June 21, 1955 J. D. CARROLL 2,711,335

DOOR CATCH

Filed July 22, 1949

FIG. 1

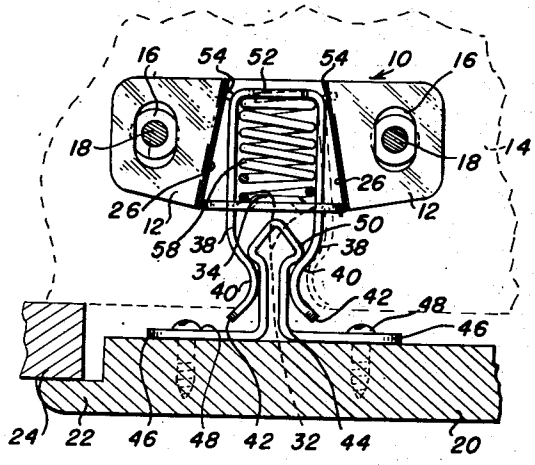


FIG. 2

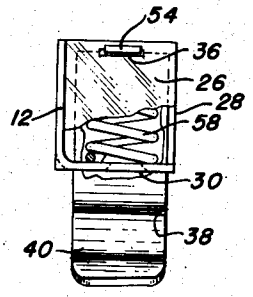


FIG. 3

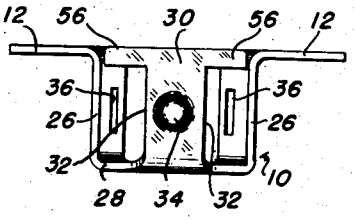


FIG. 4

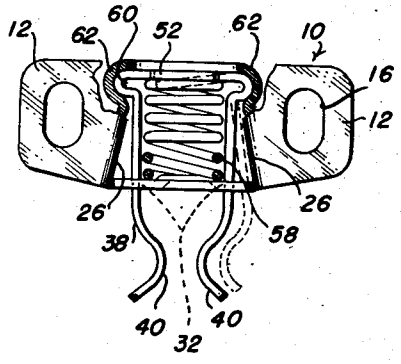


FIG. 5

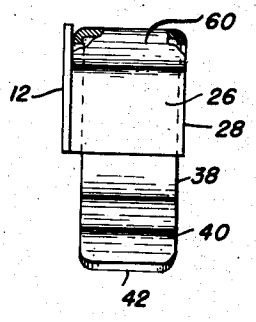
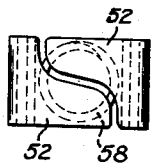


FIG. 6



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DOOR CATCH

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4 Claims. (Cl. 292—18)

This invention relates to improvements in a door catch and, more particularly, to the type of door catch which is readily adaptable for use with cabinets for releasably retaining the doors thereof in closed position.

It is the principal object of this invention to provide a door catch comprising a pair of separate fingers which are mounted so as to resemble a U-shaped detent retaining member, but said fingers are independently supported adjacent their inner ends by a bracket and a spring exerts a thrust against the inner ends of the fingers which are inturned at substantially right angles to the main portions of the fingers, whereby the outer jaw portions or strike engaging ends of the fingers are biased toward each other.

It is another object of the invention to so arrange the bracket, fingers and spring of the catch that the resulting assembly is very compact, durable, and fabrication thereof is readily and inexpensively accomplished, whereby the cost of manufacturing is low.

Details of these objects and of the invention, as well as other objects thereof, are set forth in the following specification and illustrated in the accompanying drawing forming a part thereof.

In the drawing—

Figure 1 is a plan view of one embodiment of a catch and detent embodying the principles of the invention, the same being shown attached to fragmentary portions of an exemplary cabinet and door.

Fig. 2 is a side view, partly in section, of the catch illustrated in Fig. 1 but not including a strike.

Fig. 3 is a front elevation of the bracket per se of the catch shown in Fig. 1.

Fig. 4 is another embodiment of catch similar to that shown in Fig. 1 but including a different pivot means for the strike retaining fingers of the catch. In this figure, part of the bracket is broken away to facilitate the illustration of details of the structure.

Fig. 5 is a side view, partly in section, of the catch illustrated in Fig. 4.

Fig. 6 is a fragmentary view showing certain details of the fingers of the catch.

Referring to the drawing, a bracket **10** is formed from suitable sheet material, such as sheet metal, so as to have a pair of opposed ears **12** which extend in opposite directions away from each other in a common plane, said ears being arranged to be attached to a surface of a cabinet such as a shelf **14**, which is fragmentarily shown in Fig. 1. Said ears are each provided with an elongated slot **16** through which attaching screws **18** are inserted, the slots **16** permitting adjustment of the bracket **10** toward or from the door **20** of the cabinet. In Fig. 1, the door **20** has been illustrated as a type having a rabbeted edge **22** which abuts against a side strip **24** of the cabinet to limit the inward movement of the door **20**. Such cabinet is merely illustrative and not restrictive since the present invention may be readily used on other types of cabinets and similar structures.

The bracket is also provided with opposed side walls **26** which are integral with the ears **12** and are connected at one edge by a horizontal portion **28**. The sides **26** are vertical to the ears **12** and the portion **28**, and said sides are each disposed at a slight angle to the transverse axis of the bracket **10**, as is clearly evident from Fig. 1. The bracket is also provided with a front wall **30** which is somewhat T-shaped, as shown in Fig. 3, so as to provide a pair of spaced parallel edges **32** for purposes to be described. Substantially centrally of the front wall **30** is an inward extending protuberance **34** which is also for purposes to be described. The sides **26** are also provided adjacent their rear edges with a pair of opposed parallel openings or slots **36**.

A pair of similar, somewhat elongated fingers **38** are supported by said bracket **10** so as to be normally in substantially parallel relationship, as shown in Fig. 1. While said fingers are similar, they are mounted in complementary opposed relationship as shown in said figure. The forward ends of said fingers are provided with inward extending, curved, jaw-forming portions **40** which terminate in outwardly flared ends **42**. Said ends are arranged to receive therebetween a strike **44** formed, for example, from strip metal and provided with oppositely extending ears **46** which are apertured to receive screws **48** by which the strike is secured to the cabinet door **20**. The strike **44** terminates in a pointed head **50** having bulged sides, and said bulged sides of the head and stem of the strike supporting the head are engaged by portions of the opposed curved jaw portions **40** of the fingers to releasably retain the strike between the jaw ends of the fingers so as to hold the door **20** in closed position.

The other or inner ends **52** of the fingers are bent inward substantially at right angles so as to be disposed in a substantially common plane when the fingers are in strike engaging position, as shown in Fig. 1. In the embodiment of the invention shown in Fig. 1, the bent portions of the inner ends of said fingers **38** are also provided with outwardly extending tongues **54** which are opposed to the inner ends **52** of said fingers, the tongues **54** being movably received respectively in the slots **36** of the sides **26** of the bracket **10** so as to provide means for pivotally supporting the inner ends of the fingers **38** relative to the bracket **10**.

After the fingers **38** are assembled in the bracket between the sides **26** and the tongues **54** are disposed within the slots **36**, accidental removal of the tongues **54** from said slots is prevented due to the juxtaposition of the end surfaces of the ends **52** of the fingers, as can be readily seen from Fig. 1. The oppositely extending wings **56** of the front wall **30** cooperate with the front edges of horizontal portion **28** of the bracket to guide the jaw portions of the fingers during their movement toward and away from each other while engaging the strike **44**.

The forward ends of the fingers **38** are biased toward each other by resilient means such as a helical spring **58** disposed between the fingers so that the ends of the spring abut respectively the inner surface of front wall **30** of the bracket and the inwardly bent inner ends **52** of the fingers which are formed so as to extend past each other as shown in Fig. 6. The ends **52** are longer than the diameter of spring **58** and the side of the spring farthest from the fulcrum of the fingers exerts pressure on the tips of the ends **52**. Said spring is positioned at its forward end by protuberance **34** which is disposed centrally of the forward end coil of said spring. It will thus be seen that the spring **58** exerts a thrust in a direction parallel to the fingers **38** and the movement of the forward ends of the fingers toward each other is limited by intermediate portions of said fingers respectively engaging the side edges **32** of the front wall **30**. During ordinary use, there is no need to provide means for limiting movement of the outer ends of the fingers away from each other

since the sides of the pointed head 50 of the strike are normally spaced apart such a short distance that separative movement of the outer ends of the fingers 38 is usually not great. However, the sides 26 of the bracket will prevent excessive separative movement of the outer ends of the fingers.

In Fig. 1, the right-hand finger 38 is shown in dotted line position to illustrate the position it assumes when the bulged side of the pointed head 50 engages the most inward extending part of the curved portion of jaw 40 of the right-hand finger 38. During actual operation, both fingers will be moved apart at their outer ends to positions represented by the single dotted line position shown in Fig. 1 relative to the right-hand finger, it being understood that the forward portion of the left-hand finger will be moved to the left a similar distance. When so separated at their forward ends, the spring 58 constantly biases said jaws 40 toward each other and will cause said jaws to firmly and frictionally engage parts of the sides of the stem portion of the strike 44 as well as portions of the bulged head 50. In order that such firm engagement will occur, the side edges 32 of the front wall 30 are preferably spaced apart a distance slightly less than the distance between the inner surfaces of the adjacent intermediate portions of fingers 38 when the jaws of the fingers engage the strike, as illustrated in Fig. 1.

The embodiment of the invention illustrated in Figs. 4 and 5 is similar in principle to that shown in Figs. 1 through 3. However, different means are provided therein for pivotally associating the inner ends of the fingers 38 with the sides 26 of the bracket 10. It will be seen from Fig. 4 that the fingers 38 are provided with inner ends 52 which are engaged by spring 58 but, in lieu of the tongues 54 in Fig. 1, the straight, substantially parallel portions of the fingers 38 are connected to the inner ends 52 by rounded, outwardly extending bearing portions 60, and the sides 26 of the bracket 10 are provided adjacent their rear edges with elongated semicircular bearing grooves or depressions 62. Said depressions thus afford means for supporting the inner ends of the fingers 38 for limited rotative movement relative to the sides 26 of the bracket 10. The bearing portions 60 of the fingers are retained in said bearing depressions 62 of the sides 26 of the bracket by the outer surfaces of at least the innermost convolutions of the spring 58 bearing against the inner surfaces of the fingers 38. Inward movement of the jaws 40 of the fingers 38, when not engaging the strike, will be limited by engagement of the inner surfaces of said fingers with the edges 32 of the front wall 30 of the bracket, as in the embodiment shown in Figs. 1 through 3 and described above relative thereto.

It will thus be seen that the present invention provides simple, effective, and compact means for mounting a pair of separate but cooperative fingers, the outer jaw ends of which are biased toward each other for frictionally receiving therebetween and engaging a strike for purposes of holding a door in latched or closed position. Since the fingers are separate from each other and independently mounted for pivotal movement relative to the bracket which supports them, there is no possibility of said fingers breaking, and the spring means used to bias the jaw ends of the fingers toward each other is mounted so as to exert thrust in its most efficient manner, that is, longitudinally of the axis of the helical spring. Used in this manner, the spring will have greatest possible durability with the least possibility of fracture and loss of inherent strength. Further, this manner of mounting the spring eliminates the need for any coupling means between the spring and the elements of the catch engaged thereby, other than a mere abutting engagement between the spring and said elements.

While the invention has been illustrated and described in its several preferred embodiments and has included certain details, it should be understood that the invention

is not to be limited to the precise details herein illustrated and described since the same may be carried out in other ways, falling within the scope of the invention as claimed.

I claim as my invention:

1. A catch comprising in combination, a bracket provided with opposed sides each having an opening therein, a pair of elongated fingers supported by said bracket in substantially parallel and spaced relation to each other and one end of each finger comprising one of a pair of opposed jaws arranged to receive and engage therebetween a strike, the other ends of said fingers being bent toward each other, a tongue extending from each finger adjacent the bent end thereof, said tongues being movably disposed respectively within said openings in said sides of said bracket to permit limited pivotal movement of said fingers relative thereto, and a spring positioned to abut said bent ends of said fingers and exert a thrust thereagainst in a direction substantially longitudinally of said fingers and thereby yieldably bias said jaws toward each other.

2. A catch comprising a bracket having spaced apart side walls, a pair of elongated fingers formed of flat strip metal pivotally supported between said walls in substantialy parallel and spaced relation to each other with one end of each finger comprising one of a pair of outwardly extending opposed jaws arranged to receive and engage therebetween a strike, the other ends of said fingers being bent toward each other at substantially right angles with respect to the general axis of the fingers, said other ends being laterally displaced and in the same transverse plane, a transverse wall on the bracket disposed between the fingers and having its opposite edges limiting inward pivoting movement thereof, and a compressed spiral spring bearing against the bent ends of the fingers and the transverse wall to position the fingers and bias the jaws toward each other.

3. A catch comprising in combination, a bracket having a transverse wall, a pair of elongated fingers supported by said bracket and extending past the opposite edges of the transverse wall in substantially parallel and spaced relation to each other and one end of each finger comprising one of a pair of opposed jaws arranged to receive and engage therebetween a strike, the other ends of said fingers being bent toward each other and displaced laterally with respect to each other so as to extend past each other without interference in the same transverse plane and said fingers also being pivotally associated relative to said bracket adjacent the bent portions of said fingers, and a coiled spring of smaller diameter than the length of the bent ends of said fingers positioned between said wall of said bracket and said bent ends so as to exert a thrust against the tips of said bent ends in a direction substantially longitudinally of said fingers and thereby yieldably bias said jaws toward each other.

4. A catch comprising in combination, a bracket provided with spaced apart side walls each having a semi-cylindrical bearing depression at one end, a pair of elongated fingers supported by said bracket in substantially parallel and spaced relation to each other and one end of each finger comprising one of a pair of opposed jaws arranged to receive and engage therebetween a strike, a transverse wall secured to said bracket between said fingers, the other ends of said fingers being bent toward each other and displaced laterally with respect to each other so as to extend past each other without interference in the same transverse plane, each of said fingers having a semi-cylindrical bearing portion adjacent the bent end thereof, said bearing portions being movably disposed respectively within the bearing depressions of said side walls of said bracket to permit limited pivotal movement of said fingers relative thereto, the distance between the side walls being greater adjacent the transverse wall to permit said pivotal movement, and a coiled spring of smaller diameter than the length of the bent

ends of said fingers positioned against said transverse wall to abut said bent ends of said fingers and exert a thrust thereagainst in a direction substantially longitudinally of said fingers and thereby yieldably bias said jaws toward each other.

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