DISPLAY RACK OR STAND

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2 Sheets-Sheet 1

Fig. 1

Fig. 2

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My invention relates to improvements in racks or stands which are appropriately, though not exclusively, adapted to hold and display loaves of bread.

An important general object of the invention is to provide a stand or rack suitable for the above purpose, which can be made from few parts so arranged and connected as to permit folding or collapsing of the stand to compact size and form for packing, shipment, and storage when not in use, and unfolding to extended position to place the parts in proper relative positions to receive and display articles of merchandise, the parts being collectively moveable to either of said positions by a single operation.

In connection with the above it is also an object of the invention to provide a construction and arrangement of parts facilitating the assembling thereof, as hereinafter pointed out.

Another important object is to provide a shelf which is particularly designed to facilitate positioning loaves of bread thereon in an orderly arrangement from which they will not be easily displaced accidentally, and to also provide an auxiliary frame to cooperate with the construction of the shelf in accomplishing this purpose.

Other objects and advantages of the invention will be pointed out hereinafter in connection with the detailed description of the accompanying drawings wherein is shown a preferred embodiment of the invention, and in which

Fig. 1 is a perspective view of a stand or rack embodying the invention and in extended position;

Fig. 2 is a sectional view on the line 2—2 of Fig. 1; and

Fig. 3 is a side elevation showing the stand or rack partially folded.

Referring to the drawings, the numeral 5 designates the legs or upright supports which are preferably constructed of strips of sheet metal, there being two back legs and two front legs connected respectively by the strips 6 adjacent their lower ends and just above the casters 7 on which the stand may be mounted for convenience in moving it about. The strips 6 preferably have their ends 8 bent to engage the outer face of the legs 5, and braces or struts 9 have their lower ends positioned in face to face relation with the ends 8 of the strip 6 so that a single rivet or bolt 10 may be passed through the braces 9, ends 8, and legs 5, to connect the same together, the strips 6 and legs 8 being rigidly connected due to the manner in which the ends of the strips embrace the leg, but the braces 9 being pivotally connected on the rivet or bolts 10 for a reason hereinafter pointed out. The structure is braced by struts 11 which extend diagonally between the strip 6 and legs 5 being secured to each by rivets or screws 12.

A rectangular frame 13, preferably made from a strip of sheet metal is pivotally secured to each of the legs 5, as by rivets or screws 14, which extend through the legs 5 and through the frame adjacent its corners which are disposed adjacent the legs 5. The ends of the frame 13 receive a screw 15 at a point where openings 16 (Fig. 3) in struts or braces 9 register or coincide when the braces are swung toward each other on pivots 10 so that the screw may be disposed through the opening 16 and a wing nut 17 may be applied thereto to rigidly clamp the struts or braces 9 to the frame 13 as shown in Fig. 1 to hold the stand or rack in extended position.

Referring particularly to Fig. 2, it will be noted that the frame 13 supports a shelf 18, the front and back edges of which are bent as indicated at 19 to engage over and around the opposite front and back arms of the frame. The ends of the shelf are shown as being disposed within the ends of the frame 13 and the shelf is preferably constructed of a sheet of sheet metal stamped or otherwise formed to provide a corrugated or troughed surface having troughs 20 formed by the downwardly and rearwardly inclined surfaces 21 and the relatively short surfaces 22 at substantially right angles to the surfaces 21. The bottoms of the troughs are below the ends of frame 13. Any number of such troughs may be provided, but when the stand is to be used for supporting loaves
of bread, it is preferable to have the portions 21 substantially equal in width to the width of a standard sized loaf of bread. It will also be noted in Fig. 2 that a brace 22 is secured to the ends of the frame 13, as by a rivet or screw 24, and engaging the lower surface of the shelf 18 to prevent sagging. The brace 22 may be a rod or strip extending all the way across the stand below the shelf or it may be in the nature of a pair of angle members one secured to each of the ends of the frame 13 and extending toward each other a sufficient distance to prevent the shelf from sagging when loaded with merchandise.

Referring to Fig. 1, it will be readily apparent that the purpose of the troughs 20 and the inclination of the surface 21 is to receive the end or side of a loaf of bread and to place the same in an inclined position such that the center of gravity of the loaf will be disposed to the rear making it difficult for the loaves to topple from the shelves from the open front of the frame. To maintain the bread in the inclined position shown, I provide an auxiliary frame 25 comprising a U-shaped strip of sheet metal having its arms 26 pivotally secured to the legs 5 as by rivets or screws 27 and having the connecting arm 26' extending between the rear legs or supports 5. The location of the frame 25 with respect to the shelf 18 is such that arm 26' is substantially in alignment with the rearmost portion 22 of the shelf 18, that is, located substantially at a point in a line at right angles to the plane of the portions 21 when the stand is in extended position so that substantially the entire surface of the end of the loaf of bread will be disposed flatly against the portion 21 while the rear of the loaf will be disposed against the portion 22 of the shelf and arm 27 of the frame 25. Thus the loaves of bread may be conveniently and quickly arranged in an orderly and attractive manner for display and vending, it being apparent that the storekeeper need exercise little care in placing the loaves on the shelf, as the shelf and frame 25 are constructed and arranged to readily facilitate neatly placing the loaves at an angle, such as described above, from which they will not be easily displaced when removing loaves when making sales or in the event the stand receives an accidental jar. It should be apparent that loaves of bread placed in the intermediate trough will rest against the loaves of bread in the rearmost trough at substantially the same angle of inclination and that loaves of bread in the front trough will rest against those in the intermediate trough in the same manner. It may be desirable sometimes to place the loaves on their side, that is, longitudinally of the shelf, and in such event the construction of the shelf and the short portion 22 and ends of frame 13 will facilitate placing the loaves and prevent accidental displacement.

While I have described the foregoing phase of the invention in connection with one shelf, as it is perfectly apparent that the stand may be constructed with only one shelf, it is preferable to have the stand constructed with several shelves to accommodate more loaves of bread. However, it is deemed unnecessary to describe the construction and arrangement of the other shelves and auxiliary frames in detail as they are identical with the shelf 18 and frame 27 already described and are connected to the supports 5 in the same manner at predetermined intervals.

It has been mentioned that the shelves and the frames 25 are pivotally connected to the legs or supports 5 and it will be understood that the purpose of this is to provide for the collapsing or folding of the stand to a compact size and form for packing, shipment, and storage when not in use. This feature of the invention is clearly illustrated in Fig. 3 where the stand is shown in extended position in dotted lines and in partly collapsed position in full lines. Referring to Fig. 3, it will be noted that when the wing nut 17 is removed from the screw 15 and the upper ends of the struts 9 are removed from engagement with the screw 15, that the stand may be collapsed or folded by holding one of the rear legs and lifting upwardly on the front legs, or by pressing down on the rear of one of the shelves 18 and lifting up on the front of the same or another shelf as all of the shelves and frames 27 being the same in construction and being connected to the legs at corresponding points force exerted on any part at the front of the frame in such a manner as to lift the front legs up and back toward the rear legs will move all of the shelves 18 and frames 27 collectively and in unison on their pivots 14 and 27 respectively. It will be apparent from Fig. 3 that the stand may be still further collapsed until it is approximately a flat structure with the front legs abutting the back legs simply by moving the front legs further to the right. It will also be seen that the struts or braces 9 can be swung in on their pivots until parallel with and disposed over the legs 5 to which they are connected.

I wish to call attention again to the manner of connecting or mounting the shelves 18 on the frames 13, that is, by bending the front end and back edges of the shelf to engage around and under the frame because this connection not only facilitates the assembly of the stand or rack and dispenses with auxiliary fastening elements, but also positively prevents displacement of the shelves from the frames when folding or unfolding the stand and when the stand is in use. Such connection is not only economical but is also quite effective for the reasons above pointed out. Further-
more the corrugated character of the shelf is important when assembling the parts because it enables them to be readily connected to the frame 13 by placing one of the bent edges 19 over one of the arms of the frame and then pulling on the shelf until the other bent edge can engage over the opposite arm, it being apparent that the corrugated nature of the shelf permits the same to be stretched in the direction of pull sufficiently to engage said second edge of the shelf over the frame after which the resiliency of the material maintains it in position on the frame.

From the foregoing it should be apparent that the stand or rack is collapsed or folded at the factory after it has been assembled in the manner described, and is shipped in a relatively compact container which is easily handled to the place where it is to be used.

The purchaser or user simply opens the crate or carton, and after removing the rack stands it on its rear legs and holding any portion of any part at the rear of the structure, pulls downwardly and outwardly on either the front legs or a front portion of one of the shelves until the front legs touch the floor. He then swings the struts or braces 9 on their pivots 10 until the openings 16 register and then inserts the screw 15 through the frame 13 and the openings 16 and applies the wing nuts 17. The stand is then in the position shown in Fig. 1 and ready for use.

I wish it to be understood that while I have described the stand or rack embodying the invention as shown in the drawings to be constructed of sheet metal, various materials can be used, and that although I have described the frames 27 as being of single piece of metal bent to the proportions and shape shown and described, that it is perfectly possible to have the side arms 26 formed by straight rod links and to have the arm 27 formed by a strip rigidly secured to the back legs. The same is true of the frame 13 as the ends or sides of the frame may be links pivotally connected to the legs and the front and back arms may be separate members rigidly secured to the legs.

What I claim is:
1. A rack or stand of the character described comprising front and back legs arranged at opposite sides of the rack or stand and connected in respective front and back pairs, a frame pivotally connected at its sides to each of the legs and pivotally connecting the respective pairs whereby one of said pair of legs can be folded against the other pair of said legs, the front and back arms of said frame extending between the sides thereof in substantial alinement, a shelf having flanges at its front and back edges for engagement against the outer faces of the front and back arms of the frame, said shelf being formed with inclined troughs arranged substantially parallel to the flanges to receive articles,

and a second frame pivotally connected to said legs above said first frame and having arms across the sides and back of the frame between the legs.

2. A rack or stand of the character described comprising front and back legs arranged at opposite sides of the rack or stand and connected in respective front and back pairs, a frame pivotally connected at its sides to each of the legs and pivotally connecting the respective pairs whereby one of said pair of legs can be folded against the other pair of said legs, the front and back arms of said frame extending between the sides of the frame, a shelf having flanges at its front and back edges for engagement against the outer faces of the front and back arms of the frame, said shelf being provided with troughs substantially parallel to the flanges to receive articles and permitting the shelf to be stretched to facilitate engagement of said flanges over said arms, a second frame pivotally secured to the legs and having an arm extending between the pair of back legs above said shelf, said arm constituting a rest for articles disposed in the rearmost trough of the shelf.

3. A rack or stand according to claim 1 in which the troughs in the shelf are inclined downwardly and rearwardly from the front of the stand and the back walls extending upwardly from the base of the troughs, and the arm of the second frame between the rear back legs is located substantially in the same plane as the back wall of the rearmost trough.

Signed at Dayton, in the county of Montgomery and State of Ohio, this 27th day of January A. D. 1932.

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