

[54] **CABINET SPRING LATCH**
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[52] U.S. Cl. **292/219; 292/228; 292/227**
 [51] Int. Cl.² **E05C 3/12**
 [58] Field of Search **292/219, 227, 228, 18, 292/78**

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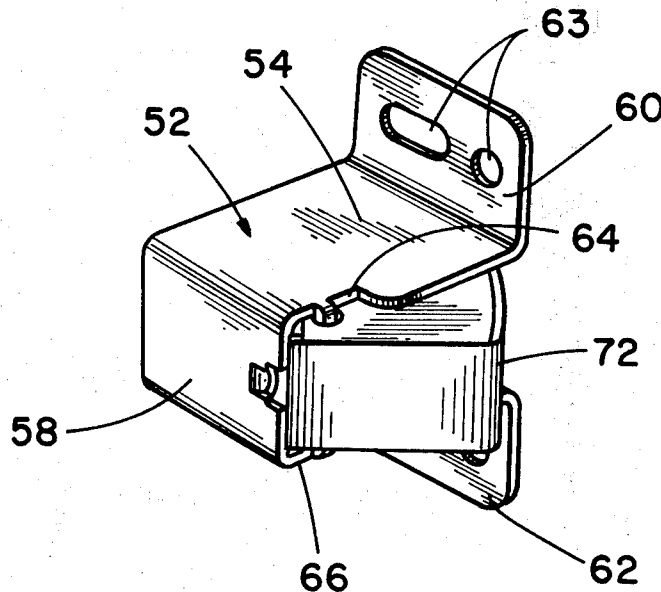
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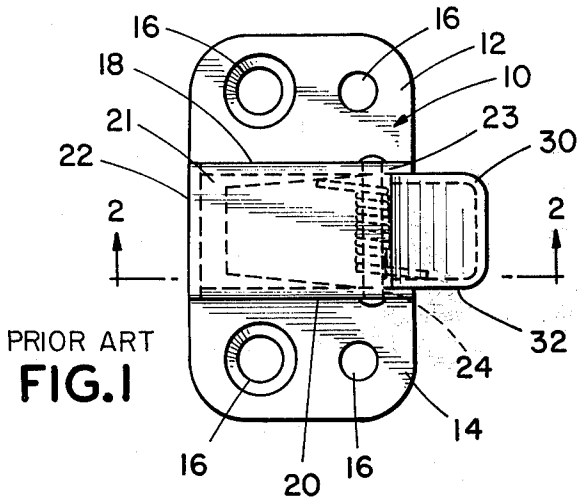
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[57] **ABSTRACT**

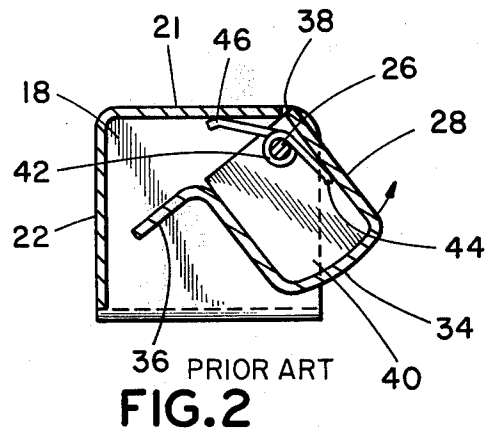
An improved spring latch is made of three components including a housing and a pawl serving as a latch which is adapted to nest within the housing. A single coil spring is positioned between a portion of the housing and a pocket formed in the pawl to pivot the pawl into a latching position. Tabs preformed in the housing serve as the pivot axis for the pawl. Portions of the pawl and the housing cooperatively engage to limit the rotational or pivotal travel of the pawl relative to the housing.

4 Claims, 8 Drawing Figures





PRIOR ART
FIG. 1



PRIOR ART
FIG. 2

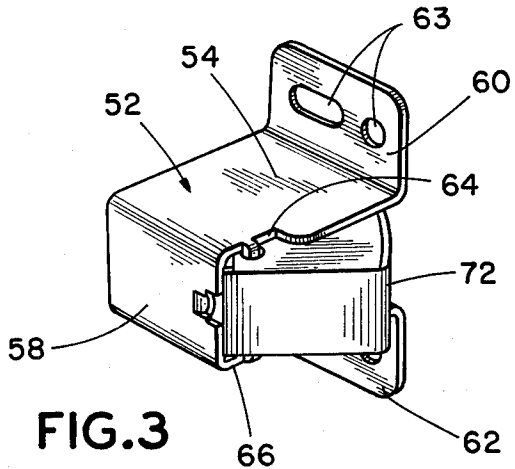


FIG. 3

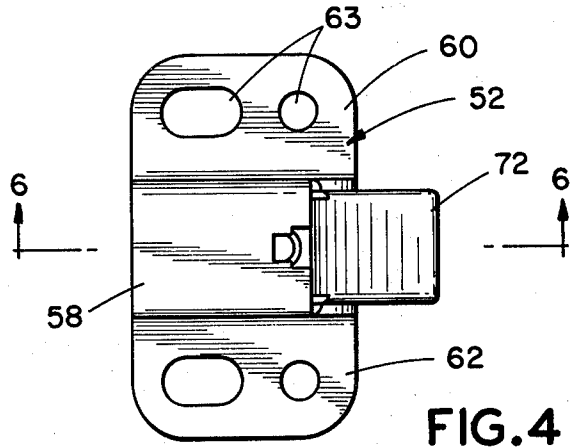


FIG. 4

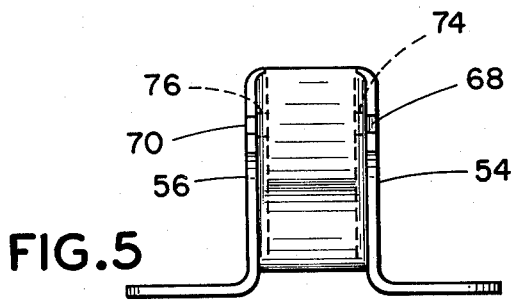


FIG. 5

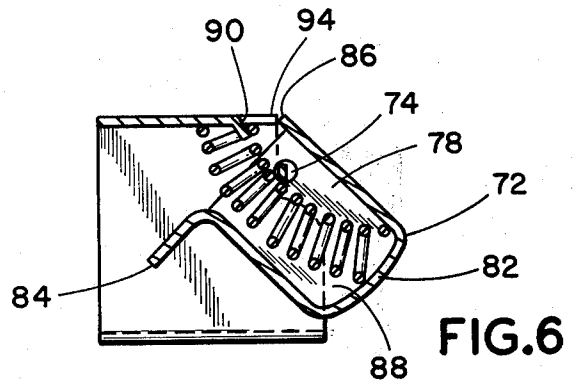


FIG. 6

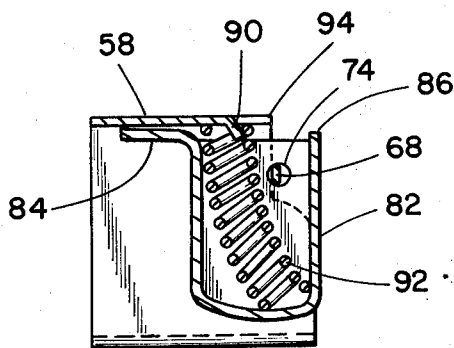


FIG. 7

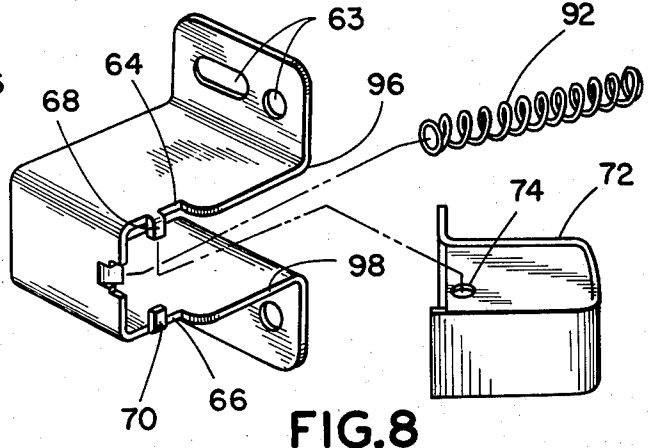


FIG. 8

CABINET SPRING LATCH

BACKGROUND OF THE INVENTION

This invention relates to an improved spring latch. A typical prior art spring latch includes at least four separate parts: a housing, a pawl, a pivot axle and a coil spring. It is desirable to reduce the number of parts of such a construction without loss of function or reliability.

SUMMARY OF THE INVENTION

In a principal aspect, the present invention comprises an improved spring latch including a housing, a pawl and a spring. The pawl and housing engage by means of tabs defining a pivot axis for the pawl relative to the housing. The spring engages the housing at one end and a pocket defined in the pawl at its opposite end to bias the pawl into a latching position.

It is thus an object of the present invention to provide an improved spring latch having fewer parts than prior art spring latches.

It is a further object of the present invention to provide an improved spring latch comprising three parts including a housing, a pawl and a spring.

Still another object of the present invention is to provide an improved spring latch wherein the housing includes projections defining a pivot axis for a pawl of the spring latch and a projection for engaging with a spring that biases the pawl into a latching position.

One further object of the present invention is to provide an improved spring latch construction which can be easily fabricated by current manufacturing techniques without sacrificing reliability or structural integrity of the latch.

These and other objects, advantages and features of the invention will be set forth in the detailed description which follows.

BRIEF DESCRIPTION OF THE DRAWING

In the detailed description which follows, reference will be made to the drawing comprised of the following figures:

FIG. 1 is a top plan view of a typical prior art spring latch;

FIG. 2 is a cross-sectional view of the spring latch of FIG. 1 taken substantially along the line 2—2 in FIG. 1;

FIG. 3 is a perspective view of the improved spring latch of the present invention;

FIG. 4 is a top plan view of the improved spring latch of the present invention similar to FIG. 1;

FIG. 5 is an end view of the spring latch of FIG. 4;

FIG. 6 is a cross-sectional view of the spring latch of FIG. 4 taken substantially along the line 6—6;

FIG. 7 is a cross-sectional view of the spring latch of the present invention similar to FIG. 6 wherein the pawl has been biased to a retracted position; and

FIG. 8 is an exploded perspective view illustrating the component parts and manner of assembly of the improved spring latch of the present invention.

DESCRIPTION OF THE PREFERRED EMBODIMENT

FIGS. 1 and 2 illustrate a prior art spring latch. The prior art includes a housing 10 having side wings 12 and 14 with openings as at 16 for appropriate fastening means. The housing 10 is formed from sheet metal and

includes opposed spaced parallel side walls 18 and 20, a connecting wall 21 and an end wall 22. The housing 10 can be fabricated from a planar sheet of material by appropriate stamping and bending operations well known to those skilled in the art.

Opposed openings 23 and 24 are defined in the side walls 18 and 20 respectively. The openings 23 and 24 are for receipt of a pin or rod 26 which serves as an axle for mounting and rotation of a pawl member 28.

The pawl 28 is likewise fabricated from a single planar sheet of material by appropriate stamping and bending operations. The pawl 28 includes opposed side walls 30 and 32 and an intermediate connecting wall 34 terminating in a flange 36 at one end and an edge 38 at its opposite end. The walls 30, 32 and 34 define a pocket 40 in the pawl 28.

The pawl 28 is mounted within the enclosure defined by the housing 10 between walls 18 and 20 by means of the pin or rod 26. Pin 26 fits through openings 74 and 76 of pawl 28 and openings 23 and 24 of housing 10. A coil spring 42 is positioned over pin 26 and has opposite ends 44 and 46 engaging respectively the pawl 28 and housing 10.

The improvement of the present invention is illustrated in the remaining FIGS. 3-8. Whereas the prior art structure illustrated in FIGS. 1 and 2 required four separate parts to form the spring latch, the structure of FIGS. 3 through 8 requires only three distinct parts as illustrated in FIG. 8.

Referring then to FIGS. 3-8, the improved spring latch of the present invention is comprised of a housing 52 having opposed, parallel, spaced side walls 54 and 56 connected by an intermediate wall 58. The housing 52 thus defines a partial enclosure. Attachment wings 60 and 62 with fastener openings 63 are provided to facilitate attachment of the spring latch to a door frame or the like. Opposed upper edges 64 and 66 of the walls 54 and 56 include projecting tabs 68 and 70 which extend toward each other to define a pivot axis for a pawl 72.

The pawl 72 is substantially identical to the pawl illustrated in the prior art disclosure FIGS. 1 and 2. Openings 74 and 76 in the pawl 72, however, receive the tabs 68 and 70 respectively rather than a pin or rod as at 26 in FIG. 2. The pawl 72 thus includes parallel opposed spaced side walls 78 and 80 which are interconnected by an intermediate wall 82. The intermediate wall 82 terminates at one end in a flange 84 and at its opposite end with an edge 86. The walls 78, 80 and 82 define a pocket 88 for pawl 72.

The housing 52 and in particular, the intermediate wall 58 includes a downward projection 90. A coil spring 92 engages the projection 90 at one end. The opposite end of the spring 92 is engaged with the pocket 88 of the pawl 72. Referring to FIG. 6, it can be seen that the spring 92 normally biases the pawl 72 outward toward a latching position. The pawl 72 may be depressed against the force of the spring 92 to the position illustrated in FIG. 7. The travel of the pawl 72 is limited by the flange 84 when in the depressed position of FIG. 7. The edge 86 cooperates with an edge 94 of housing 52 to limit the travel imparted by the spring 92 to the pawl 72.

It will be noted that the tabs 68 and 70 projecting from the edges 64 and 66 are, in the embodiment disclosed, set back from parallel edges 96 and 98 a distance approximately equal to the distance openings 74

and 76 are set back from the front edge of the intermediate wall 82. This preserves the dimensional characteristics of the spring latch of the present invention relative to the prior art spring latch discussed above.

Thus, it can be seen that the present invention eliminates a pin or rod 26. In addition, a spring 42 of special construction is eliminated. Rather, a simple coil spring 92 is utilized. Because of these features, fewer parts and fewer operations of manufacture are required for the spring latch of the present invention.

While in the foregoing there has been set forth a preferred embodiment of the present invention, it is to be understood that the invention shall be limited only by the following claims and their equivalents.

What is claimed is:

1. An improved spring latch comprising, in combination:

a housing with parallel opposed spaced side walls and an intermediate connecting wall joining said side walls to form a partial enclosure, said side walls including opposed inwardly projecting tabs at one edge defining a rotational axis, said intermediate wall including a projection into said partial enclosure;

a pawl forming a latch, said pawl including parallel

opposed spaced side walls with an interconnecting wall, said pawl side walls including opposed openings to receive said opposed housing tabs and retain said pawl in pivotal nesting relationship between said housing side walls for rotation about the rotational axis, said pawl side walls and interconnecting wall forming a pocket;

a spring engaging said housing projection at one end and said pocket at its opposite end, said spring operative to bias said pawl about the axis defined by the tabs and project said pawl from said housing to a position for engagement with a strike or the like.

2. The improved spring latch of claim 1 including a flange extending from said pawl for engaging the intermediate connecting wall of said housing to limit the rotation of said pawl by a force against said biasing spring.

3. The improved spring latch of claim 1 including opposed engageable portions for both said intermediate connecting walls of said housing and pawl engageable to limit the rotation of said pawl by said biasing spring.

4. The improved spring latch of claim 1 wherein said spring comprises a compressible coil spring.

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