M. S. KEELER.

LATCH.

APPLICATION FILED AUG. 2, 1915.

Patented Mar. 14, 1916.

1,175,771.

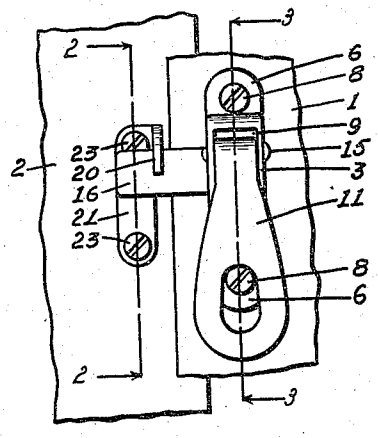


FIG. I.

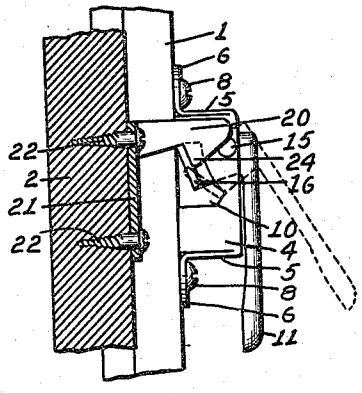


FIG. II.

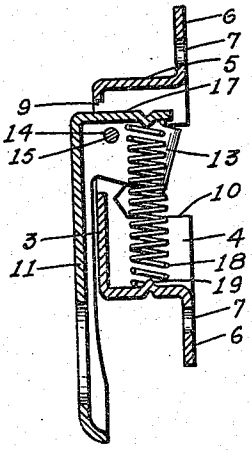


FIG. III.

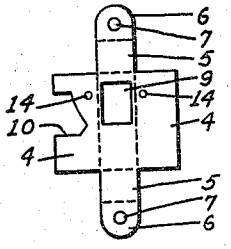


FIG. IV.

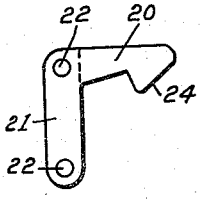


FIG. V.

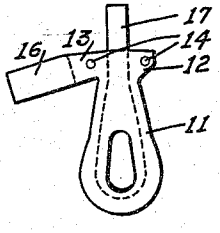


FIG. VI.

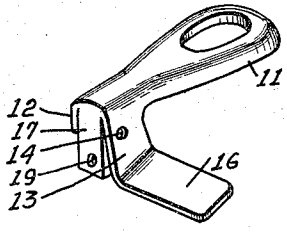


FIG. VII.

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LATCH.

1,175,771. Specification of Letters Patent. Patented Mar. 14, 1916.

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To all whom it may concern:

Be it known that I, MINER S. KEELER, a citizen of the United States, residing at Grand Rapids, county of Kent, State of Michigan, have invented certain new and useful Improvements in Latches, of which the following is a specification.

This invention relates to improvements in latches.

My improvements are especially designed by me for embodiment in latches for doors, such as the doors of kitchen cabinets, cupboards and the like, although they may be readily adapted and are desirable for use in latches for heavier doors, such as refrigerator doors. I have shown the same in the accompanying drawings as I have embodied them for use on light doors, such as kitchen cabinets, cupboards and the like.

The main objects of my invention are: first, to provide an improved latch in which the parts may be formed of sheet metal stampings and are simple and economical to produce and easily assembled; second, to provide an improved latch which is effective and at the same time compact and attractive in appearance.

Further objects, and objects relating to structural details, will definitely appear from the detailed description to follow.

I accomplish the objects of my invention by the devices and means described in the following specification.

The invention is clearly defined and pointed out in the claims.

A structure which is a preferred embodiment of my invention is clearly illustrated in the accompanying drawing forming a part of this specification, in which:

Figure I is a front elevation of a structure embodying the features of my invention with the latch mounted upon a door and a coacting keeper mounted upon the door casing, the latch being shown in its keeper engaging position. Fig. II is a detail section on a line corresponding to line 2—2 of Fig. I, the catch being shown in its disengaged position by dotted lines. Fig. III is a detail vertical section through the latch on a line corresponding to line 3—3 of Fig. I. Fig. IV is a plan view of the blank from which the latch housing or casing is formed. Fig. V is a plan view of the blank from which the keeper is formed. Fig. VI is a plan view of the blank from which the catch and its lever are formed. Fig. VII is a perspective view of the catch and its lever removed from the housing.

In the drawings similar reference characters refer to similar parts throughout the several views, and the sectional views are taken looking in the direction of the little arrows at the ends of the section lines.

Referring to the drawings, 1 represents a door and 2 a door casing on which the parts are shown. The latch housing or casing is formed integrally of sheet metal and comprises a top wall 3, side walls 4 and end walls 5, the side and end walls being turned rearwardly from the top wall. The blank from which the housing is formed is shown in Fig. IV. The end walls 5 terminate in laterally turned lugs 6 perforated at 7 to receive the attaching screws 8. The top wall is provided with an opening 9, while one side wall has an opening 10 therein. The catch and its lever is also an integral sheet metal stamping. The catch lever 11 is provided with rearwardly turned side members 12 and 13 at its inner end adapted to be disposed in the opening 9 of the housing and constituting pivot ears or members. These side members have holes 14 therein for the pivot 15 which is arranged through the side walls of the housing and through these lever side members. The lever side member 13 terminates in a laterally turned extension 16 constituting the catch or keeper engaging member. This catch projects through the opening 10 in the side wall, the ends of the opening being preferably adapted to serve as stops for limiting the swing of the lever. At the inner end of the lever 11 is a rearwardly turned arm 17 disposed between the lever side members 12 and 13.

A coiled spring 18 is arranged in the housing with one end supported by one end wall and the other engaging this arm 17 to hold the lever with its catch yieldingly in its keeper engaging position. The end wall and the arm are provided with spring retaining lugs 19 formed by punching or striking up portions thereof. (See Fig. III). These lugs effectively hold the spring in place.

The keeper 20 is provided with an attaching plate or base 21 perforated at 22 to receive the attaching screws 23. This is also preferably a sheet metal stamping.

The keeper has an oppositely inclined edge 24 with which the catch engages, the keeper being positioned so that the catch will strike the outwardly facing inclined edge of the keeper and slide over it into engagement with the inwardly inclined edge thereof. The spring pressing on the lever serves to press the door toward the jamb or casing. The stops for the lever are preferably disposed so that the lever normally lies close to and substantially parallel with the top of the housing.

By supporting the catch lever by pivots arranged through the side members the transverse or twisting strains thereon are effectively withstood although the parts may be of comparatively small size and of light material.

I have illustrated and described my improvements in detail in a simple and practical embodiment as I have placed the same on the market. I have not attempted to illustrate or describe various embodiments or modifications which I contemplate to adapt the latch to special or particular purposes, as I believe the disclosure made will enable those skilled in the art to which my invention relates to embody or adapt the same as conditions may require or taste dictate. I desire, however, to be understood as claiming my improvements specifically in the form illustrated as well as broadly within the scope of the appended claims.

Having thus described my invention, what I claim as new and desire to secure by Letters Patent, is:

1. In a device of the class described, the combination of a sheet metal housing comprising integral top, side and end walls, the side and end walls being turned rearwardly from the top wall, the end walls terminating in out-turned attaching lugs, the top wall having an opening therein adapted to receive a lever, one side wall having an opening therein adapted to receive a catch, a catch lever formed integrally of sheet metal and having rearwardly projecting side members and an arm at its inner end projecting rearwardly between said side members, said side members being disposed in said opening in said top wall and being supported laterally by the side walls, one of said side members being extended laterally to provide a catch disposed through said opening in said side wall, a lever pivot disposed through said side walls and said lever side members, a coiled spring supported at one end by an end wall of said housing with its other end in engagement with said lever arm, such end wall and arm having spring engaging lugs struck therefrom, and a keeper coacting with said catch.

2. In a device of the class described, the combination of a sheet metal housing comprising integral top, side and end walls, the side and end walls being turned rearwardly from the top wall, the end walls terminating in out-turned attaching lugs, the top wall having an opening therein adapted to receive a lever, one side wall having an opening therein adapted to receive a catch, a catch lever formed integrally of sheet metal and having rearwardly projecting side members, said side members being disposed in said opening in said top wall and being supported laterally by the side walls, one of said side members being extended laterally to provide a catch disposed through said opening in said side wall, a lever pivot disposed through said side walls and said lever side members, a spring supported in said housing to act upon said lever, and a keeper coacting with said catch.

3. In a device of the class described, the combination of a sheet metal housing provided with attaching means and comprising integral top and side walls, a catch lever formed integrally of sheet metal and having rearwardly projecting side members and a rearwardly projecting arm at its inner end, said side members being disposed in an opening in said housing top wall and supported laterally by the side walls, one of said side members being extended laterally and projecting from the housing to provide a catch, a lever pivot disposed through said side walls and said lever side members, a coiled spring supported at one end by an end wall of said housing with its other end in engagement with said lever arm, such end wall and arm having spring engaging lugs struck therefrom, and a keeper coacting with said catch.

4. In a device of the class described, the combination of a sheet metal housing provided with attaching means and comprising integral top and side walls, a catch lever formed integrally of sheet metal and having rearwardly projecting side members, said side members being disposed in an opening in said housing top wall, one of said side members being extended laterally and projecting from the housing to provide a catch, a lever pivot disposed through said side walls and said lever side members, a spring supported in said housing to act on said lever, and a keeper coacting with said catch.

5. In a device of the class described, the combination of a housing provided with attaching means and comprising top and side walls, a catch lever having rearwardly projecting side members and an arm at its inner end disposed in an opening in said housing and supported laterally by the side walls thereof, one of said side members being extended laterally to provide a catch projecting from said housing, a lever pivot disposed through said side walls and said lever side members, a coiled spring sup-

ported at one end by an end wall of said housing with its other end engaging said lever arm, and a keeper coacting with said catch.

6. In a device of the class described, the combination of a housing provided with attaching means, a catch lever having rearwardly projecting side members at its inner end constituting pivot members disposed in an opening in said housing, one of said side members being extended laterally to provide a catch, said housing having a side opening through which said catch projects, a lever pivot disposed through said lever side members, a spring arranged to act on said lever, and a keeper coacting with said catch.

7. In a device of the class described, the combination of a housing provided with attaching means, a catch lever having a rearwardly projecting member at its inner end constituting a pivot member disposed in an opening in said housing, said member being extended laterally to provide a catch, said housing having a side opening through which said catch projects, the ends of the opening constituting stops to limit the swing of the lever, a lever pivot disposed through said pivot member, a spring arranged to act on said lever, and a keeper coacting with said catch.

8. In a device of the class described, the combination of a housing provided with attaching means, a catch lever having a rearwardly projecting member at its inner end constituting a pivot member disposed in an opening in said housing, said member being extended laterally to provide a catch, a lever pivot disposed through said pivot member, a spring arranged to act on said lever, and a keeper coacting with said catch.

9. In a device of the class described, the combination of a housing, a catch lever provided with a pair of spaced rearwardly projecting members at its inner end constituting pivot members and a laterally projecting catch member disposed through a side opening in the said housing, the ends of said opening constituting stops coacting with said catch member to limit the swing of the lever, a pivot disposed through said lever pivot members, and a spring arranged to act on said lever to hold it yieldingly in engaging position, the stops being disposed so that the lever normally rests close to and substantially parallel with the top of the housing.

10. In a device of the class described, the combination of a housing, a catch lever provided with a pair of spaced rearwardly projecting members at its inner end constituting pivot ears and a laterally projecting catch member disposed through a side opening in the said housing, a pivot disposed through said lever pivot members, and a spring arranged to act on said lever to hold it yieldingly in engaging position.

In witness whereof I have hereunto set my hand and seal in the presence of two witnesses.

MINER S. KEELER. [L. S.]

Witnesses:
S. S. KEELER,
F. E. BAKER.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."