

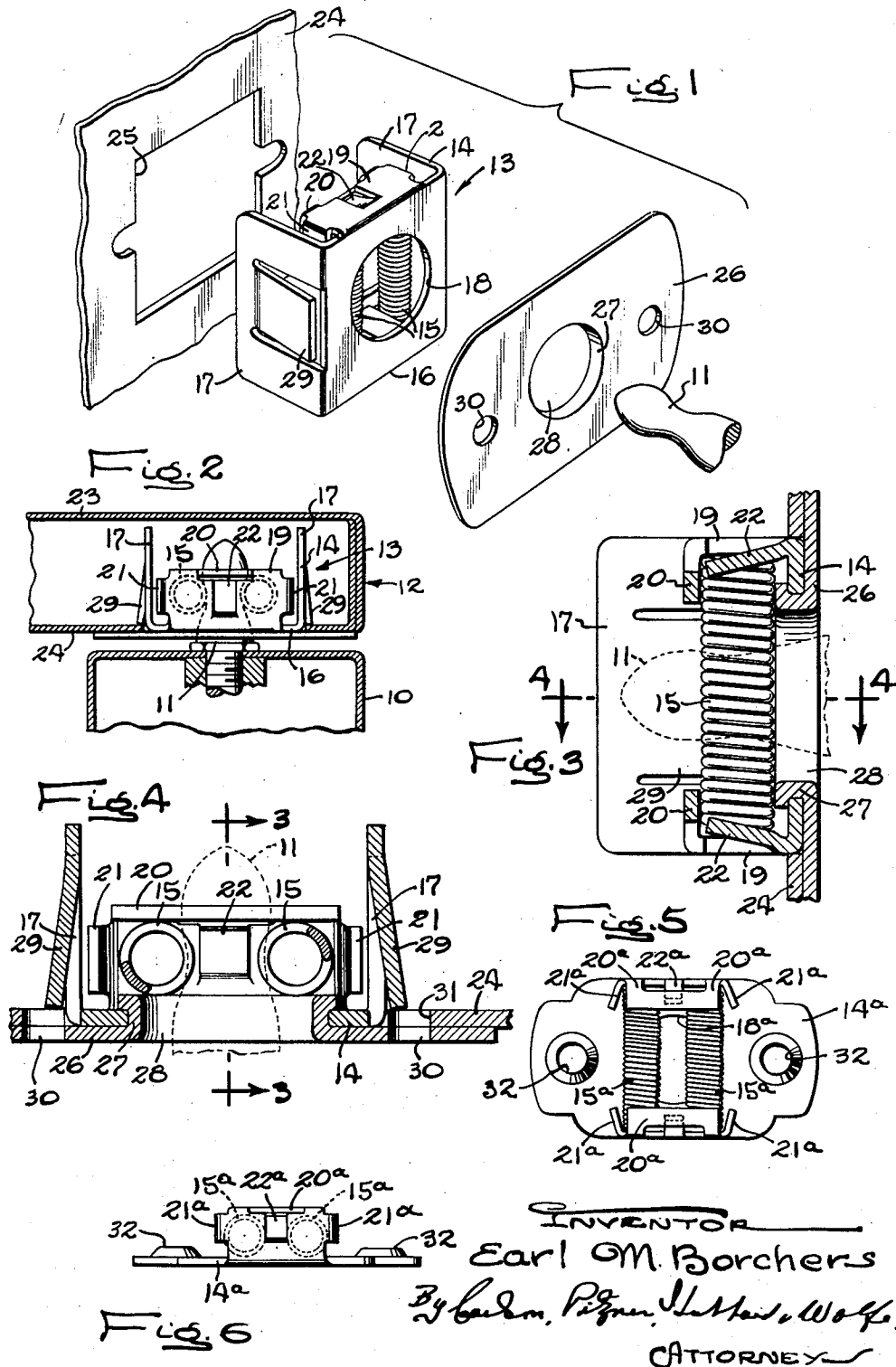
July 3, 1951

E. M. BORCHERS

2,559,145

CATCH

Filed Aug. 16, 1947



INVENTOR
 Earl M. Borchers
 By *Edwin P. Pinner, Harry W. Wolf*
 ATTORNEYS

UNITED STATES PATENT OFFICE

2,559,145

CATCH

Earl M. Borchers, Rockford, Ill., assignor to
American Cabinet Hardware Corporation,
Rockford, Ill., a corporation of Illinois

Application August 16, 1947, Serial No. 768,948

6 Claims. (Cl. 292-14)

1

The present invention pertains to a catch of the type used in kitchen cabinets and the like in cooperation with a strike for yieldably holding cabinet doors in closed position.

The object of the invention is to provide a catch which is effectual in operation, of durable construction and capable of being manufactured economically.

The object of the invention thus generally set forth, together with other and ancillary advantages, are attained by the construction and arrangement shown by way of illustration in the accompanying drawings, in which:

Figure 1 is an exploded perspective view of a catch constructed in accordance with the present invention.

Fig. 2 is a plan view of the catch in installed condition.

Fig. 3 is a sectional side elevation on an enlarged scale taken substantially along the line 3-3 in Fig. 4.

Fig. 4 is a section taken substantially along the line 4-4 in Fig. 3.

Fig. 5 is a rear elevation of a modified form of catch also constructed in accordance with the present invention.

Fig. 6 is a plan view of the form of the catch illustrated in Fig. 5.

While the invention is susceptible of various modifications and alternative constructions, I have shown in the drawings and will herein describe in detail the preferred embodiment, but it is to be understood that I do not thereby intend to limit the invention to the specific form disclosed, but intend to cover all modifications and alternative constructions falling within the spirit and scope of the invention as expressed in the appended claims.

Generally stated my invention resides in the provision of a catch having improved means for gripping the strike to the end that an effectual friction grip is achieved with minimum wear on the parts, while maintaining a low manufacturing cost. More particularly, I utilize to advantage a pair of helically coiled springs as gripping elements, and I mount the springs in a supporting frame so as to be free to flex and turn upon engagement with the strike thereby obtaining a high degree of smoothness in operation with effectual distribution of wear.

In the drawings there are shown for purposes of illustration, fragmentary parts of a cabinet comprising a wall 10, on which is secured a strike 11 of well known form, and a door 12, on which my improved catch, generally designated 13, is mounted.

The improved catch comprises a frame 14 (Fig. 1) and a pair of helically coiled springs 15 supported in the frame in spaced parallel relation so as to form a pair of resilient gripping elements

2

for coaction with the strike 11. As shown in Figs. 1 to 4, the frame 14 is formed from a blank of sheet material bent into generally U-shape to provide an intermediate or yoke portion 16 and rearwardly extending legs 17. An aperture 18 is provided in the yoke 16 to permit passage of the strike 11 for engagement by the springs 15. The yoke 16 is fashioned to provide supports for the springs 15 to hold them in spaced parallel relation partially overlying the aperture 18. To this end, the upper and lower edge portions of the yoke 16 are turned rearwardly between the legs 17 to form flanges 19 which are fashioned to provide two pairs of opposed sockets for the reception of the ends of the two springs 15. Thus, the free edge of each flange is bent inwardly substantially at right angles to form lugs 20, and the side edges are bent inwardly to form tabs 21. Midway of its length each flange has a portion struck inwardly to provide a finger 22 defining the inner sides of both sockets and serving to retain the springs in spaced relation.

So that wear incident to the insertion and withdrawal of the strike will be evenly distributed about the springs 15, the springs are loosely held in their sockets. Thus as the strike is inserted or withdrawn the springs 15 will act not unlike roller bearings and will be rotated about their longitudinal axes in the direction of movement of the strike. Further, as the enlarged head portion of the strike 11 passes between the springs 15 they will be bowed outwardly. So that this bowing will not be confined to the intermediate portions of the springs, the tabs 21 are set at an angle somewhat greater than 90 degrees to the longitudinal axis of the springs (Figs. 2 and 4) thus permitting flexing thereof throughout their entire lengths. Both of these features contribute to the smoothness of operation of the catch. It might also be noted that the strain on the springs incident to this flexing is distributed throughout their lengths thus further prolonging spring life.

This form of the catch is especially designed for mounting in double-panel doors, the inner panel of which will, in most instances, constitute a mounting plate. The door 12 is of such form (Fig. 2) and has an outer panel 23 and an inner panel 24 on which my improved catch 13 is mounted. The inner panel 24 has an aperture 25 therein, preferably rectangular, dimensioned to receive the catch frame 14. To provide abutment means for limiting the movement of the frame 14 through the aperture 25 the catch is provided with a face plate 26. The face plate is rigidly secured to the frame 14 in any suitable manner, and in the present instance, is provided with an integrally formed, turned flange 27, peripherally disposed about a hole 28 centrally located in the face plate 26, for coaction with

3

the frame 14. In assembling the catch, the hole 28 is brought into register with the aperture 18 in the yoke portion 16 of the frame 14 and the flange 27 is inserted therein. The flange then has its outer edge rolled around the edge of the aperture 18 into rigid clamping engagement with the rear side of the yoke portion 16 (Figs. 3 and 4).

To retain the catch on the panel 24 the legs 17 are cut away to form forwardly projecting tongues 29. In their initial condition these tongues lie in the planes of the legs 17. When the catch is pushed into its installed position, wherein the face plate 26 abuts the front surface of the panel 24, the tongues are then bent outwardly behind the panel 24 so that it will be held between the face plate and the ends of the tongues. Access to the tongues 29, so that they can be bent, is provided by holes 30 in the face plate 26 which are disposed to register with notches 31 formed in the edges of the panel hole 25. Through these can be passed any suitable tool to engage and bend the tongues into desired positions. Alternatively, the tongues 29 may constitute spring fingers normally occupying the offset relation shown and capable of yielding when inserting the catch through the aperture 25, and springing outwardly into holding positions. In such event, the catch may be removed by disengaging the tongues from the panel through the use of a suitable implement inserted through the holes 30 and notches 31. Thus, in this form of catch there is no need for any other fastening elements such as screws or the like.

The modified form of catch illustrated in Figs. 5 and 6, includes a frame 14a and helically coiled springs 15a loosely supported in sockets defined by the frame so that they will flex and turn freely upon the insertion and withdrawal of a strike. The frame 14a is again fashioned from a blank of sheet material, the intermediate edge portions of which are turned rearwardly and fashioned into flanges 19a, lugs 20a, tabs 21a and spacer fingers 22a defining the spring sockets. Centrally of the frame 14a is an aperture 18a through which the strike 11 is inserted. The springs 15a are again disposed in spaced parallel relation, partially overlying the hole 18a to engage and retain the strike 11.

This form of catch, however, is adapted to be held in assembled relation on a cabinet by means of screws, or the like. Thus adjacent the ends of the frame there are provided countersunk holes 32 for the reception of screws (not shown) with which the catch is secured on a cabinet. Thus in this form of the catch no face plate, as such, is required, the frame itself performing this function.

From the foregoing therefore, it can be seen that a catch constructed in accordance with the present invention is of inexpensive construction, is effectual in operation and requires but little effort and skill for its installation. The form and arrangements of the elements of such a catch results in a high degree of smoothness of operation and in an even distribution of wear and strain thereon, thus prolonging its life.

I claim as my invention:

1. A catch of the character described comprising, in combination, a frame and a pair of helically wound springs constituting strike-engag-

4

ing elements, said frame defining sockets for the reception of the ends of said springs to hold the springs in spaced parallel relation.

2. A catch of the character described comprising, in combination, a frame including an intermediate portion, and a pair of helically wound springs, said intermediate portion having flanges on its outer edges and means on said flanges engaging opposite ends of said springs to hold the springs in spaced parallel relation.

3. A catch of the character described comprising, in combination, a frame including an intermediate portion having an aperture therein, and a pair of helically wound springs, said intermediate portion having flanges on its outer edges fashioned to form central spacer fingers and lugs and tabs coacting with said fingers to define sockets for the reception of the ends of said springs to hold the springs in spaced parallel relation adjacent the intermediate portion and partially overlying said aperture.

4. A catch of the character described comprising, in combination, a frame including an intermediate portion having an aperture therein, and a pair of helically wound springs, said intermediate portion having flanges on its outer edges fashioned to form central spacer fingers and lugs and tabs coacting with said fingers to define sockets for the reception of the ends of said springs to hold the springs in spaced parallel relation adjacent the intermediate portion and partially overlying said aperture, said tabs being set at an angle greater than ninety degrees to the longitudinal axes of said springs so that the springs will be free to flex throughout their lengths.

5. A catch of the character described comprising, in combination, a frame having an aperture therein, and a pair of helically wound springs constituting strike-engaging elements, said frame defining sockets for the reception of the ends of said springs to loosely hold the springs in spaced parallel relation partially overlying said aperture to permit the springs to flex and turn freely upon the insertion and withdrawal of a strike whereby strain and wear on the springs incident thereto is evenly distributed.

6. A catch of the character described comprising, in combination, a pair of adjacently disposed helically coiled springs, a member supporting said springs only at the opposite ends thereof and operative to hold the spring ends against lateral movement so as to normally maintain the springs in parallel relation and permitting deflection of the central portions of the springs simultaneously upon engagement of the springs by a strike.

EARL M. BORCHERS.

REFERENCES CITED

The following references are of record in the file of this patent:

UNITED STATES PATENTS

Number	Name	Date
262,557	Barnard	Aug. 15, 1882
372,034	Lusk	Oct. 25, 1887
2,317,277	Knuth	Apr. 20, 1943

FOREIGN PATENTS

Number	Country	Date
139,138	Switzerland	Apr. 15, 1930

Certificate of Correction

Patent No. 2,559,145

July 3, 1951

EARL M. BORCHERS

It is hereby certified that the name of the assignee in the above numbered patent was erroneously described and specified as "American Cabinet Hardware Corporation," whereas said name should have been described and specified as *American Cabinet Hardware Corporation, Rockford, Illinois*; and that the said Letters Patent should be read as corrected above, so that the same may conform to the record of the case in the Patent Office.

Signed and sealed this 11th day of September, A. D. 1951.

[SEAL]

THOMAS F. MURPHY,
Assistant Commissioner of Patents.