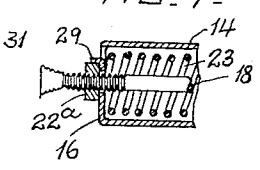


FIG. 8.

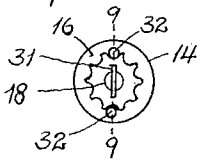
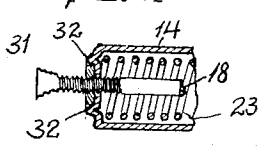


FIG. 9.



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GUSTAVE A. KUHN, OF CAMBRIDGE, MASSACHUSETTS.

SPRING DOOR-CATCH.

1,330,945. Specification of Letters Patent. Patented Feb. 17, 1920.

Application filed June 13, 1919. Serial No. 304,072.

To all whom it may concern:

Be it known that I, GUSTAVE A. KUHN, a citizen of the United States, residing at Cambridge, in the county of Middlesex and State of Massachusetts, have invented new and useful Improvements in Spring Door-Catches, of which the following is a specification.

This invention relates to a catch attached to a door casing and adapted to yieldingly secure the door in its closed position, the catch including a round-nosed bolt projected from the casing by a spring, to an extent determined by a stop, and adapted to be pressed backward from its projected position by a striker plate on the door, when the latter is nearly closed, and to spring into engagement with a slot in said plate when the door is fully closed. Owing to the fact that doors are liable to shrink and swell, it is important that the stop which limits the projection of the bolt be adjustable, so that the bolt may be projected to the extent required by the width of the crevice between the casing and the closed door.

My invention has for its chief object to improve the construction of a door catch of the character above indicated, with respect to the adjustable means for limiting the projection of the bolt.

The invention also has for its object to provide a catch of simple and durable construction, the parts of which are adapted to be quickly and economically assembled, and are not liable to be accidentally separated.

The invention is embodied in the improvements which I will now proceed to describe and claim.

Of the accompanying drawings forming a part of this specification,—

Figure 1 is a side view, partly in section, of a door catch embodying the invention, a portion of a door casing and door being shown in section.

Fig. 2 is a view similar to Fig. 1, showing a wider crevice between the casing and the door.

Figs. 3, 4 and 5 are perspective views, respectively, of the shell and the bolt, and the stop nut shown by Figs. 1 and 2.

Fig. 6 is an end view of the catch, showing a modification.

Fig. 7 is a section on line 7—7 of Fig. 6.

Figs. 8 and 9 are views similar to Figs. 6 and 7, showing another modification, Fig. 9 being a section on line 9—9 of Fig. 8.

The same reference characters indicate the same parts in all of the figures.

In the drawings, 12 represents a portion of a door casing, and 13 a portion of a door. 14 represents a sheet metal shell inserted in a socket 15, formed for its reception in the casing. The outer end of the shell is open, and is flush with the edge face of the casing. The inner end of the shell is closed by a head 16. 17 represents a round-nosed bolt which is slidable in the shell, and has a shank 18 passing loosely through a central orifice 19 in the shell head. A portion of the shank is screw-threaded, and is engaged with a tapped orifice 21 in a plate or nut 22, located outside the shell and in position to abut against the shell head 16, and act as a stop, limiting outward movement of the bolt. A spring 23 is interposed between the bolt and the shell head and projects the bolt from the open end of the shell. The projection of the bolt from the face of the casing must be only sufficient to permit the usual striker plate 24 on the swinging edge of the door to strike the rounded nose of the bolt and force the latter back just before the door reaches its closed position, so that when the door is fully closed, the bolt is projected by its spring into the slot of the striker plate. When the door fits the casing somewhat closely, as shown by Fig. 1, the projection of the bolt should be less than when the door is separated by shrinkage from the casing, as shown by Fig. 2.

The threaded bolt shank 18 and the nut 22 engaged therewith, and held by the spring 23 against the shell head, constitute a means for conveniently adjusting the projection of the bolt, the shank being rotatable by the bolt and the projecting portion of the latter being adapted to be grasped and rotated either by a thumb and finger, or by a suitable tool which may be formed to engage slots or recesses 26 in the perimeter of the bolt.

To prevent the nut from turning with the bolt shank, I provide means for engaging or interlocking the nut with the shell, said means being preferably embodied in a finger 27 formed on the nut, and an orifice 28 in the shell head, formed to receive the finger 27. Preferably, two fingers and orifices are employed as shown. An equivalent

means is shown by Figs. 6 and 7, in which 22^a represents the nut, and 29 a tongue struck up from the shell head and bearing on one side of the nut. The shank and nut enable the bolt to be conveniently engaged with the shell without liability of accidental separation of the bolt from the shell. The bolt 17 and shank 18 may be conveniently formed in one piece by a screw machine. The end of the shank may be provided, after the shank has been screwed into the nut, with an enlargement 31, preventing the unscrewing of the shank from the nut, and thus rendering impossible the accidental separation of the bolt from the shell. This enlargement is preferably formed by exerting pressure on opposite sides of the end portion of the shank, and thereby forming a flat-sided end portion, the width of which is greater than the diameter of the shank.

A nut 22^b having a serrated periphery may be employed, as shown by Figs. 8 and 9, said periphery being engaged by bosses 32 on the shell head.

I claim:

1. A door catch comprising a shell insertible in a socket in a door casing, the outer end of the shell being open, and its inner end closed by a head having a central orifice, a round-nosed bolt movable in the shell and having a shank passing loosely through said orifice, a portion of the shank being screw-threaded, a bolt-projecting spring interposed between the bolt and the shell head, and a stop nut engaged with the threaded portion of the shank, and arranged to abut against the shell head and limit the projection of the bolt, the bolt and its shank being rotatable in the shell, means being provided for preventing rotation of the nut, so that the bolt may be adjusted longitudinally by the rotation of the shank in the non-rotating nut.

2. A door catch comprising a shell insertible in a socket in a door casing, the outer end of the shell being open, and its inner end closed by a head having a central orifice, a round-nosed bolt movable in the shell and having a shank passing loosely through said orifice, a portion of the shank being screw-threaded, a bolt-projecting spring interposed between the bolt and the shell head, and a stop nut engaged with the threaded portion of the shank and arranged to abut against the shell head and limit the projection of the bolt, the nut being provided with a finger, and the shell head with an orifice through which said finger passes, whereby rotation of the nut is prevented.

3. A door catch comprising a shell insertible in a socket in a door casing, the outer end of the shell being open, and its inner end closed by a head having a central orifice, a round-nosed bolt movable in the shell, and having a shank passing loosely through said orifice, a portion of the shank being screw-threaded, a bolt-projecting spring interposed between the bolt and the shell head, and a stop nut engaged with the threaded portion of the shank, and arranged to abut against the shell head and limit the projection of the bolt, the bolt and its shank being rotatable in the shell, means being provided for preventing rotation of the nut, so that the bolt may be adjusted longitudinally by the rotation of the shank in the non-rotating nut, the shank being provided with an enlargement at the outer end of its threaded portion, constituting a stop spaced from the inner end of said threaded portion to limit the outward longitudinal adjustment of the bolt and prevent disengagement of the shank from the nut.

In testimony whereof I have affixed my signature.

GUSTAVE A. KUHN.