July 31, 1951 G. SCHAEFER 2,562,581

LATCH AND LOCKING MECHANISMS FOR CABINETS AND LOCKER DOORS

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Fig-1-

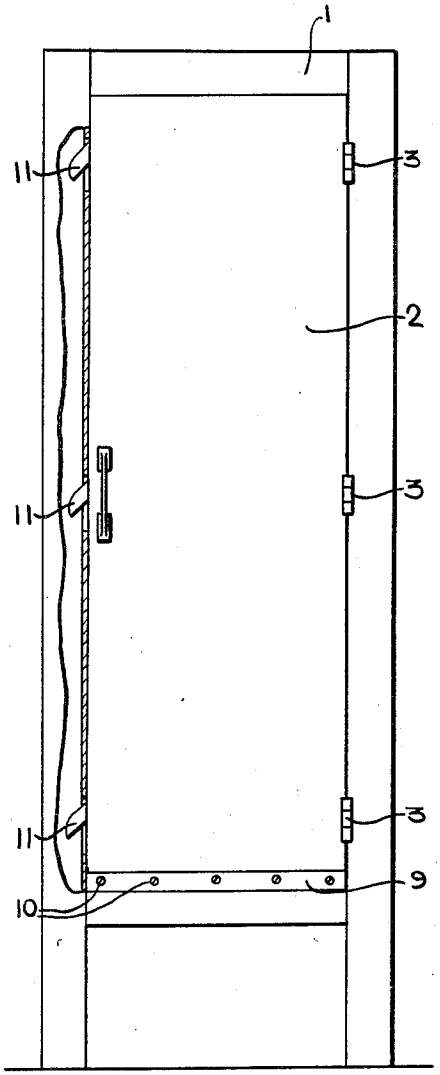
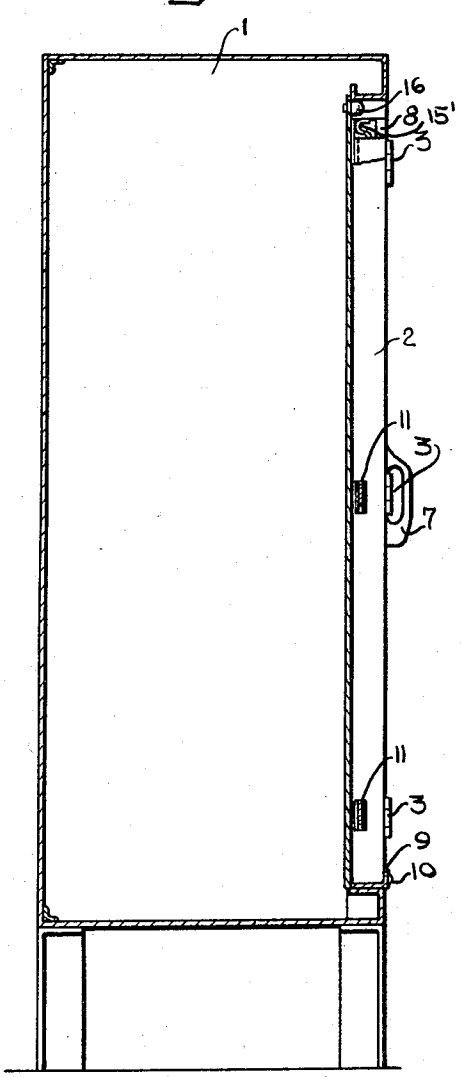


Fig-2-



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Fig-3-

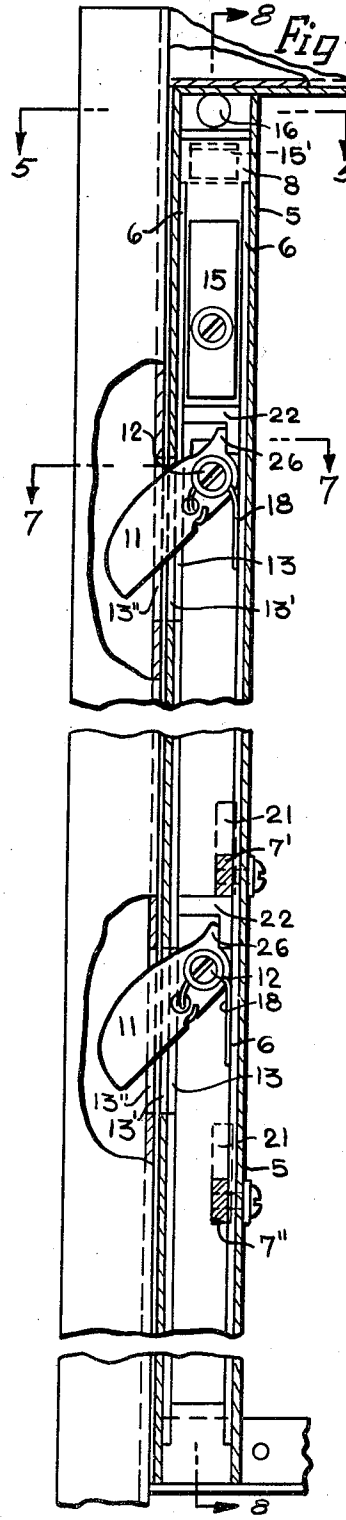


Fig-4-

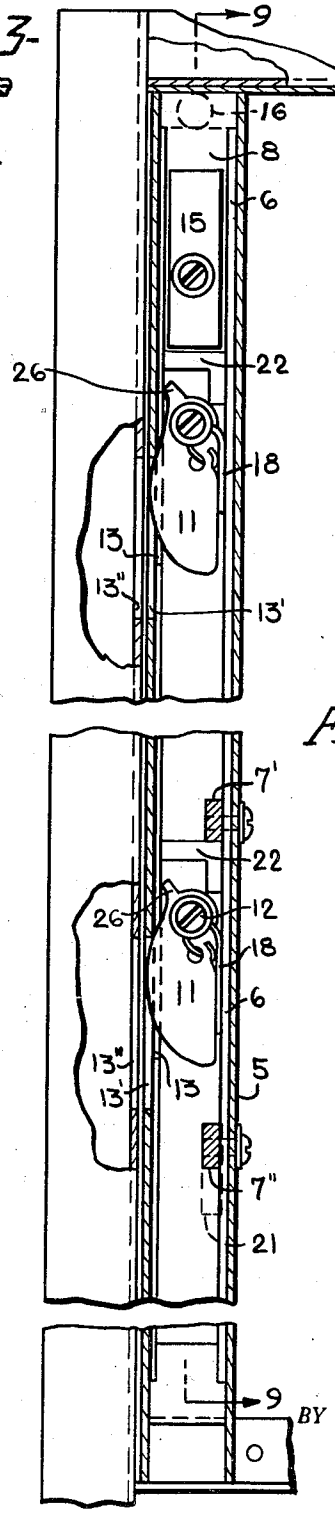


Fig-5-

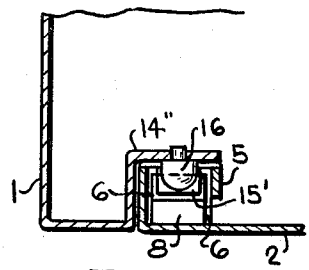


Fig-6-

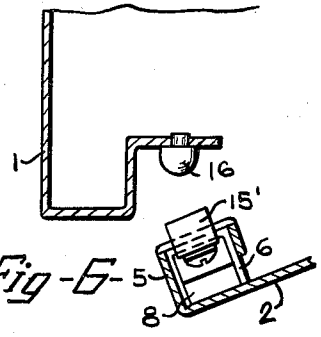
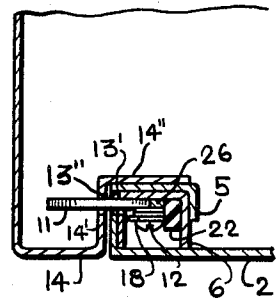


Fig-7-



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LATCH AND LOCKING MECHANISMS FOR CABINETS AND LOCKER DOORS

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Fig-8-

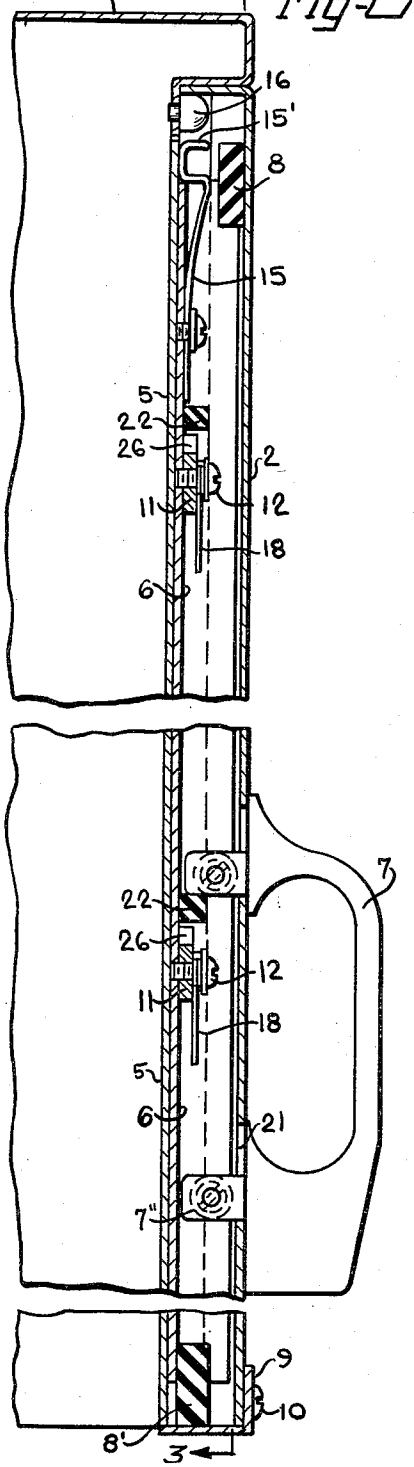
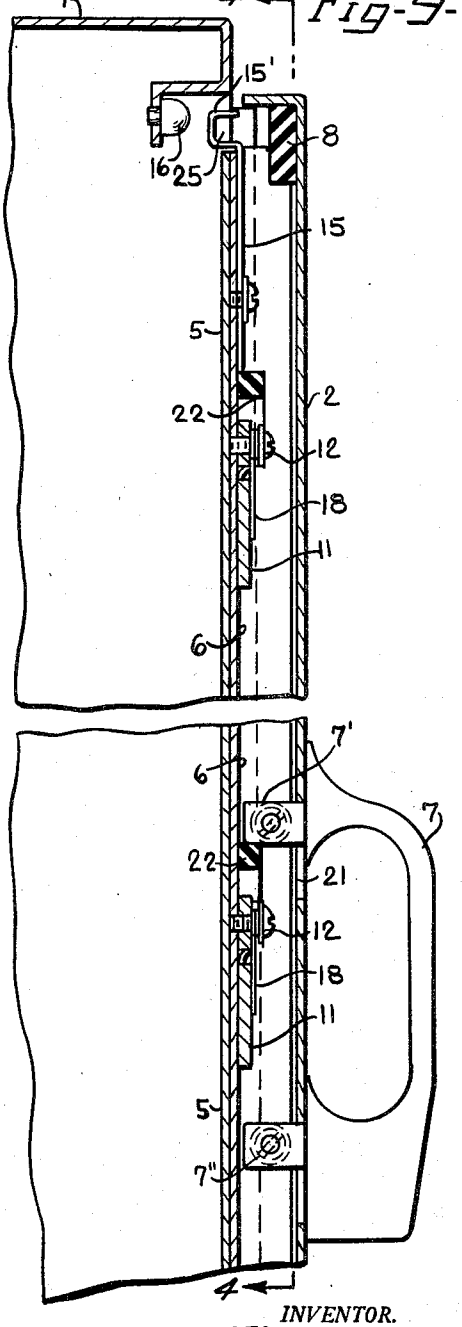


Fig-9-



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Patented July 31, 1951 2,562,581

UNITED STATES PATENT OFFICE

2,562,581

LATCH AND LOCKING MECHANISM FOR CABINETS AND LOCKER DOORS

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Application February 8, 1949, Serial No. 75,134

3 Claims. (Cl. 292—47)

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This invention relates to cabinet and locker doors and it relates particularly to improvements in latch and locking mechanisms for such doors which is similar in construction to the invention forming the subject matter of U. S. application Serial No. 605,048, filed July 14, 1945, filed in the name of Carl Enquist and George Schaefer and has become abandoned.

An object of the present invention is to provide an improved mechanism which may be made of relatively few parts of simple construction, and in which the essential parts of the mechanism are encased on the free edge of the door.

Another object of this invention is the provision of latching means automatically operable on actuation of the door into a closed position.

A further object of this invention is the provision of a door locking mechanism wherein pivotally mounted door latches are employed for engagement behind a vertically extending flange constituting one edge of the door frame.

Other objects and advantages of the invention will appear more fully from the following description.

The invention is based on the use of the old combination of a cabinet, a swinging door hinged thereto and a latch mechanism mounted on said door to retain the same in a closed position. It is distinguished over this old combination by the particular configuration of its individual parts and by their novel cooperation whereby a more reliable and smoother functioning results of the closure elements. The attainment of this advantage is a decisive factor with regard to the practical usefulness of a door locking mechanism for cabinets.

The invention is by way of example illustrated in the accompanying drawings in which

Fig. 1 is a front elevation partly in section, and

Fig. 2 is a sectional side elevation of a sheet metal cabinet provided with a mechanism according to the present invention;

Figs. 3 and 4 are sections taken on lines 3—3 and 4—4 of Figs. 8 and 9 respectively;

Figs. 5 and 6 are horizontal, sectional views along line 5—5 in Fig. 3, the door being closed in Fig. 5 and open in Fig. 6;

Fig. 7 is a sectional view along line 7—7 of Fig. 3;

Fig. 8 is a vertical sectional view along line 8—8 of Fig. 3, and

Fig. 9 is a similar view taken along line 9—9 of Fig. 4.

Referring now particularly to Figs. 1–6 of the attached drawings cabinet 1 is of the usual construction and provided with swinging door 2 hinged at 3 to a vertical edge of the cabinet opening. As shown in Figures 5, 6 and 7 the free edge of the door 2 is bent to provide a U-shaped flange 5. A V-shaped vertically latch bar 6 is housed by and slidably arranged in said U-shaped flange 5. This slidable latch bar 6, Figs. 3, 4 may be downwardly and upwardly shifted by a handle 7, Fig. 1, connected therewith as at 7' and 7'' vertically arranged slots 21 are provided in door 2 to enable this shifting.

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The latch bar 6 is provided at its upper and lower end with rubber buffers 8 and 8', Fig. 8, which abut against the upper horizontal flange of the door and the L-shaped flange 9, Fig. 8, fastened by means of screws 10 to the lower horizontal edge of the door, when this slidable member is shifted to its highest and lowermost position, respectively.

As best shown in Figs. 3, 4 and 8, 9 a plurality of vertically spaced latch elements 11 are secured to latch bar 6 by means of pivots 12 and are rotatable about these pivots.

In the closed position of door 2 the free ends of latch elements 11 are urged to project by the action of the spring clips 18 through suitably shaped spaced vertical slots 13 provided in the slidable bar 6, the registering slots 13' located in the door flange 5 and the registering slots 13'' being arranged in the vertical portion 14' of the cabinet edge 14.

As best apparent from Figs. 5, 6 and 7 the edge of the cabinet which is contacted by the free edge of the door 2 is bent into a Z-shaped vertical flange consisting of the branches 14, 14' and 14'', this Z-shaped member being adapted to receive and cooperate with the free edge of door 2 and the latch mechanism arranged therein.

Upon raising of the slidable latch bar 6 by handle 7 the latch elements 11 are forced to their retracted position, as shown in Figs. 4.

As apparent from Figs. 8 and 9 the upper end of the slidable latch bar 6 is provided with a spring clip 15, the upper part 15' of which in the open position of the door projects beyond bar 6 through a cut-out 25 in the upper edge of the bent vertical door flange 5, as shown in Fig. 9. It prevents, in this position, the downward shifting of the slidable bar 6. If, however, the door 2 is closed the clip is released by the action of the releasing ball 16 which is secured to the upper end of branch 14'' of the vertical flange 14, 14', 14'', said releasing member 16 forcing the upper end of clip 15 to the right as viewed in Fig. 9

upon closing of the door 2. The slidable latch bar 6 may now be shifted downwards. The latches 11 are caused by the action of springs 18 to project through slots 13, 13' and 13'' to secure the door in this position.

The latch elements 11 are provided with projections 26 which are adapted to abut at suitably spaced and arranged L-shaped rubber elements 22 which are secured to bar 6, and thus limit the rotary movement of the latches 11 by spring action upon downwards shifting of the slidable member. Upon opening the door and raising the slidable member, the latches are forced to the position shown in Fig. 4 and they remain in this position until the door is closed and the clip 15 is released again as described above.

It will be understood that this invention may be carried out in specific ways other than those herein set forth and the embodiments should be, therefore, considered as illustrative and not restrictive within the spirit of the invention as defined in the appended claims.

What I claim is:

1. In a cabinet locking device, a U-shaped latch bar, a plurality of vertically spaced latch elements pivotally secured to said U-shaped bar, said bar being slidably housed in a U-shaped flange formed by a free edge of the door of the cabinet, the cabinet edge being provided with a ⌐-shaped flange registering with said U-shaped door flange, said U-shaped latch bar, said U-shaped door flange, and said ⌐-shaped flange being provided with a series of vertically aligned spaced slots adapted to receive said latch elements, springs urging said latch elements outwardly to rotate in a plane substantially parallel with the door and to project through said aligned slots, said latch elements being provided with projections to limit their projecting movement, L-shaped resilient members spaced within said latch bar to abut at said projections, said latch elements being forced to a retracted position upon lifting the U-shaped latch bar.

2. In a cabinet locking device, a U-shaped latch bar, a plurality of vertically spaced latch elements pivotally secured to said U-shaped latch bar, said bar being slidably housed in a U-shaped flange formed by a free edge of the door of the cabinet, said U-shaped latch bar and said U-shaped door flange being provided with a series of vertically spaced aligned slots adapted to receive said latch elements, springs adapted to urge said latch elements in a downwardly shifted position of the U-shaped latch bar to project through said aligned slots, said latch elements being provided with projections to limit the projecting movement of the latches, L-shaped rubber buffers spaced within said latch bar, said projections adapted to abut at said rubber buffers, said latch elements being forced to a retracted position upon lifting the U-shaped latch bar.

3. In a cabinet locking device for a door hinged to a vertical edge of the cabinet opening, a U-shaped flange provided at a free edge of said door, a vertical U-shaped latch bar slidably arranged in said U-shaped door flange, a plurality of vertically spaced latch elements pivotally secured to said slidable latch bar, the edge of the cabinet contacted by the free edge of the door having an ⌐-shaped flange registering with said U-shaped door flange, said U-shaped latch bar, U-shaped door section and ⌐-shaped flange being provided with a series of aligned spaced slots adapted to receive said latch elements, a spring clip attached to the upper end of said latch bar for releasably maintaining said bar in an elevated position, whereby in a downward shifted position of said latch bar said latch elements rotate in a plane substantially parallel with the door and project through the aligned slots of said U-shaped latch bar, said U-shaped door section and said ⌐-shaped flange, said latch elements being forced to a retracted position upon the lifting of said latch bar, rubber buffers at the upper and lower end of said slidable bar to abut against the upper and the lower edge of the door when the slidable latch bar is shifted in its highest and lowest position.

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