Aug. 26, 1958 P. L. MAGILL 2,849,123

DEMOUNTABLE EXPANDING SHELF

Filed April 30, 1954

Fig. 1

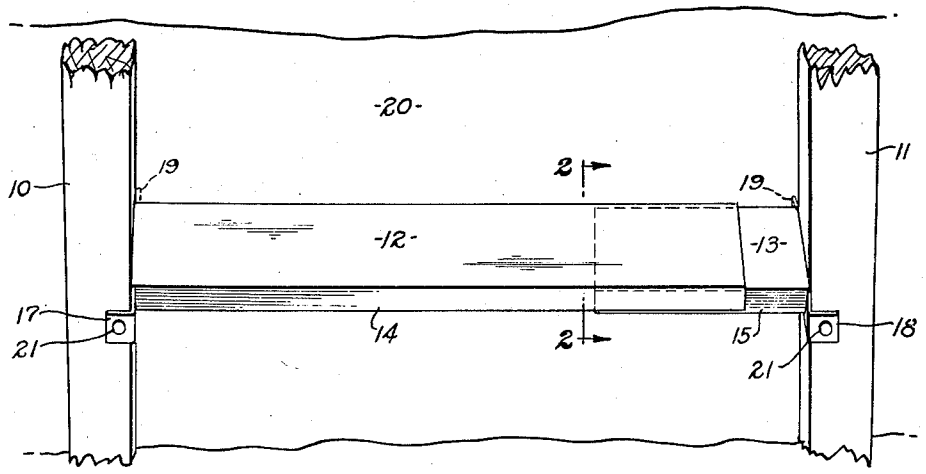



Fig. 1A

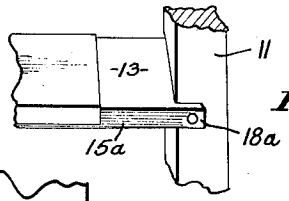



Fig. 2

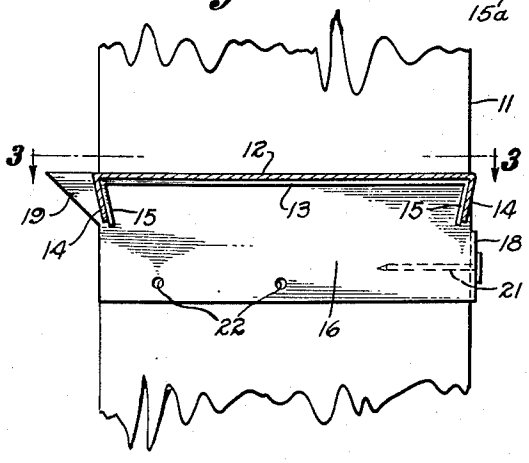



Fig. 3

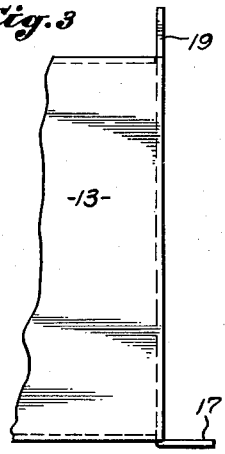



Fig. 4

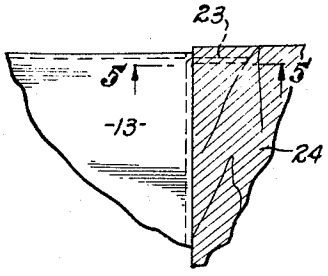
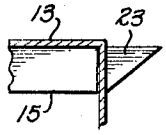



Fig. 5




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United States Patent Office 2,849,123 Patented Aug. 26, 1958



2,849,123

# DEMOUNTABLE EXPANDING SHELF

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Application April 30, 1954, Serial No. 426,647

9 Claims. (Cl. 211—90)

This invention relates to a shelf, and more particularly, to an expanding shelf which can be fitted readily into the space between the studding in a conventional framed wall. Still more particularly, the invention relates to an expanding shelf provided with fastening means for quick and easy attachment in the desired position by an unskilled person without special training or experience.

The invention is illustrated by drawings which show in Figure 1 a perspective view of the shelf as installed between studding in a wall. Figure 1*a* is a modified form of the shelf shown in Figure 1. Figure 2 shows a sectional view of the shelf taken thru 2—2 of Figure 1. Figure 3 is a plan view of one end of the shelf. Figure 4 is a plan view of the rear end of the shelf showing an alternative construction. Figure 5 is a front view of the alternative or modified construction shown in Figure 4.

The object of this invention is to provide a shelf which can be easily mounted by an unskilled person between the studs of an ordinary framed wall such as a garage wall, barn wall, attic or service porch or any convenient wall in which vertical studding is exposed on one side. The depth of the shelf is the same as that of the studding to which it is fastened, normally 3⅝ inches, although it can be placed between studs of greater depth than the depth of the shelf when the modification shown in Figures 4 and 5 is used. A particular object of the invention is to provide a convenient shelf which can be manufactured and sold at a low price, and attached and removed readily by an unskilled person. A further object of the invention is to provide a shelf which is rugged and of such strength to bear the weight of any material which would be normally placed on a shelf of this type.

A still further object of the invention is to provide a shelf which can be mounted with a minimum of attachment means such as nails, screws, or other devices.

Referring to the drawing Figure 1 shows the general construction of the shelf as it would be attached to upright studding members **10** and **11**. The shelf is formed of two telescoping parts **12** and **13**, most conveniently constructed of sheet metal, for example, sheet steel. The two parts **12** and **13** are made to fit together so that the inner part **13** slides snugly but freely within the outer part **12**, being held in place by the reverse angle of the aprons **14** and **15** as shown more clearly in Figure 2. If desired, the aprons may be dropped at an angle of 90° from the surface of the shelf and turned under at the lower edge to form a U-shaped sliding channel as is well-known in the art.

At the end of the shelf an apron **16** is provided preferably by bending down the metal extending from the surface of the shelf at a right angle. A portion of this apron or end plate **16** extending at the front of the shelf is bent outward at a right angle to form attaching wings or ears **17** and **18**. At the rear of the shelf a portion of the end plate **16** is allowed to extend rearward to form spur **19**, which is used to support the shelf at the back edge as will be hereinafter more fully described. Spur **19** and attaching ear **17** are shown more clearly in Figure 3 of the drawing.



The spur **19** may extend from any portion of the end plate **16**, but it is preferred that it be located at the top as shown in Figure 2 in order to better cooperate with the ear **17** in supporting the shelf in position. The end plate **16** can be formed separately, if desired, and attached to the shelf, as by riveting or spot-welding, in which case the end plate will preferably be of stiffer material than the body of the shelf.

The shelf may be made in varying lengths to suit different types of building construction. However, the usual spacing between studding is 14 to 16 inches, and accordingly, one length of shelf can be supplied to fit in most positions. The length of the shelf when collapsed should be somewhat less than the spacing between the studding. In mounting the shelf, the position desired should be first marked on the studding with horizontal marks on the inside of the studding at the proper level. The shelf is then expanded into the space and the ends brought even with the markings. The spurs **19** will then be in contact with the backing wall indicated by **20** in Figure 1. This wall is usually constructed of lumber, plasterboard, or other relatively soft material which can be penetrated by the spurs **19**. In this position the spurs are then driven into the backing material by tapping the front corners of the shelf with a hammer or other convenient heavy object, bringing the ears **17** and **18** in position against the faces of the studding **10** and **11**. Nails **21** can then be driven through holes provided in the ears **17** and **18** to hold them in position. No further means of attachment are necessary to support the shelf, inasmuch as the spurs **19** cannot move forward and become released from the backing material **20** into which they are driven, and the weight of materials placed on the shelf has the effect of forcing the spurs **19** still more deeply into the backing material because of the position of the ears **17** and **18** below the center line of the spurs **19**. If it is desired to make the mounting more permanent, however, additional nails can be driven through the end plates **16** into the studding through holes **22** conveniently provided for this purpose. This is usually not necessary and is undesirable from the standpoint of demountability. For the sake of appearance, the ears **17** and **18** may be provided with rounded corners and oval or round-headed screws may be used for making the attachment.

In the modification shown in Figures 4 and 5, the spurs **19** are extended longitudinally from the shelf as best shown in Figure 5 where spur **23** is formed by bending spur **19** at a right angle. In order to mount the shelf in this manner, the shelf is extended into the desired position between the studding, and the spurs **23** are driven from the underside of the shelf into the stud **24** as shown in Figure 4. The shelf is then secured by attaching the ears **17** and **18** as previously described.

In the construction of my shelf I may form the parts, particularly the ears **17** and **18** and the spurs **19** and **23**, in various ways. For example, the ears **17** and **18** can be formed from an extension of the front aprons **14** and **15**, while the spurs **19** and **23** can be formed from an extension of the rear apron in a corresponding manner. In the modification shown in Figures 4 and 5, this latter method of construction is preferred, in which case it is generally desirable that the shelf be slightly narrower than the depth of the studding in which it is installed. Figure 1*a* shows this modification in which the attaching ear, **18***a*, is formed from an extension of the front apron **13***a*.

Other modifications of my invention are contemplated. Thus, the spurs **19** and **23** may be of multiple design, i. e., instead of a single sharp-pointed spur, two or three sharp-pointed extensions or teeth may be provided for engaging the material in the back of the studding or the studding

itself. On account of the unusually firm attachment resulting from the use of the ears **17** and **18**, I find that the spurs or teeth provided at the rear edge of the shelf are adequate support for the load carried thereon. Spurs supporting the rear of the shelf may also be formed from the metal of the end plates **16** by punching or shearing in a manner well-known in the art, the spurs or "teeth" extending at the ends of the shelf to engage the studding to which it is mounted. When the shelf is fastened in position by nailing ears **17** and **18**, the teeth cannot retreat from the wood in which they have been embedded by hammering.

The shelf may be made of galvanized or cadmium-plated steel plate, sheet aluminum, or other attractive material requiring no finish. It may also be formed of pickled sheet steel, preferably cold rolled, to which an enamel or other suitable finish is applied in any desired color.

Altho I have described a preferred construction in which the mounting attachment, ears **17** and **18**, are located slightly below the shelf at the ends thereof, I may also locate the ears **17** and **18** in line with the front apron **14**, particularly in the modification shown in Figures 4 and 5.

Having thus described my invention, what I claim is:

1. An expanding shelf for easy attachment to the space between the open studding of a framed wall, which comprises two telescoping sections of sheet metal formed with aprons on the sides and ends to provide rigidity, said side aprons extending downwardly and inwardly, flattened ears extending longitudinally beyond the ends of the shelf, said ears being formed from extensions of the end aprons substantially in line with the front edge of the shelf and adapted to lie flat against the face of said studding and attach thereto, and supporting spurs extending rearwardly from the end aprons beyond the rear edge of the shelf suitable for driving into the sheathing to which the studding is attached.

2. The shelf of claim 1 wherein the supporting spurs are positioned on a line above the said ears to enhance their grip on the sheathing as the weight on the shelf is increased.

3. In an expanding demountable metal shelf for attachment between studs in an open framed wall wherein two sections of sheet metal are formed to telescope into each other with aprons at the sides extending downwardly and inwardly, facilitating fitting the shelf to the required space, the improvement comprising ears extended longitudinally beyond the ends of the shelf sections integral therewith and substantially in line with the front thereof in a position to lie flat against the face of the studs to which the shelf is attached, thereby to support the front edge of the shelf, vertically depending flanges on the outer ends of said sections, and spurs at the rear end of said vertical flanges to engage the relatively soft material to



which the shelf is attached, thereby providing a firm support for the rear edge of the shelf.

4. The shelf of claim 3 wherein the said spurs extend rearwardly of said shelf to engage the sheathing at the back of the said studding.

5. The shelf of claim 3 wherein the said spurs extend longitudinally of said shelf to engage the sides of the studding within which the shelf is located.

6. The shelf of claim 3 wherein the said spurs are formed from an extension of a rear apron of the shelf.

7. The shelf of claim 3 wherein the said spurs are formed from extensions of said flanges at the ends of the shelf.

8. A demountable, adjustable shelf for an open-studded wall, said shelf being provided with downwardly and inwardly extending aprons at the front and rear of two telescoping sections, a plate on the outer end of each section substantially perpendicular thereto, spurs extending from said plates adapted to be driven into the supporting wall, thereby to support the rear edge of said shelf and wings extending from said plates longitudinally beyond the ends of said shelf to support the front edge of said shelf, in position to over-lie the studding and provide a nailing face, on the exposed face of said studding.

9. A shelf suitable for attachment between open studding in a framed wall which comprises an outer section having a length less than the distance between the studs within which it is mounted, an inner section telescoping into one end of the outer section, aprons extending downwardly and inwardly from the front and rear edges of said sections to provide rigidity, flattened ears extending longitudinally beyond the outer ends of the shelf sections by which the shelf can be attached to the said studding, the said ears being extended in a position to lie flat against the face of said studding, and means for attaching the rear edges of said sections to said wall.

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