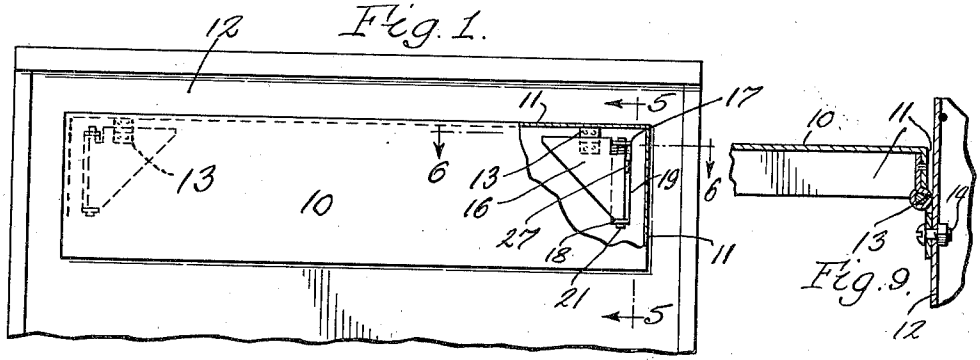
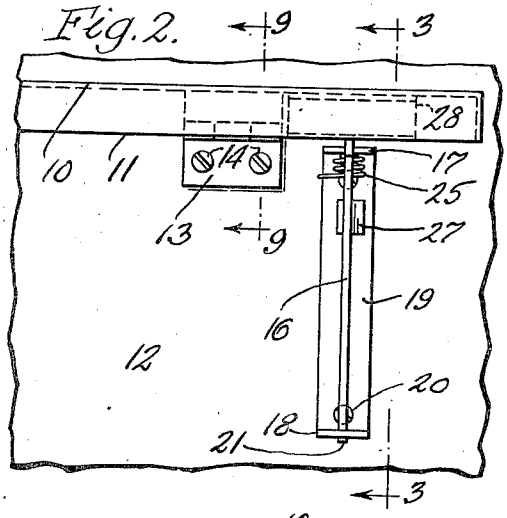
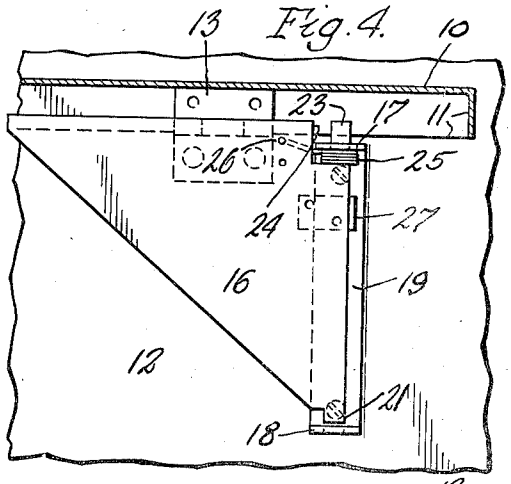
Aug. 29, 1939. J. R. JONES 2,170,799

DROP SHELF AND BRACKET

Filed April 4, 1938







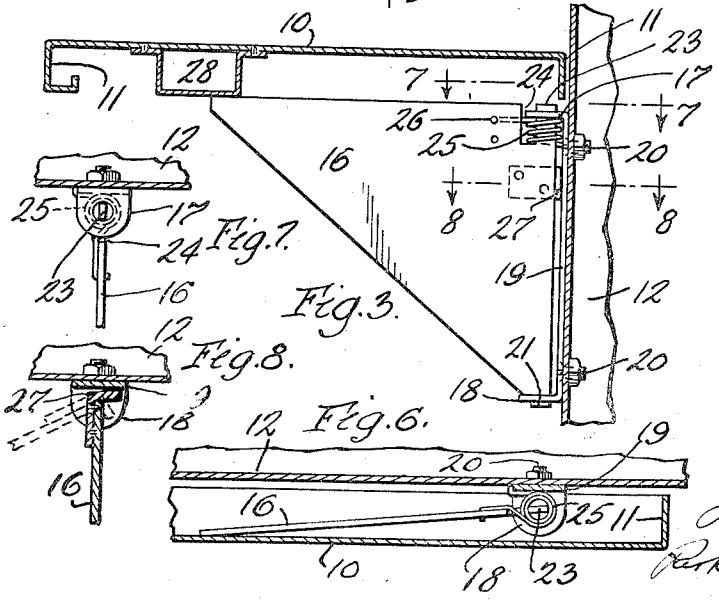


Fig. 7.

Fig. 3.

Fig. 8.

Fig. 6.

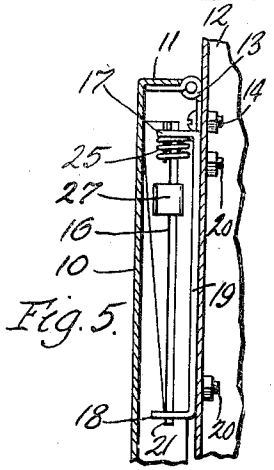


Fig. 5.

INVENTOR
James R. Jones
BY
Parker, Rochow & Farme
ATTORNEYS

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DROP SHELF AND BRACKET

James R. Jones, Jamestown, N. Y., assignor to Art Metal Construction Company, Jamestown, N. Y.

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2 Claims. (Cl. 211—93)

This invention relates to improvements in supporting brackets such as used with drop shelves and the like which are mounted to adapt the shelf to occupy an inoperative position close beside its support and to be moved to and supported in an operative position in which it projects out from the support. Such shelves may be provided, for example, on file cabinets or other articles of furniture with the shelf mounted so as to fold to a position against the front of the cabinet in which it will not project out therefrom to an objectionable extent, but is adapted to be raised and supported in an operative position in which it projects forwardly from the front of the cabinet. My improved bracket, however, is adapted for other uses.

One object of my invention is to provide a shelf-supporting bracket which is hidden behind the shelf in the folded position of the latter, and which, when the shelf is moved to its operative position, automatically moves to supporting position and supports the shelf.

Other objects are to provide in association with a drop shelf, a spring-actuated bracket which is hinged to fold toward its support to allow the shelf to drop, and to automatically swing beneath and support the shelf when the latter is raised for use; to provide a desirable spring-actuated bracket of simple and inexpensive construction which is removably hinged to its support so that the bracket can be quickly and easily mounted in position or removed; which is provided with a spring that acts both to swing the bracket from its folded to its supporting position, and also to prevent unintentional disengagement of the bracket from its support, while nevertheless allowing ready detachment of the bracket therefrom; and to provide supporting means having the other features of improvement and advantage hereinafter described and set forth in the claims.

In the accompanying drawing:

Fig. 1 is a front elevation of a drop shelf and a folding supporting bracket therefor embodying my invention, showing the same in folded or inoperative position on the front of a cabinet.

Fig. 2 is a fragmentary, front elevation thereof, on a larger scale, showing the position of the parts when the shelf is in its operative position.

Fig. 3 is a transverse, sectional elevation thereof on line 3—3, Fig. 2.

Fig. 4 is a longitudinal, sectional elevation showing the bracket shifted vertically relatively to its hinge support to permit detachment of the bracket.

Fig. 5 is a transverse, sectional elevation, enlarged, on line 5—5, Fig. 1, showing the folded positions of the bracket and shelf.

Fig. 6 is a sectional plan view, on an enlarged scale, on line 6—6, Fig. 1.

Figs. 7 and 8 are sectional plan views on lines 7—7 and 8—8 respectively, Fig. 3.

Fig. 9 is a section through the shelf hinge on line 9—9, Fig. 2.

Referring to the drawing, 10 represents a shelf which, as shown, consists of a sheet metal plate bent to form downturned stiffening and finishing flanges 11 at the side and end edges of the shelf, and is mounted on the front of a cabinet or other support 12, as by hinges, so that the shelf is adapted to be swung or moved from the position shown in Figs. 1 and 5, in which it hangs vertically against the front of the support 12 to an operative position in which it projects out forwardly from the support 12. 13 indicates one of the shelf hinges, of which two may be provided, one adjacent each end of the shelf. An ordinary flat-leaf hinge is shown having one leaf welded to the inner face of the rear flange of the shelf and the other leaf fastened by screw bolts 14 to the support 12. The shelf could be constructed and mounted to drop or fold in any other suitable way.

Mounted on the support 12, in a position beneath the shelf when the latter is in its operative position, is a shelf-supporting bracket 16. This bracket, as shown, is formed by a substantially triangular metal plate hinged at its upright, rear edge portion on upper and lower hinge lugs 17 and 18 projecting forwardly from the support 12. As shown, these hinge lugs are formed by the outbent upper and lower ends of a metal bar 19 which is stationarily secured, preferably by screw bolts 20, on the upright front wall of the support 12. A downwardly projecting pivot stud 21 formed at the lower end of the bracket 16 extends through a circular hole in the bottom lug 18, and a pivot stud 23 formed at the upper end of the bracket extends upwardly through a circular hole in the upper lug 17. The upper pivot stud is preferably formed by slotting the upper edge of the bracket at 24 and is longer than the bottom stud 21 so that when the bracket is in connection with its hinge lugs, it is adapted to be shifted upwardly in the pivot holes of the lugs until the bottom stud is disengaged from the bottom lug. The lower end of the bracket can then be moved laterally from over the bottom hinge lug and the bracket then lowered to disengage its upper stud from its hinge lug and thus

enable removal of the bracket from its support. This bracket with its pivot studs can be produced inexpensively by stamping from a flat metal sheet.

A coil spring 25 surrounds the upper pivot stud beneath the upper hinge lug, with one end of the spring wire hooked into a hole 26 in the bracket and its other end hooked over the edge of the bar 19. This spring, bearing at its opposite ends against the bottom of the slot 24 and against the upper hinge lug 17, acts to press the bracket downwardly and retain the lower pivot stud in the hole of the lower hinge lug, thereby preventing unintentional disengagement of the stud from the lug, but the spring can be compressed endwise by lifting the bracket to allow the disengagement of the bracket from its supporting hinge lugs, as before mentioned. In addition, with the spring arranged as shown and described, when the bracket 16 is swung from its outwardly projecting supporting position back toward the support 12, the spring will be strained or placed under tension, and when the bracket is released, the spring will swing the bracket from its folded position beside the support to its supporting position in which it projects outwardly from the support.

The bracket is provided with a stop 27 adapted to prevent the bracket from swinging beyond its operative position, substantially perpendicular to the face of the support 12. This stop is preferably formed by an L-shaped metal piece welded to one side of the rear portion of the bracket, with its rear end projecting laterally in rear of the rear edge of the bracket in position to strike the front of the hinge bar 19 when the bracket is in its outwardly projecting or supporting position, see Fig. 8, and thus prevent movement of the bracket by its spring 25 beyond this position.

Assuming the parts to be in the folded or inoperative position shown in Figs. 1 and 5, the shelf will hang down on its hinges close to the front face of the support 12, and by engaging the front end of the bracket 16, will hold the latter back in the position shown in Fig. 1. When it is desired to use the shelf, it is simply lifted or swung up from its hanging position to a horizontal, forwardly projecting position, and this movement of the shelf frees the bracket 16 and permits the same to be swung forwardly by its spring 25 into supporting position beneath the shelf so that the shelf will be supported by bearing on the upper end of the bracket. Preferably, a bearing piece 28 consisting of a U-shaped metal strip having end flanges welded on the underside of the shelf, projects downwardly from the shelf in position to bear upon the outer end portion of the bracket 16 when the latter is in its supporting position. This bearing piece is of such depth that when resting on the bracket 16, it will support the shelf horizontally, and when the shelf is folded, the bearing piece will rest against the front of the support 12 below the bracket and its hinge support, so that the shelf can hang down with its top or outer face vertical, parallel with the front of the support 12. One or more of the brackets 16 may be employed for supporting the shelf, two being shown adjacent opposite ends of the shelf.

I claim as my invention:

1. The combination with a hinged shelf, of a supporting bracket therefor provided at its inner end with upper and lower pivot studs, upper and lower stationary hinge lugs having holes in which said studs are movable axially and are also rotatable to allow the bracket to swing to and from an operative supporting position, one of said studs being sufficiently longer than the other to allow enough axial movement thereof in its hinge lug for disengagement of the other stud from its hinge lug, a spring which is coiled about said first mentioned stud and bears at opposite ends against said bracket and hinge lug, said spring yieldingly opposing such axial stud-disengaging movement of the bracket and also acting on said bracket to swing it to said operative position, and means comprising a part on said bracket and a fixed stop arranged to be engaged thereby to prevent the bracket from being swung by said spring beyond the shelf-supporting position.

2. The combination with a stationary support having upper and lower hinge lugs with vertical holes therethrough and a hinged shelf, of a supporting bracket for the shelf consisting of a flat metal plate shaped to form a downwardly projecting hinge stud at its lower inner corner, and a slot in its upper edge forming an upwardly projecting hinge stud at the upper inner corner of the bracket, said studs being axially movable and rotatable in the holes of said lower and upper lugs, and said upper stud being sufficiently longer than the lower stud to allow enough axial movement of the upper stud in its hinge lug to disengage the lower stud from its hinge lug, a spring which is coiled about said upper stud with its opposite ends engaging said bracket and said support and acting to swing the bracket to a shelf-supporting position projecting outwardly from said support, said spring also bearing at opposite ends against the bottom of said slot and the adjacent hinge lug and yieldingly opposing the axial disengaging movement of the bracket, and parts on said bracket and support arranged to engage to prevent the bracket from being swung by said spring beyond said shelf-supporting position.

JAMES R. JONES.