

May 16, 1933.

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1,909,847

DRAWER LATCH FOR FILING CABINETS

Filed April 14, 1931

2 Sheets-Sheet 1

Fig. 2

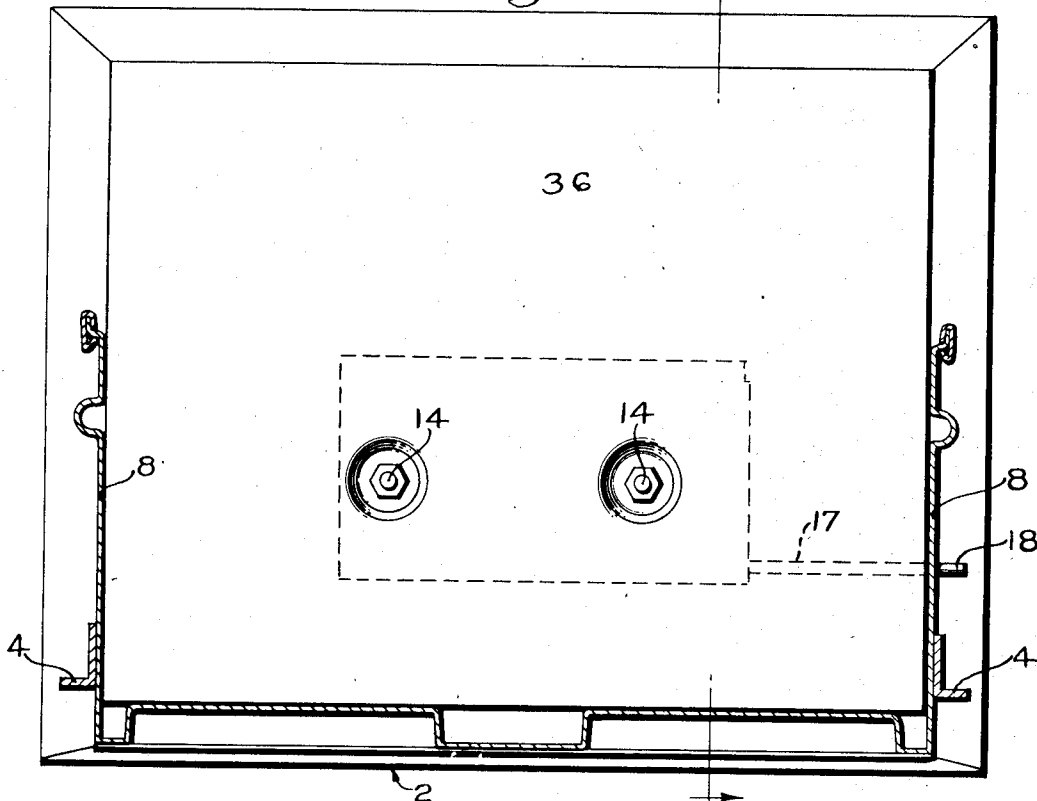


Fig. 1

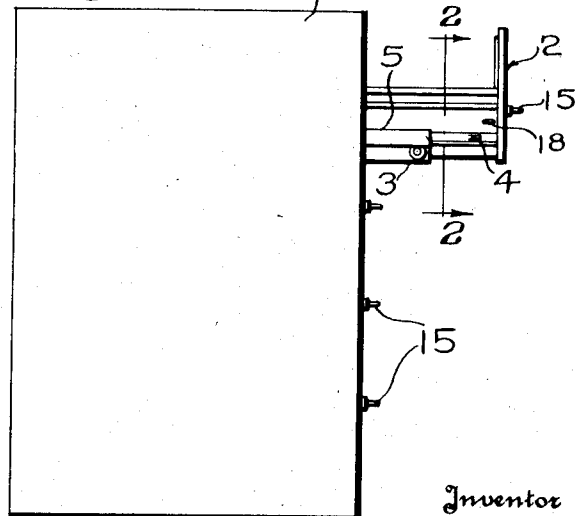
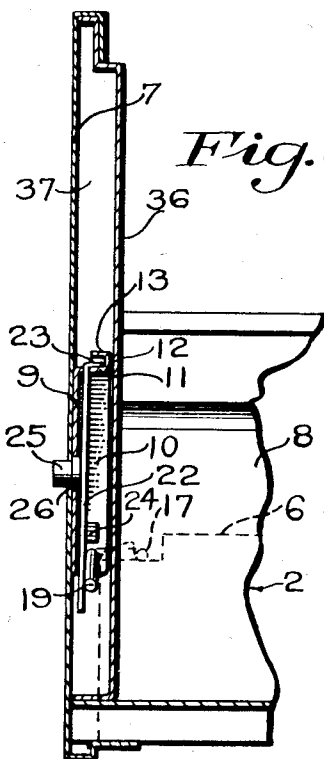


Fig. 3



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Fig. 4

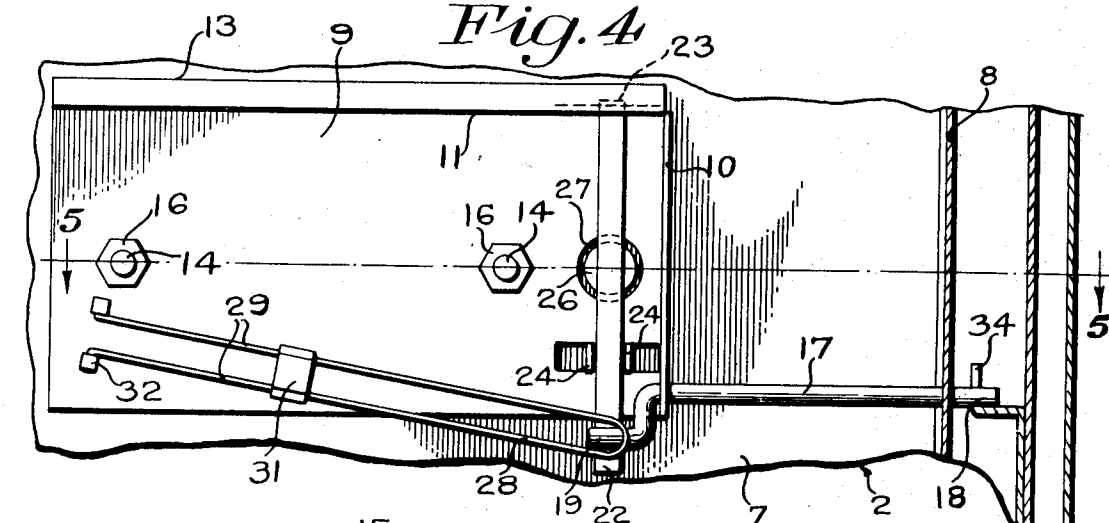


Fig. 5

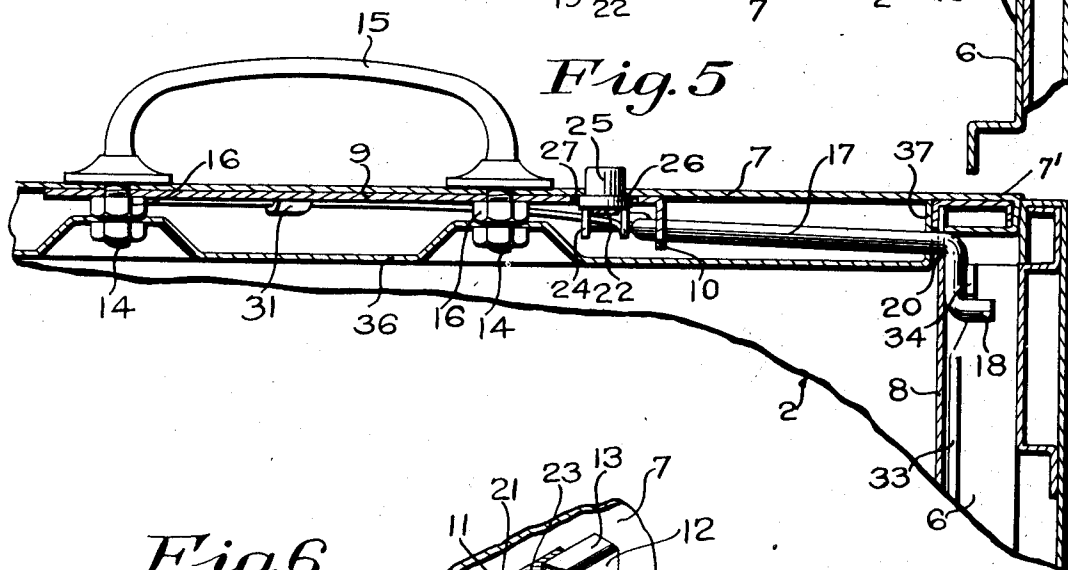
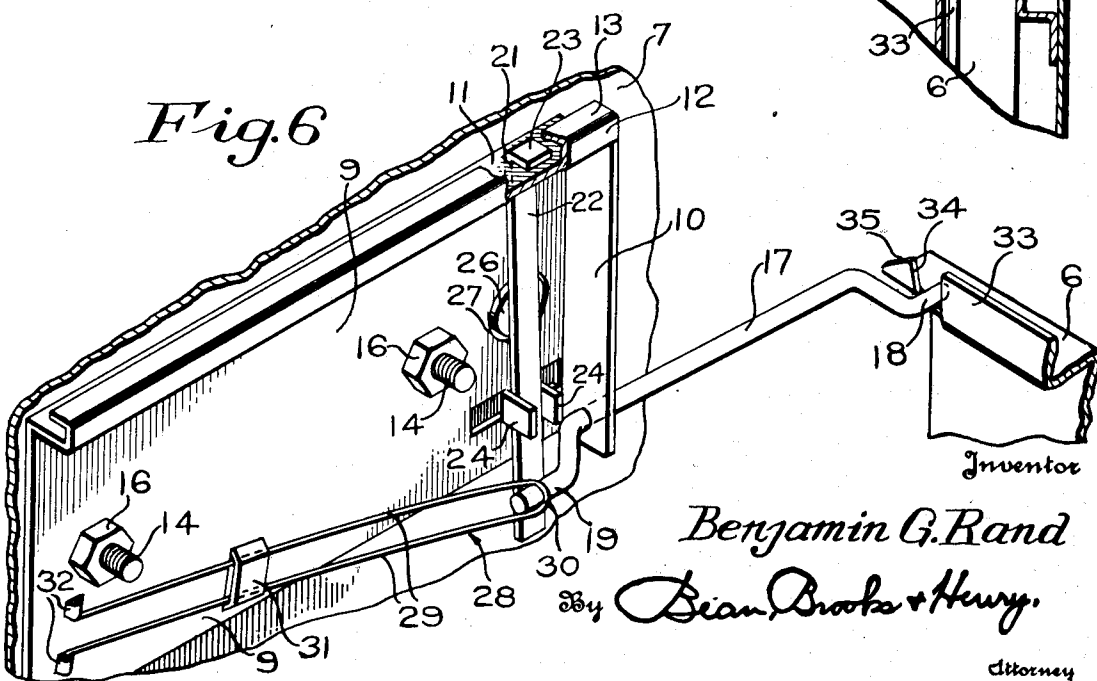


Fig. 6



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UNITED STATES PATENT OFFICE

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DRAWER LATCH FOR FILING CABINETS

Application filed April 14, 1931. Serial No. 530,107.

This invention relates to a drawer latch for filing cabinets and particularly to a latch construction mounted on the front wall of a drawer for releasably holding the drawer in closed position in the cabinet.

The invention comprehends a latch mechanism particularly adapted for use with filing cabinets having drawers in which a latch member on the drawer has locking cooperation with a stationary part mounted on the cabinet forming a part of the drawer supporting and guiding means, in order to secure better alignment of the cooperating parts of the latch mechanism so that the drawers will be uniformly locked in fully closed position. The invention thereby overcomes disadvantages in previous latch constructions having parts on the drawer engaging directly with portions of the cabinet in which slight variations in the structure of the drawer or cabinet result in inefficient operation of the latch in retaining the drawer in the proper closed position.

The invention provides a latch construction having a sheet metal supporting plate formed to provide a mounting for the latch member, to receive and mount a spring member for normally actuating the latch member in one direction, to support an actuating member having a suitable manually operated button or other means provided for operating the actuating member to move the latch into releasing position for unlocking the drawer, in which these parts are constructed and assembled in an extremely simple and economical manner to provide an efficient latch construction for mounting on the rear face of the drawer front by the same means that secures the drawer handle in place.

The drawings illustrate one embodiment of the invention, in which:

Fig. 1 is a side elevation of a file cabinet showing one drawer in a partially withdrawn position from the cabinet.

Fig. 2 is an enlarged vertical cross section through the drawer taken on line 2—2 of Fig. 1.

Fig. 3 is a vertical cross section through the front of the drawer taken on line 3—3 of Fig. 2.

Fig. 4 is an enlarged fragmentary section through the cabinet and drawer in closed locked position looking at the rear face of the drawer front, and showing the latch mechanism in elevation.

Fig. 5 is a sectional view taken substantially on line 5—5 of Fig. 4.

Fig. 6 shows the assembled latch mechanism in locking position with a fragment of the case slide and a fragment of the drawer front in perspective.

A file cabinet 1 is formed to receive a plurality of drawers, one drawer being indicated at 2 partially withdrawn from the cabinet and carried by drawer supporting and guiding means 3 usually including a drawer slide 4, an intermediate slide or carriage 5 and a case slide 6 of any well known type of construction.

The drawer 2 has the usual front wall 7 and side walls 8 suitably secured thereto by the formation of the forward edges of the side walls and the side edges of the front wall into channel shaped bead forming sections generally indicated at 7' in Fig. 5.

A latch supporting plate is formed of a piece of sheet metal having a body portion 9 and laterally extending flanges 10 and 11 projecting from an end and the top edge of said body portion, respectively. The flange 11 is provided with an upwardly extending angular portion 12 at its free edge terminating in a laterally extending lip 13 overlying flange 11 in spaced parallel relation. The body portion 9 is formed with a pair of spaced openings to receive threaded studs 14 on the ends of handle 15 extending through registering openings in the drawer front 7, so that upon the application of the nuts 16 to threaded studs 14 body portion 9 will be rigidly secured to the rear face of front wall 7 of the drawer.

A latch bar or rod 17 is provided with an offset end 18 forming a latch finger and an offset end 19 at the opposite end thereof in a plane at right angles to latch finger 18 as clearly shown in Fig. 6, forming a crank to rotate the rod for operating the latch finger. The portion of rod 17 adjacent the crank 19 extends through a bearing opening in flange 100

10, while the opposite end of the rod extends through a bearing opening 20, Fig. 5 formed in side wall 8 of the drawer. The flange 11 is provided with a slot 21 in the end portion
 5 adjacent flange 10 to receive one end of actuating member 22 in the form of an elongated metal strip having a lateral extension 23 resting on flange 11 so as to suspend member 22 for free swinging movement from flange
 10 11 relative to body portion 9. The opposite end portion of actuating member 22 engages with the offset end 19 of latch rod 17 as clearly shown in Figs. 3, 4, and 6. This opposite end portion of actuating member 22 is guided
 15 by a pair of guide projections 24 struck out of body portion 9 and extended laterally thereto in spaced parallel relation and in substantial alignment with slot 21 formed in flange 11.

20 A button 25 is engaged in an opening in front wall 7 of the drawer and normally projects forwardly from this front wall as shown in Fig. 5, an annular portion 26 of the button seating against the rear face of front wall 7
 25 around the opening and being engaged in an opening 27 in body portion 9 located intermediate flange 11 and guide projections 24 in position to engage actuating member 22. By depressing the button 25 to force it inwardly through the front wall of the drawer,
 30 the actuating member 22 is engaged and swung away from body portion 9 to operate offset crank projection 19 of latch rod 17 for rotating the latch rod in its bearings and
 35 moving latch finger 18 to an inoperative position.

A spring member 28 is formed of a length of wire doubled upon itself to provide spaced parallel portions 29 and a loop 30. The loop
 40 30 is engaged with the offset end 19 of latch rod 17 while the free ends of the wire extend through a strap projection 31 formed in body portion 9 by offsetting a section thereof as illustrated in Fig. 6, the terminals of portions 29 at the ends of the piece of wire extending beyond this strap projection 31 and
 45 having laterally extending portions at the free ends engaged in loops 32, Figs. 4 and 6, struck from body portion 9 in spaced aligned relation. These loops 32 are spaced from the strap projections 31 in the manner shown in Fig. 6, and firmly hold and support the
 50 spring member 28 in position so that the loop 30 engages the offset end 19 of the latch rod in all positions and normally acts to urge it toward the actuating member 22 and toward the body portion 9. This will normally force button 25 outwardly through drawer front 7 until the enlarged annular portion 26
 55 engages the rear face of wall 7 in the manner shown in Fig. 5 with the actuating member 22 seated against the rear end of button 25. This is the locked position of the parts as illustrated in Figs. 4, 5 and 6, in which latch
 60 finger 18 is resiliently held in position to

retain the drawer in closed position in the cabinet.

Case slide 6 shown in Figs. 4, 5 and 6 is rigidly secured to the inner structure of the filing cabinet in the usual manner well known
 70 in the art, so as to support the intermediate slide 5 and the drawer slide 4 mounted on the sides of the drawer, for supporting the drawer for free movement into and out of the cabinet. The case slide to be used with the
 75 present latch mechanism is provided with an upwardly extending flange 33 on the upper edge of the channel shaped body portion, formed at the forward end to provide a keeper 34 for receiving the offset latch finger 18
 80 on latch rod 17 when the drawer is in closed position to positively lock the drawer to the case slide and prevent its movement outwardly from the cabinet.

The flange 33 in advance of keeper 34 is
 85 formed with an inclined cam face 35 for engaging latch finger 18 and automatically rotating the latch member 17 so as to lift the latch finger against the tension of spring 28 in the closing movement of the drawer so that
 90 it will ride into keeper 34 automatically. The spring 28 normally operates latch member 17 so as to hold latch finger 18 in the position of Fig. 6 so that after this finger 18 rides upwardly over cam 35, the spring will
 95 force latch finger 18 to drop into the recess forming keeper 34 so that it will cooperate with the adjacent edge portions of flange 33 to prevent opening movement of the drawer until the latch mechanism has first been operated
 100 by depressing button 25. The depression of button 25 to move it rearwardly through the drawer front 7 will rotate latch rod 17 a sufficient amount to raise the finger 18 so that it will clear the portion of the flange 33 at
 105 the forward end of the case slide 6 when the drawer is to be opened.

A cover plate 36 formed with marginal flanges 37 as shown in Fig. 5 is applied to the drawer in the rear of front wall 7 to provide
 110 a cover for the latch mechanism in cooperation with the wall 7 by securing the plate 36 to the projecting ends of studs 14 in a manner illustrated in Fig. 5 to form a hollow housing portion at the front of the drawer
 115 containing the latch mechanism.

By mounting the latch mechanism within the housing between wall 7 and plate 36 with the latch member 17 extending outwardly beyond the side wall of the drawer with the finger 18 at the side of the drawer adjacent the front cooperating with the keeper provided on the case slide, greater uniformity in securing a proper relation between the keeper and the latch finger can be obtained for locking the drawer in fully closed position due to the direct support of the drawer by the case slide, than where the latch is provided with a finger adapted to engage part of the casing of the cabinet.
 120
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In the construction of file cabinets it is found that variations occur in the assembled relation of the various parts due to tolerances allowed in manufacture, frequently causing difficulty in properly aligning the parts of the latch mechanism for cooperation on both the drawer and the cabinet. By combining this latch structure with the structure of the supporting and guide members and particularly the case slide with which the drawer always has a constant alignment due to its support in the case slide, substantial advantages are obtained in the manufacture of cabinets provided with the latch structure of this invention due to this relationship by which the parts will uniformly cooperate to always secure the drawer in full closed position irrespective of the variations in the structure of the casing or frame of the cabinet.

What is claimed is:

1. The combination with a filing cabinet, a drawer for said cabinet, and drawer supporting and guiding means mounting said drawer for movement into and out of said cabinet including a case slide having a keeper on the front end portion, of a drawer carried latch mechanism having a manually operable latch member normally positioned for cooperation with said keeper to lock said drawer in closed position in the cabinet.

2. The combination in a filing cabinet, of a drawer, drawer supporting and guiding means mounting said drawer for movement into and out of said cabinet having a case slide mounted in the cabinet, said case slide having a flange portion formed to provide a keeper and a cam adjacent thereto, a spring actuated latch member on said drawer having an end portion normally projected to engage in said keeper and operable by said cam member in closing movement of said drawer to automatically move into engagement in said keeper and lock said drawer in closed position.

3. The combination in a filing cabinet, of a drawer, drawer supporting and guiding means at the sides of said drawer, mounting said drawer for movement into and out of said cabinet having a case slide mounted in the cabinet and formed to provide a keeper, a latch member formed of a rod having a portion rotatably mounted at the front of said drawer, one end of said portion projecting outwardly beyond a side of the drawer and having an offset latch finger for engaging said keeper, resilient means for normally rotating said rod to engage said finger with said keeper, and means for manually actuating said rod to disengage said finger from said keeper.

4. The combination in a filing cabinet, of a drawer having a front wall and side walls, drawer supporting and guiding means at the sides of said drawer mounting said drawer in the cabinet for movement into and out of

the cabinet having a case slide mounted in the cabinet formed with a keeper, a latch member formed of a rod having a portion extending transversely of the drawer and rotatably mounted on the rear side of said front wall with one end projecting outwardly beyond one side wall and having an offset latch finger for engaging said keeper to lock said drawer in closed position, resilient means normally urging said latch finger to engage said keeper, and manually operable means projecting through and mounted on said front wall for disengaging said latch finger from said keeper.

5. The combination in a filing cabinet, of a drawer having a front wall and side walls, drawer supporting and guiding means at the sides of said drawer mounting said drawer in the cabinet for movement into and out of the cabinet, a latch member formed of a rod having a portion extending transversely of the drawer and rotatably mounted on the rear side of said front wall with one end projecting outwardly from the drawer and formed with an offset latch finger for locking cooperation with a part carried by the cabinet in the closed position of the drawer, resilient means normally urging said latch finger into locking cooperation with said part, a button mounted in and projecting through said front wall, and means actuated by said button for operating said latch member to retract said finger from engagement with said part.

6. The combination in a filing cabinet, of a drawer having a front wall, a supporting plate having an upper re-entrant flange, a latch member mounted on said supporting plate having an end projecting beyond the drawer for locking cooperation with a part on the cabinet in the closed position of the drawer, resilient means on said supporting plate normally urging said latch into locking position, operating means having its end portion supported in the re-entrant flange of said supporting plate and manually operable to retract said latch from engagement with said part, a handle for said drawer, and means securing said handle to the front wall of said drawer cooperating with and securing said supporting plate to the rear side of said front wall.

7. The combination in a filing cabinet, of a drawer having a front wall, a supporting plate mounted on the rear face of said front wall, a latch member of crank arm type mounted on said supporting plate having an end projecting beyond the drawer for locking cooperation with a part on said cabinet in the closed position of the drawer, resilient means having a portion engaging about the crank arm latch member and normally urging said latch member into locking position, an actuating member mounted on said supporting plate operatively engaging said latch member, and manually operable means en-

gaging said actuating member and operable to release said latch member from engagement with said part.

8. A latch mechanism for the drawers of filing cabinets, comprising a supporting plate, a latch member formed of a rod rotatably mounted on said supporting plate and having offset opposite end portions, one of said end portions overlying said supporting plate and the other end portion forming a latch finger, an actuating bar loosely connected at one end to said supporting plate and having the opposite end portion engaging the first mentioned offset end of said latch member, manually operable means engaging the intermediate portion of said actuating bar for operating said bar and actuating said latch member into unlocking position, and resilient means normally operating said latch member into locking position.

9. A latch mechanism for filing cabinets, comprising a supporting plate having a pair of laterally extending flanges on adjacent edges, a latch member formed of a rod rotatable in one of said flanges and having offset opposite end portions, an actuating bar loosely mounted at one end on the other flange and having the opposite end engaging one of the offset portions of said latch member, resilient means secured to said plate and engaging the last-mentioned offset end of said latch member and normally rotating said latch member in one direction, and a button engaged in said supporting plate manually operable to engage and operate said actuating member to move said latch member in a direction opposite to that of the resilient means.

10. A latch mechanism for filing cabinets having a supporting plate comprising a piece of sheet metal having a flat body portion, a pair of laterally extending flanges, one of said flanges extending from an edge of the body portion adjacent to an edge provided with the other flange, a bearing opening formed in one of said flanges, a slot formed in the other flange, guide projections extending laterally from said body portion in spaced parallel relation to each other and aligned with said slot, spring mounting projections formed on the body portion of said plate, and means on said body portion for receiving attaching elements to mount said plate on a support.

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