Oct. 17, 1950 J. D. CARROLL 2,526,539

DOOR CATCH

Filed Feb. 8, 1949

Fig. 1

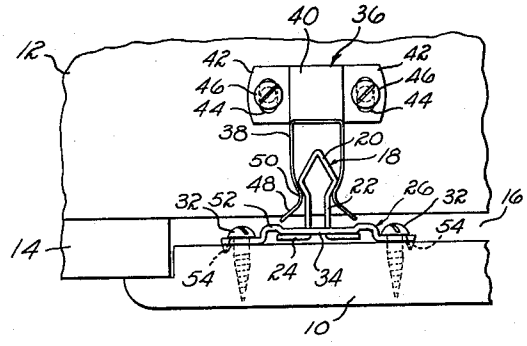


Fig. 2

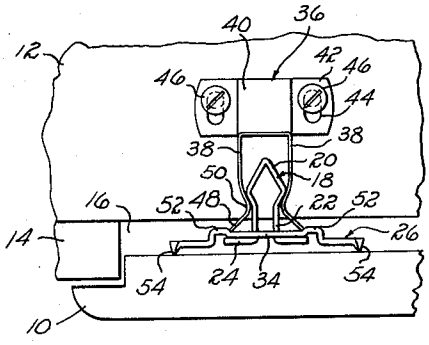


Fig. 3

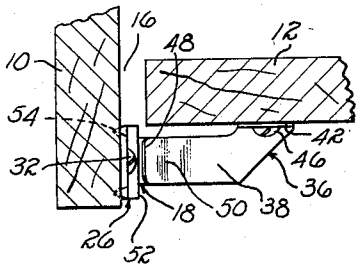


Fig. 4

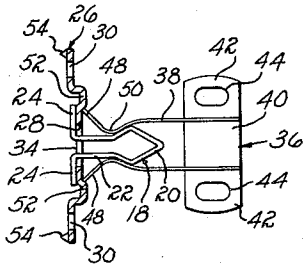
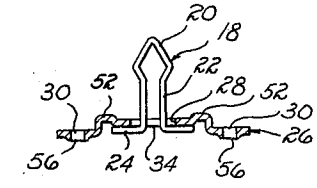


Fig. 5



Inventor

JOHN D. CARROLL

By

Lindsey, Prutzman & Just

Attorneys

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DOOR CATCH

John D. Carroll, Berlin, Conn., assignor to The Stanley Works, New Britain, Conn., a corporation of Connecticut

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2 Claims. (Cl. 292—17)

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This invention relates to improvements in door catches and, more particularly, friction spring type door catches.

Door catches of this nature now in use generally comprise a strike which is attachable, for example, to the inner surface of a cabinet door, and a substantially U-shaped spring catch which is attachable in such an example to a shelf, or the top or bottom, of said cabinet. If the door shrinks or expands, for example, the position of the strike relative to the catch is shifted and results in improper coengagement of the strike and catch. Further, without making very accurate and time consuming preliminary measurements, it is difficult to position the strike and catch for mounting so that they will be in correct alignment when secured in their operative positions.

The principal object of this invention is, therefore, to provide in a spring door catch of this nature means which will permit self alignment of the strike and catch even if shrinking or expansion of parts of a cabinet take place, thus increasing the life of the spring arms of the catch, and also provide marking means which will easily and accurately indicate the position of the strike on one cabinet part after the catch has been tentatively mounted on another cabinet part.

A corollary to this object is that such means are rugged and durable, and embodying them in a friction spring type catch is no more costly than manufacturing conventional type friction spring catches now in use.

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:

Fig. 1 shows a plan view looking from below a spring type door catch embodying the principles of the invention and mounted in operative latched position on a fragmentary portion of a cabinet.

Fig. 2 is a view similar to Fig. 1 but showing the parts of the door catch disposed in one position they occupy incident to being attached to a cabinet.

Fig. 3 is a side elevation of the door catch with the parts thereof disposed in the same relative positions illustrated in Fig. 1.

Fig. 4 is a view similar to Fig. 2 but showing the parts of the door catch detached from any supporting means, one part of said catch being shown in section to better illustrate details of the construction.

Fig. 5 is a vertical elevation, partly in section,

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of the strike of the present invention and its supporting means, said supporting means having another embodiment of marking means than that shown in Fig. 4.

In the drawings, and particularly Figures 1 and 2, there is illustrated one embodiment of cabinet installation to which a spring type door catch embodying the principles of the present invention is attachable. For purposes of condensing the figures, only fragmentary portions of a cabinet are shown. Part of a door **10** is shown in closed position relative to a shelf **12** and a portion of a front panel **14** against which one rabbetted edge of the door abuts. In such constructions, there is usually a space **16** between the inner surface of the door and the front edge of the shelf.

While the above described cabinet installation has been selected to illustrate one typical arrangement to which the door catch comprising the present invention may be attached, it is to be understood that the components of the catch may be attached to other cabinet arrangements for purposes of latching a door in closed position. For example, rather than part of the catch being secured to a shelf **12**, said part may be attached to either the top, bottom or side of a cabinet.

The spring type door catch embodying the present invention comprises a strike **18** which has a head portion **20**, a stem portion **22** which has a smaller transverse dimension than the head portion **20**, and a pair of oppositely extended ears **24**. Preferably the strike is formed from strip metal by bending the same into the configuration illustrated in the drawing.

A plate **26** is provided with preferably a rectangular aperture **28** through which the stem portion **22** of the strike projects. The width of the aperture **28** is preferably large enough to readily permit passing therethrough the head portion **20** of the strike.

The plate **26** is also provided with a plurality of holes **30** through which securing means such as screws **32** may be passed for attaching the plate to part of a cabinet such as the door **10**. Said holes **30** are disposed in the plate adjacent the opposite ends thereof, and said ends are disposed in a plane parallel to but offset from the plane within which the central portion **34** of the plate is disposed.

The ears **24** of the strike are disposed against the inner surface of the central portion **34** of the plate, the offset between said central portion and the outer ends of the plate providing a space which is wider than the thickness of the said ears, whereby, when the plate **26** is mounted

against one surface of a door such as shown in Fig. 1, the strike 18 may move relative to the plate 26 within the limits afforded by the periphery of the aperture 28 for purposes to be described.

The spring type door catch also comprises a catch 36 which is preferably formed from spring-like sheet metal from which a blank is stamped out and bent so as to form a pair of parallel flat spring arms 38 which are integral at one end by a connecting portion 40, whereby the catch 36 is substantially U-shaped in plan view. Bent outward in opposite directions from the arms 38 are a pair of ears 42 which are parallel to the edges of the arms 38 and are provided with slots 44 for purposes of receiving attaching means such as screws 46 and permitting adjustment of the catch relative to said screws for purposes to be described.

The free ends of the spring arms 38 are bent so as to provide outwardly flared tips 48 which provide camming surfaces that coact with the tapered outer end of the head portion 20 of the strike 18. As will be seen from the figures, said head portion 20 is somewhat diamond shaped in plan view and the spring arms 38 are provided adjacent the flared tips 48 with curved portions 50 which are spaced apart a shorter distance than the main portions of the arms 38 so as to provide a constriction with which the neck of the head portion 20 of the strike 18 coacts to frictionally hold the catch and strike together for purposes of latching the door closed against a cabinet when the catch components are secured thereto.

The aforementioned lateral movability of the strike 18 relative to the plate 26 is for purposes of permitting the strike 18 to be self-centering relative to the catch in the event the parts of the cabinet to which the components of the door catch are secured should shrink or expand. For purposes of readily and effectively disposing the stem portion 22 of the strike 18 intermediately of the aperture 28 when the strike and plate are being mounted on the door of a cabinet, for example, the present invention provides means for accomplishing such centering. Said means comprise a pair of spaced ribs 52 which are parallel to each other and extend transversely across the plate 26, said ribs being disposed between the apertured ends and the central portion 34. Said ribs 52 are co-engageable with the tips 48 of the catch 36 when the strike 18 is engaged by said catch and the strike and plate are disposed in the relative positions shown in Fig. 4.

When the components of the door catch are inter-engaged as shown in Figs. 2 and 4, the stem portion 22 of the strike is disposed intermediately of the side walls of the aperture 28 of the plate 26 and, while so inter-engaged, the catch 36 is secured to part of the cabinet such as the shelf 12, the ears 42 being positioned thereon initially as shown in Fig. 2, wherein the screws 46 are disposed in the ends of the slots 44 farthest from the front edge of the shelf 12. The screws are tightened against the ears 42 so as to tentatively hold the catch fixed relative to the shelf. While so held, the door 10 may be moved toward its closed position until the plate 26 is engaged thereby.

The present invention also includes marking means which are formed on the plate 26 for purposes of forming indications on the inner surface of the door 10 which may be used to properly position the plate 26 on said door when the plate is being secured thereto by the screws 32. Such means are illustrated in several forms. In Fig. 4, the means comprise a small pointed projection 54 formed at each corner of the plate 26. It will be seen from Fig. 2 particularly that said projections will very effectively form indentations in the inner surface of the door when the door is moved against the projections as described, while the plate 26 and strike 18 are held by the catch 36 as shown in Fig. 2. After the marking indentations have been formed in inner surface of the door 10, the door is opened, the plate 26 and strike 18 are disengaged from the catch 36, and the strike and the plate are then placed on the inner surface of the door 10 so that the projections 54 engage the indentations previously formed thereby. Screws 32 are then threaded into the door to permanently secure the plate 26 thereto, said plate maintaining the strike 18 in operative position on said door.

After the plate and strike have been secured to the door 10, as described above, the screws 46 are loosened and the catch 36 is moved a short distance backward relative to the front edge of the shelf 12. The screws 46 are then re-tightened to hold the catch 36 in the final position thereof which is illustrated in Fig. 1. In this position, the tips 48 do not engage either the ribs 52 or any other portions of the plate 26 when the door 10 is in closed position. Thus, the spring arms 38 of the catch may independently flex relative to the strike 18 when the same engages the catch during movement of the door to closed position. Also, the limited floating movement afforded the strike relative to the plate 26 will permit the strike to center itself relative to the arms 38 of the catch regardless of whether the portions of the cabinet by which the catch and strike are supported have shrunk or swelled from the positions they occupied when the components of the door catch were originally secured thereto.

In Fig. 5, another embodiment of marking means is illustrated, the same comprising, in lieu of the projection 54, short, ragged, sharp-edged annular flanges 56 which extend beyond the door engaging surface of the plate 26 and surround the apertures 30. Said flanges may be formed, for example, by a punching operation with a die having a larger bore than the diameter of the punch which results in the formation of a ragged sharp edge on a slight flange surrounding the holes 30 formed by the punch. It will be seen that said flanges 56 will function to form indentations in the inner surface of the door 10 when the door is moved against said flanges while the plate 26 and strike 18 are held by the catch 36 as shown in Fig. 2 and described above relative to the function of the projections 54.

From the foregoing, it will be seen that the strike can float relative to the plate 26 so as to permit the strike and catch to be relatively self-centering. Thus, the life of the catch and particularly the spring arms thereof will be increased materially since said arms will always exert equal pressure on the strike in contrast to conventional catches in which no self-centering is permitted between the strike and spring arms of the catch. In the latter, the strike is usually fixedly positioned relative to a cabinet door, for example, and the catch is mounted fixedly relative to a shelf of the cabinet. Under these circumstances, should warpage occur in the door or shelf, or other parts of the cabinet, so as to cause misalignment between the strike

and catch, one spring arm of the catch will be stressed by the strike more than the other or even be solely stressed, and the other not at all. Such conditions are obviated by the self-centering permitted by the present invention. Also, said invention comprises means described above for readily and easily indicating the mounting positions for said strike and catch so that such self-centering may take place.

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 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 door catch comprising in combination a headed strike, a plate supporting said strike for limited lateral movement, a catch comprising a pair of spring fingers frictionally engageable with the head of said strike, and means on said catch and plate which when said fingers and head are engaged are coengageable to locate said fingers in a predetermined position and thereby position said strike intermediately of its limits of movement relative to said plate and whereby said plate and catch will be in operative alignment to aid in the installation thereof in their operative positions.

2. A door catch comprising in combination a headed strike, a plate supporting said strike for limited lateral movement, a catch comprising a pair of spring fingers frictionally engageable with the head of said strike, spaced members on said plate which when said fingers and head are in engagement are engaged by the ends of said fingers to locate said fingers in a predetermined position and thereby position said strike intermediately of its limits of movement relative to said plate and whereby said plate and catch will be in operative alignment to aid in the installation thereof in their operative positions.

JOHN D. CARROLL.

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

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