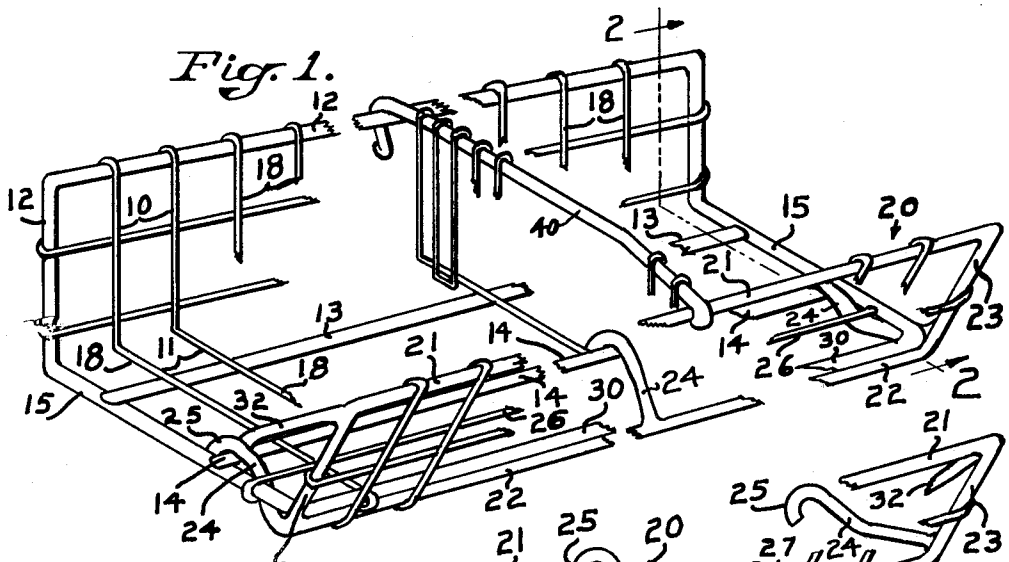
Aug. 25, 1964 S. CIBOROWSKI 3,145,850

STORE SHELVING HAVING A REMOVABLE FRONT

Filed Jan. 24, 1963

Fig. 1.



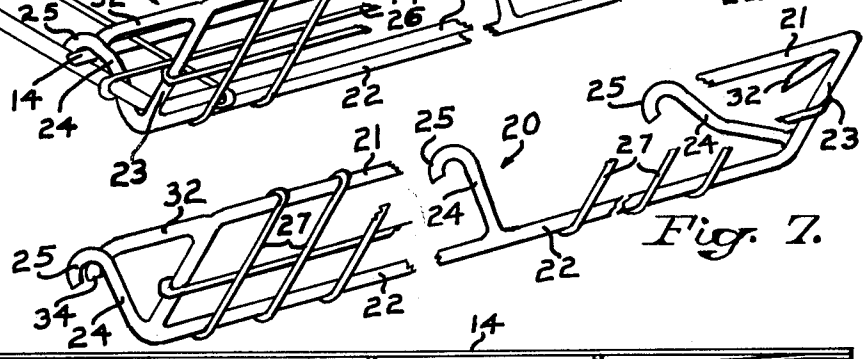


Fig. 7.

Fig. 6.

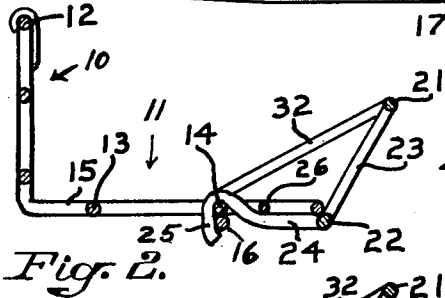


Fig. 2.

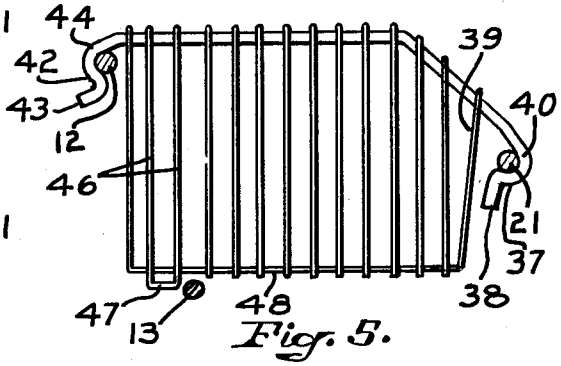


Fig. 5.

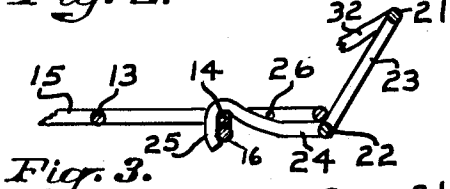


Fig. 3.

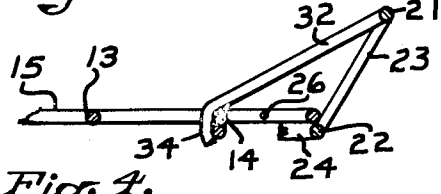


Fig. 4.

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STORE SHELVING HAVING A REMOVABLE FRONT

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6 Claims. (Cl. 211—126)

This invention relates to store fixtures and more particularly to a shelving and container for articles to be displayed and sold in a store.

The U.S. patent to Sides 2,868,391 of January 15, 1959, describes a bin type of container for use in a store, which is made of wire rods arranged to form a reticulated bottom, back and front which, with the aid of removable wire dividers, form separate bins for the storage and display of small articles. In that structure, the front and back are integral with the base or bottom portion and the parts can serve only as a bin for small goods. The front of the bin is high and so arranged as to require that a large or heavy article be lifted over that front for removal. On the other hand, there is a need for shelving having no obstruction in the front which permits the storage and ready removal of large-sized goods.

The primary object of this invention is to provide a shelving for a store which has a goods supporting wire base so arranged that goods of various sizes and shapes may be readily stored or removed by sliding them forward off the shelf and which comprises a removable front capable of forming a bin for small goods.

A further object is to provide a shelving having a back and a base portion permanently connected together and comprising a removable front which may be readily attached and rigidly held in place by a locking member to form a bin structure for holding small goods of various shapes and sizes.

A further object is to provide a shelf and bin structure having a removable divider or partition which serves to separate different classes of goods and is arranged to hold a removable front wall in proper position to form one or more bins, and which comprises a locking member which serves in the absence of the partition to hold the front wall rigidly in a bin forming position. Other objects will be readily apparent in the following disclosure.

Referring to the drawings illustrating the preferred embodiment of the invention:

FIG. 1 is a perspective view, with parts broken away, of a shelving which has a removable front wall and both a divider partition and a locking member which will hold that wall in a bin forming location;

FIG. 2 is a fragmentary section on the line 2—2 of FIG. 1 which shows both hooks in position;

FIG. 3 is a similar view in which a portion of the locking hook is broken away;

FIG. 4 is a similar view with the front positioning hook broken away to show the locking hook;

FIG. 5 is an elevation of the divider partition which aids in locking the bin front in position;

FIG. 6 is a front view of a reinforced shelving bottom; and

FIG. 7 is a fragmentary view of the front removed from the shelving.

The shelving, which may be made up in desired lengths, is preferably formed of wire rods of suitable dimensions. As is shown, the back **10** and the bottom **11** are perpendicular to each other or are preferably arranged at an angle slightly larger than 90 degrees. These two portions are integral and may be made of a heavy metal rod **12** bent to form both the top and the ends of the back and the ends and front of the shelf base, so that this framework is a continuous body. Two heavy rods or cross

struts **13** and **14** are welded to and connect the ends **15** of the frame and thus form a rigid bottom. If desired one or more of these cross members **13** or **14** may have a reinforcing structure as shown in FIG. 6, in which a lower rod brace **16** is spaced from the upper rod **14** and has connecting pieces **17** welded thereto to add to the rigidly of the shelf bottom. Smaller wires **18** of substantially L-shape are welded to the framework as shown in FIG. 1 to form a bottom and back member of sufficiently close spacing to hold the goods that are to be stored on the shelf. Other small wires, not shown, may be incorporated in the shelving bottom. These various rod members thus form a bottom and back which are rigidly integral and in the absence of any front member will serve as a shelving which may be suitably mounted on wall hangers or supported from the floor as desired. This shelving, as so far described, has no front which would interfere with the placement and removal of goods thereon. One of the longitudinal cross struts or rods forming a portion of the shelving bottom provides a locking member substantially parallel with the front edge of the shelf which serves, as will be explained, to lock a removable front into position.

In accordance with the primary object of this invention, I provide a removable front **20** (FIG. 7) which is so constructed that it may be hooked into position on the shelving bottom, where it serves as a substantially rigid front for a bin. This bin front is also preferably formed of wire rods of suitable dimensions. It may comprise the U-shaped heavy top rod **21** welded to a bottom rod **22** and shaped to form a rectangular or U-shaped frame. The ends **23** of the U-shaped portion project rearwardly to form the locating hook rod **24**. The latter has a hook **25** on its outer end arranged to hook over the intermediate bottom frame rod **14**. The positioning rod **24** passes beneath a longitudinal shelving rod **26** and then upwardly over and partly around the rod **14**. Intermediate wire members **27** are welded to the rods **21** and **22** of the front to provide further strength to resist the pressure of heavy canned goods, which may be stored in the bin. The hook arm **24** engages the rod **14** to close the inside of the shelf side **15**. The parts are so shaped that the bottom rod **22** of the bin front lies substantially in front of and close to the front rod portion **30** of the shelf frame. Several hook arms **24** may be used.

In order to hold the removable bin front in its upright position I provide several, and at least a pair of, locking arms **32** which are integral with the cross rod **21** and the end member **23** of the bin front. These rods **32** have hooks **34** on their outer ends which are shaped, as shown in FIG. 4, to be sprung into position over the cross rod or strut **14** and thus lock the bin front in its upright position. That is, the two hooks **25** and **34** are each locked over the cross rod **14** of the shelf bottom, and since the arms **24** are beneath the rod **26** of the shelf bottom, the bin front is sprung into its upright position by forcing the hook **34** into place by springing the resilient wire rod **32**. The hooks are so shaped that the pressure of goods against the bin front draws them tighter into position, and prevents the bin front from falling out of place.

If divider partitions are to be used, these further strengthen the structure and supplement the hook arms above described in holding the bin front in postion. Each divider partition may comprise a top heavy rod **40** shaped substantially as shown in FIG. 5 which is bent at its two ends as shown. This partition has vertical rods **46** welded to the top rod and a bottom rod **48** and suitably spaced to hold goods in place. The top rod of the frame is bent at its right and lower end to form a short horizontal portion **37** and a vertical depending end **38**. The latter

is spaced from the substantially vertical end rod **39** of the partition so that the top rod **21** of the bin front will pass through the space between the members **38** and **39** and thus provide for the bin front top rod **21** to fit into the angle thus formed in the rod **40**.

The lefthand end of the rod **40** is shaped as shown in FIG. 5 to provide an S-shaped loop **42** having an outwardly projecting end **43** and a curved portion **44**. These parts are so shaped that when the front of the partition has been hooked over the top rod **21** of the bin front, the back of the shelving may be sprung forward enough to permit the top rod **12** of the shelving back to slip into place into the hook shaped recess **44** of the partition. Two of the vertical wires **46** near the rear of the partition may have loops **47** projecting downwardly beneath the bottom rod **48** of the partition, and these loops are so shaped and located that they may engage or fit between cross wires of the bottom to aid in positioning the partition.

In accordance with this invention, I have provided a horizontal shelving of metal wire or other suitable material which has no obstruction at its forward edge and thus permits the ready sliding of large or heavy objects directly onto the shelf. The back of the shelf may be formed by a vertical wall against which the shelving is located; but in order that the shelving may be placed near a store aisle, it is preferred that it have a back, as shown in FIG. 1, formed integral with the bottom or base portion. The shelving is readily converted to a bin by applying thereto the removable front **20** and locking the latter securely in position. The shapes and locations of the hooks may be variously arranged, provided they served the desired purpose of holding the front rigidly in place. As shown, the hook end **25** positions the frame and the hook end **34** serves to prevent the front from tipping forward, so that the two hooks cooperate to hold the bin front rigidly in position. The divider partition shown in FIG. 5 need not be used, except where it it desired to form several bin compartments. If used, it aids in making the structure rigid.

It will now be apparent that various modifications may be made in the shelving; hence, the figures and the description thereof are to be interpreted as setting forth a preferred embodiment of the invention, and not as imposing limitations on the appended claims.

I claim:

1. A shelving comprising a horizontal bottom which is unobstructed at its front edge and has a locking member substantially parallel with said edge and a separate removable frame shaped to form with said bottom a bin front for holding various types of articles, said frame having a hook cooperating with said member which locks the frame in an upright position.

2. A shelving according to claim 1 which has an upright rear wall and a bottom integral therewith, said bottom having a longitudinally extending wire rod serving as said locking member which is engaged by a hook of the frame.

3. A shelving according to claim 2 in which the frame has rearwardly extending arms provided with hook ends engaging said rod and serving to hold the front rigidly in place.

4. A shelving according to claim 2 in which the frame has top and bottom rods, a positioning hook member projecting rearwardly from the bottom rod and a hook member projecting rearwardly and downwardly from the top rod, each of the hooks on said members engaging said locking members on the shelving.

5. A shelving according to claim 2 comprising removable bin forming partitions, each having hooks engaging both the rear wall and the removable front which aid in holding the front in position.

6. A shelving comprising a rear wall rigid with a horizontal bottom which is unobstructed at its front edge and has a locking member substantially parallel with said edge and a separate removable frame shaped to form with said bottom a bin front for holding various types of articles, and a removable bin forming partition having front and rear hooks engaging said rear wall and frame which locks the frame in an upright position.

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