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E. W. NORTH ET AL

2,244,344

LATCH

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Fig. 1.

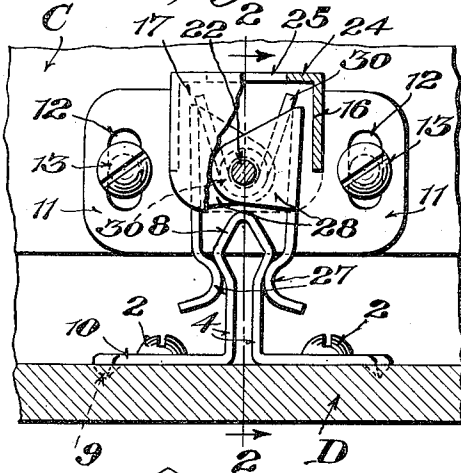


Fig. 2.

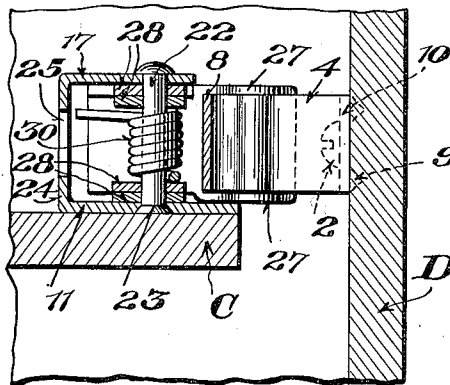


Fig. 3.

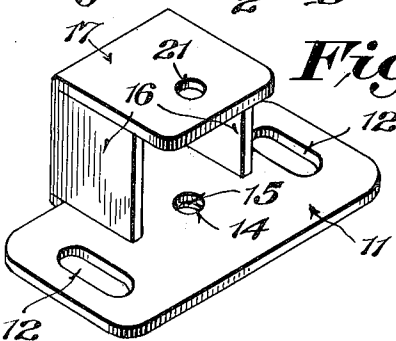


Fig. 4.

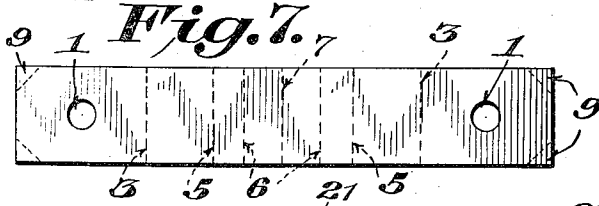
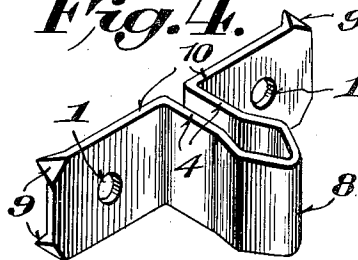


Fig. 6.

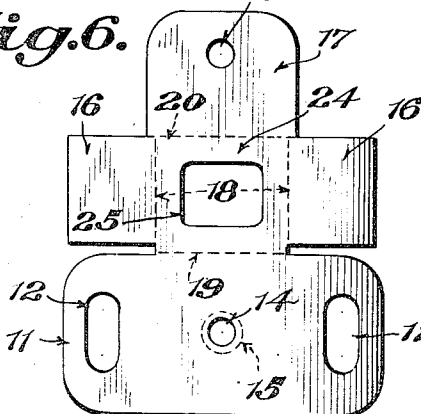


Fig. 5.

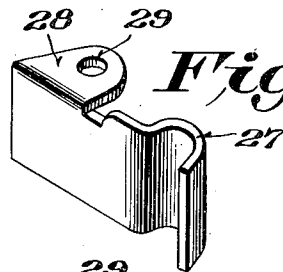
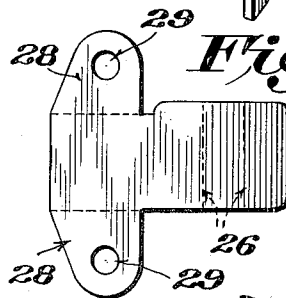


Fig. 8.



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UNITED STATES PATENT OFFICE

2,244,344

LATCH

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3 Claims. (Cl. 292—18)

This invention relates to latches, and more particularly to a latch of the spring type, wherein opposed spring jaws, are carried by a keeper member or device having a casing or housing that is attached to a cabinet or the like, or its door, and which embrace and releasably retain a male member that conversely is carried by the door or by the cabinet.

The primary object of the invention is to provide a latch of this type, which is of simple and compact construction and one wherein all of the elements comprising the keeper member are secured, in assembled relation, by means of a single rivet or equivalent fastener.

Another object of the invention is to provide a spring latch which is of strong and rugged construction and one wherein the parts are protected from injury or damage should the door be slammed in closing same.

Still further the invention aims to provide a novel housing for the keeper member, and more particularly to provide a housing which is formed of a single blank and which is of a strong and stable character.

A still further object of the invention is to provide a novel catch or male member, and means for securing same in position which also provides for initial securement of the member during the application of the screws which hold same in position, and which means still further acts to reinforce the ends of the catch member and to provide rounded corners eliminating sharp right angular edges.

Still further the invention aims to provide a device of this character wherein distortion or injury to the spring jaws of the keeper device by contact thereof with the catch is rendered impossible.

Also the invention aims to provide a device of this type wherein the keeper device has its jaws tensioned by a coil spring, the mounting means of the jaws being engageable with the head of the catch, thereby to prevent contact of the latter with the spring, and consequent elimination of any damage to the latter through contact.

The invention has still further and other objects which will be later set forth and of themselves manifested in the course of the following description.

In the drawing:

Fig. 1 is a top plan view of the invention, partly broken away and in section showing same applied in operative position, by way of example, to the shelf of a cabinet, the door shown in section;

Fig. 2 is a section on line 2—2 of Fig. 1;

Fig. 3 is a detail perspective view of the housing of the keeper member;

Fig. 4 is a like view of the catch or male member;

Fig. 5 is a perspective view of one of the jaws of the keeper member;

Fig. 6 is a plan view of the blank from which the keeper housing is constructed;

Fig. 7 is a plan view of the blank from which the catch or male member is formed; and

Fig. 8 is a plan view of a blank from which the jaws of the keeper member are each constructed.

The catch or male member will first be described and by referring to Fig. 7, it will be seen that the blank of sheet metal from which same is formed is of rectangular shape and is provided with openings 1, to receive fastening screws 2, as shown in Fig. 1, of the drawing.

The blank is bent along the lines 3, to form a pair of spaced legs 4, which latter constitute the shank of the catch, and is also bent on the lines 5, 6, and 7 to form the head 8 of the catch or male member, the head being of generally arrow-head shape.

The four corners of the blank are turned or bent downwardly to form spurs 9, which latter in initial attachment are driven into the door D, in predetermined position, so that the blank is thus temporarily held in place during the driving of the screws 2. The spurs also augment the final securement of the catch member to the door, and by virtue of the spurs being formed by bending the blank corners diagonally or at an angle, it will be seen that the sharp right angular corners of the wings 10, which constitute the base of the catch, are eliminated so that the corners of the blank are somewhat rounded off, thus eliminating sharp projections which otherwise would exist.

The casing of the keeper member is formed of a blank depicted in Fig. 6 of the drawing and comprises a base 11, formed with slots 12 adjacent its ends to receive screws 13 by means of which the base is adjustably affixed to a part of the cabinet C. The base 11 further has a central opening 14, which is preferably counter-sunk at 15, and which lies centrally of the length and width of the base.

The blank is further formed with wings 16, which extend outwardly in opposite directions and with a member 17; the wings being bent along the lines 18 and along a line 19, to overlie the base 11 and engage the latter as depicted in Fig. 3, whereby the wings form the ends of the keeper casing or housing. The top of the housing is formed by the member 17, which latter is bent along the line 20, to overlie and engage the wings, as is also depicted in Fig. 3.

The member 17 is further formed with an opening 21 through which a rivet or equivalent 22 is passed, the head of the rivet engaging against the top 17. The rivet is extended through the opening 14, and has its opposite end upset, as indicated at 23, thereby to rigidly secure the

top against the wings 16 and the latter against base 11, thus forming a strong and rugged structure and one which also involves a minimum of material. The back of the housing is indicated at 24 and is formed by the material of the blank which lies between lines 18, 19, and 20. The opening 25 is merely the result of the die striking operation in forming the blank of Fig. 6, and merely lightens the structure.

Referring now to Figs. 5 and 8 of the drawing, it will be seen that in the latter figure, a blank is provided which is of substantially T-shape to form the jaw depicted in Fig. 5. This blank has its leg bent along the lines 26 and also shaped to form a curved jaw 27, while the ends of the head of the T are bent outwardly in a direction reverse to that in which the jaw proper faces, to form pivotal ears 28 that are formed with openings 29. The rivet or pin 22 is passed through the openings 29 of the ears 28 and thus affords a pivotal mounting for each of the jaws. The ears as depicted in Fig. 2 are superimposed, and completely enclosed by the housing of the keeper.

A coil spring 30 is mounted on the pin or rivet 22 and has its ends engaging the inner confronting faces of the inner ends of the jaws and urge the latter outwardly so that when in the position of Fig. 1, the spring will exert tension against opposite sides of the catch below the head of the latter and thereby releasably hold the catch in latched position.

Referring to Fig. 1, of the drawing, it will be seen that the head 8 of the latch upon entering between the jaws is engaged by the ears 28 of the latter and its movement thereby limited. Since the coil of the spring lies rearwardly of the outer edges of the ears, it will thereby be seen that the catch cannot engage the spring, and thereby injure the latter especially should the door be slammed in closing same.

It will further be seen that the rivet or pin 22 performs a variety of functions. First, it acts to rigidly secure the ends and top of the housing tightly in assembled position. Second, it also provides for pivotal mounting of the ears 28 of the jaws. Third, the rivet affords a mounting for the coil spring; and fourth, by virtue of the intervention of the ears, in supporting the latter, the rivet restricts inward movement of the catch in latching.

This latter feature is important because contact of the outer ends of the jaws with the base of the catch is prevented, should the keeper device be positioned too close to the door, and consequently the jaws are protected from damage or distortion in or by movement of the door to its closed position. In other words there is a material space maintained at all times between the ends of the jaws and the base of the catch or male member so that contact between these parts is impossible regardless of how the keeper device is positioned relative to the catch.

By referring to Fig. 3 of the drawing, it will be seen that the base plate 11 projects for a distance forwardly of the open front end of the housing, which latter is constituted by a part of the base plate and the parts 16, 17, and 24. By so projecting the base plate, the upper face of same serves to afford sliding support for the jaws 27 intermediate the ends of the latter. This is of particular value in instances of where the invention is used in connection with heavy doors, such as garages or the like, and the slamming of doors regardless of their type, since the jaws are

afforded support by the base plate, in addition to being held at their rear ends against upward movement by the top 17 of the keeper housing.

It is furthermore to be noted that the invention is not limited in its use to doors of cabinets or cupboards, or the like, but to the contrary is susceptible of use in connection with all types of closures. Thus for example, the invention is applicable for use as a door holder, by attachment of the catch and keeper casing between the door and a wall of a room or other support to hold the door in an open position. These various uses are merely by way of example and not an exhaustive enumeration.

It is also to be expressly understood that whether the keeper casing be attached to the cupboard or other stationary element and the catch to the closure or movable element is immaterial, the invention contemplating either form of attachment, and the right is also reserved to otherwise make such changes, modifications and alterations, as may fall within the scope and terms of the following claims.

What is claimed is:

1. A closure fastener including a casing formed of sheet metal and composed of a base having an integral rear wall extending outwardly at right angles therefrom, ends integral with the respective ends of the rear wall and having lower edges seated upon the upper face of the base, a top integral with the upper side of the rear wall and having its under face seated upon the upper edges of the ends, a rivet-like fastener having its ends engaged with the outer face of the top and with the inner face of the base so as to hold the ends firmly seated against the base, and top, a pair of opposed jaws each having a pair of ears provided with holes through which the rivet-like fastener extends to pivotally mount the jaws on the fastener, the ears of the jaws being superposed, and a coil spring mounted on the fastener and disposed between the ears of the jaws and having ends engaging the jaws whereby to tension the latter.

2. A closure fastener in accordance with claim 1, wherein the ears of the jaws are so disposed as to present themselves to restrict inward movement of a catch which may be received by the said jaws to prevent same from engaging the coil of the spring on the fastener, and wherein the outer ends of the jaws are spaced from the base of the catch thereby to prevent contact of the jaws with the said catch base.

3. A closure fastener including a keeper member composed of a base plate, a housing carried by the base plate and having a bottom formed by a part of the base plate, said housing having a top, a back, end walls and an open front, spring-urged jaws pivotally connected at their rear ends to the base plate and to the top and normally projecting beyond said open front, said base plate including a part projecting outwardly beyond the open front and the ends of the housing for a considerable distance thereby to engage the bottom portions of the jaws and slidably support and hold same against downward movement, and the jaws having upper portions slidably engaged by the top of the housing whereby the jaws will be reinforcedly confined between said base and top to prevent them from being deflected except in their pivoting movement about their pivot.

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