

Dec. 14, 1965

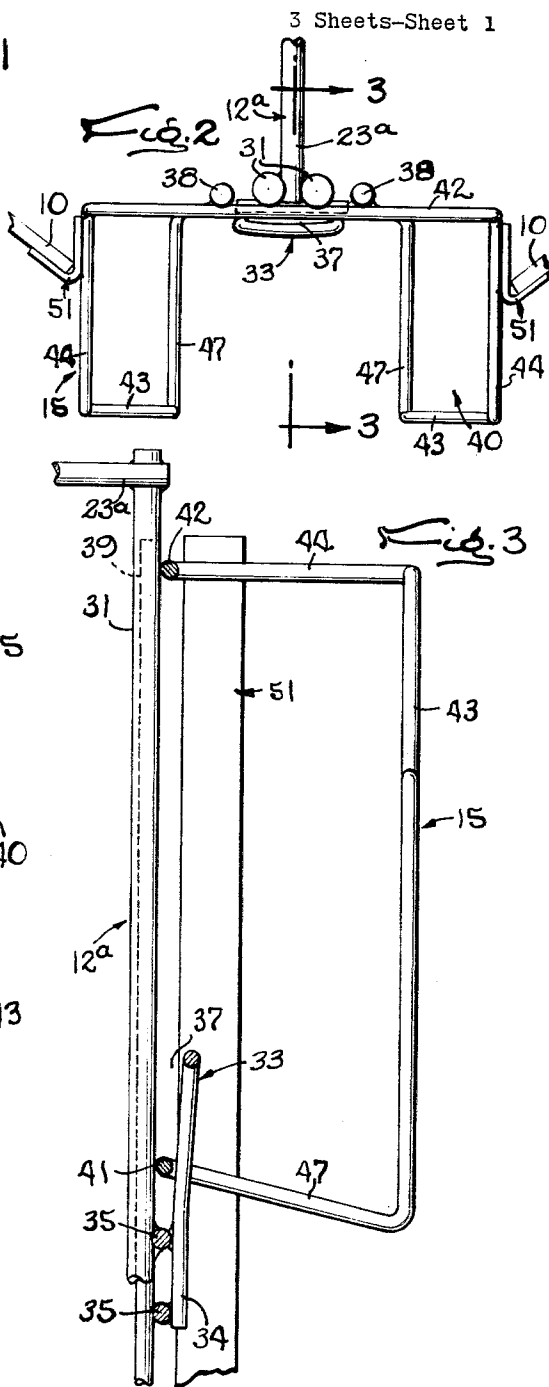
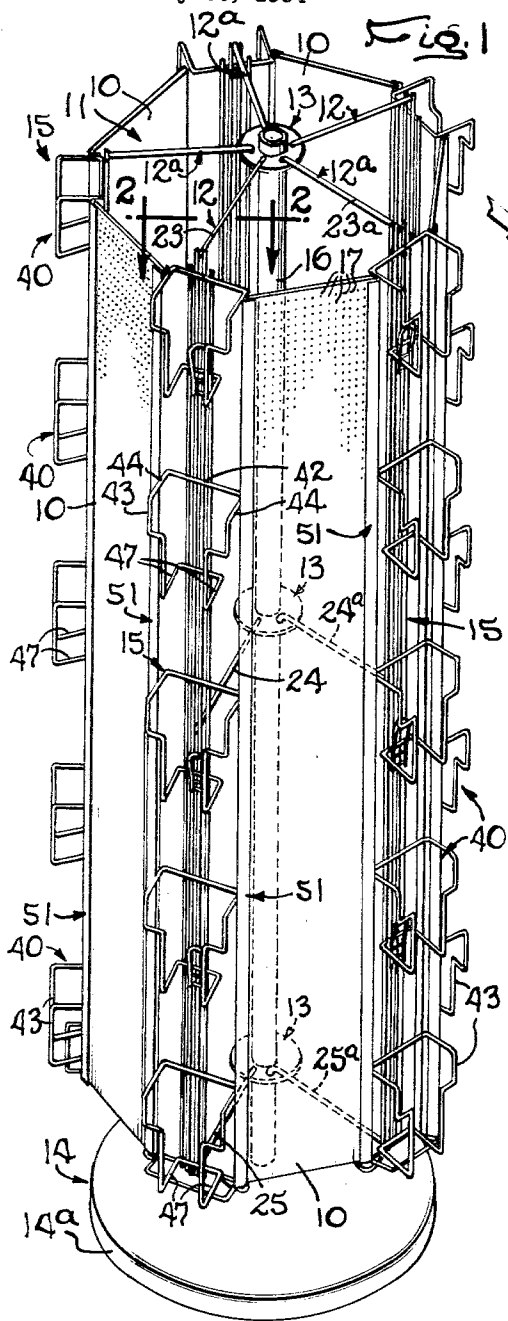
T. M. BLEED

3,223,247

REVOLVING DISPLAY RACK

Filed July 30, 1964

3 Sheets-Sheet 1



INVENTOR
Theodore M. Bleed
By Welfe, Hubbard, Tait & Brown
ATTORNEYS

Dec. 14, 1965

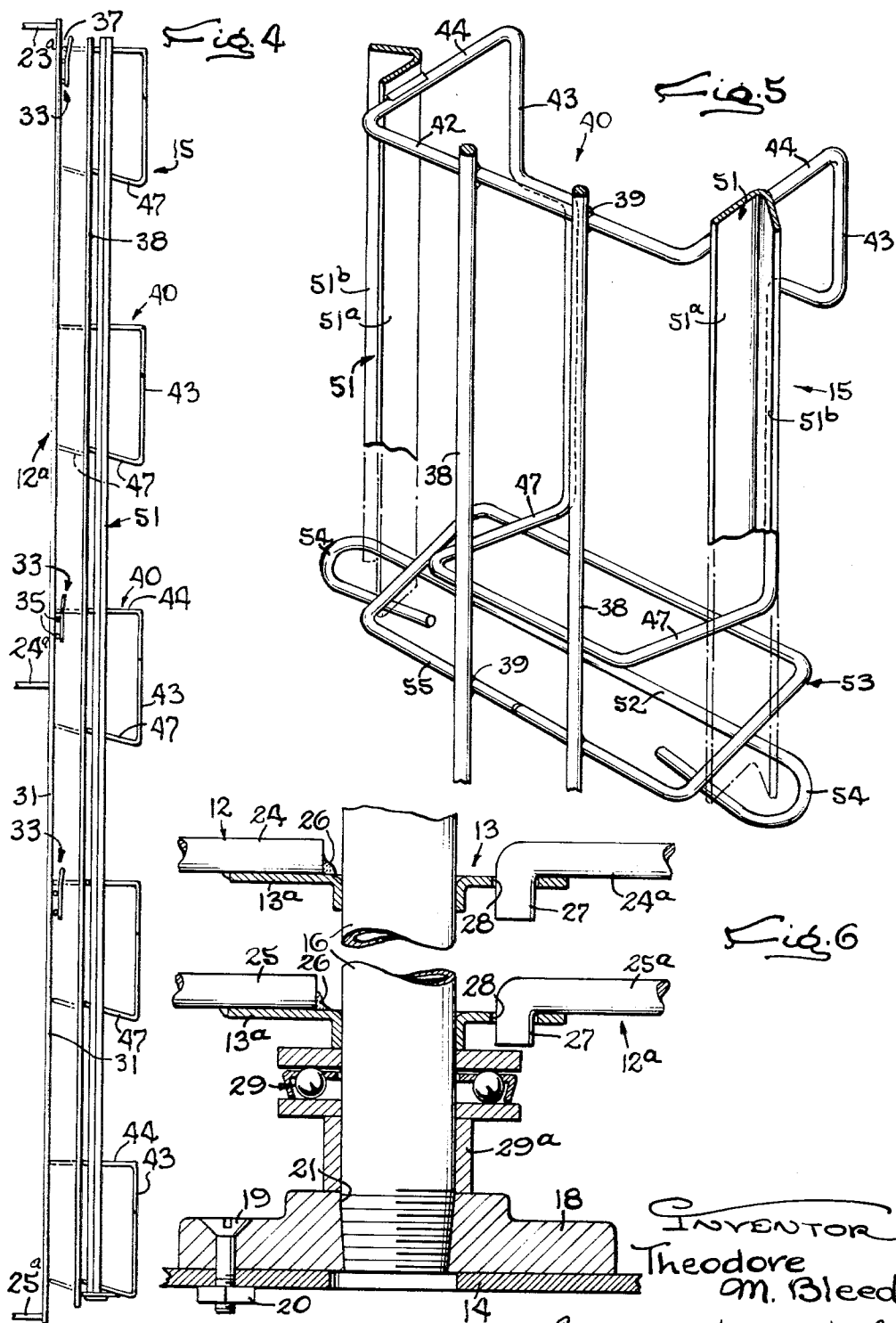
T. M. BLEED

3,223,247

REVOLVING DISPLAY RACK

Filed July 30, 1964

3 Sheets-Sheet 2



INVENTOR
Theodore
M. Bleed
By Wolfe, Hubbard, Vint & Osborn
ATTORNEYS

Dec. 14, 1965

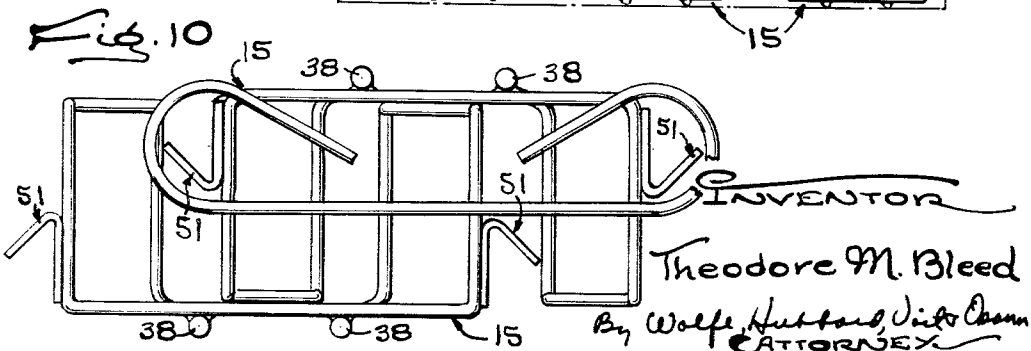
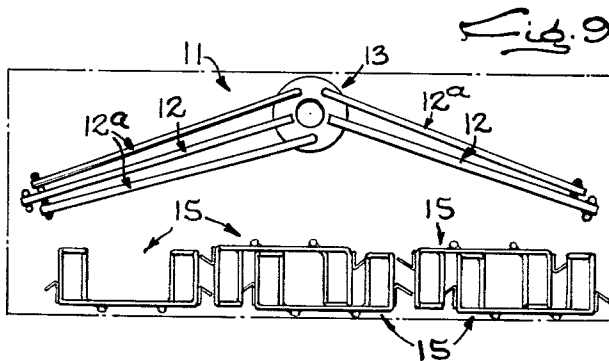
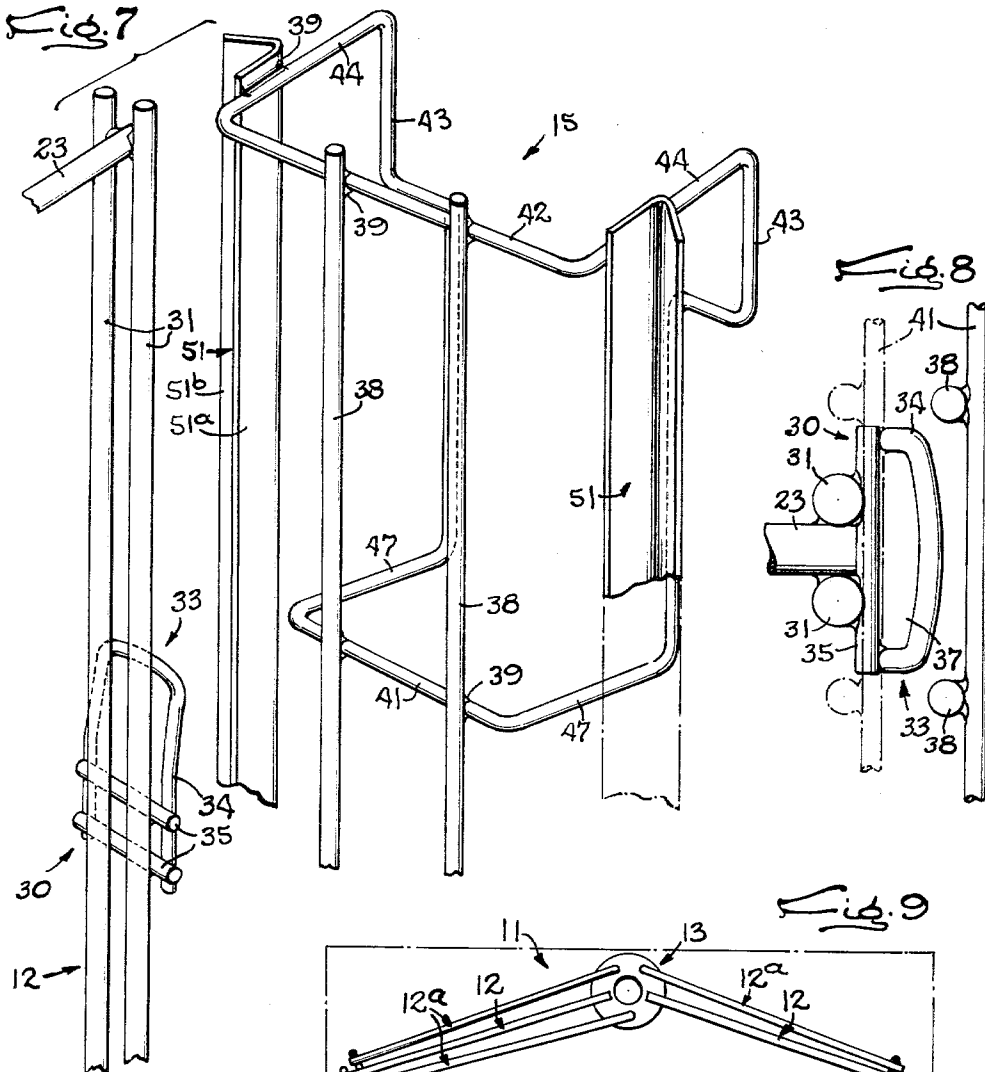
T. M. BLEED

3,223,247

REVOLVING DISPLAY RACK

Filed July 30, 1964

3 Sheets-Sheet 3



1

3,223,247

REVOLVING DISPLAY RACK

Theodore M. Bleed, Rockford, Ill., assignor to Commercial Wire Products Co., Rockford, Ill., a corporation of Illinois

Filed July 30, 1964, Ser. No. 386,252

10 Claims. (Cl. 211-163)

The present invention relates generally to a revolving display rack which is adapted to stand on the floor of a salesroom and having a series of article-supporting panels which are disposed in angularly spaced relation and brought into view by revolving the rack about an upright axis. More particularly, this invention relates to a revolving rack of the type shown in Patent No. 3,092,258 in which rack frame includes a series of upright wings collapsible into a relatively flat package for low cost shipment and each display panel is disposed between the adjacent wings.

The primary object of the invention is to incorporate in a rack of the above character a series of upright pocket assemblies disposed between and rigidly joining the adjacent edges of adjacent panels while being detachable from the rack frame for compact packaging therewith for shipment.

Another object of the invention is to provide a detachable pocket assembly which can be nested with similar pocket assemblies to form compact units which further facilitate low cost storage and shipment of the rack.

Still another object of the invention is to provide a rack of the type described which permits convenient and fool-proof assembly at the point of use simply by expanding the wings of the frame, mounting the pocket assemblies on the outer edges of the wings, and inserting the panels into channels formed on the pocket assemblies.

A further object is to provide such a display rack in which the pockets form the cross connection between adjacent channels which receive the opposed edges of adjacent display panels and thereby unite the same into a right truss structure.

Other objects and advantages of the invention will become apparent from the following detailed description taken in connection with the accompanying drawings, in which:

FIGURE 1 is a perspective view of a preferred form of the revolving display rack embodying the present invention.

FIG. 2 is a fragmentary plan view taken along the line 2-2 in FIG. 1.

FIG. 3 is a section taken along the line 3-3 in FIG. 2.

FIG. 4 is an exploded fragmentary elevation of one of the pocket assemblies and its mounting.

FIG. 5 is an enlarged fragmentary perspective view of one of the lowermost pockets.

FIG. 6 is a diametrical fragmentary section through the hub of the collapsible frame.

FIG. 7 is a fragmentary and exploded perspective view of one of the pocket members and its mounting.

FIG. 8 is a fragmentary plan of the parts shown in FIG. 7.

FIG. 9 is a plan view of the display rack in its collapsed condition and illustrating how the disassembled elements of the rack may be arranged in a compact package.

FIG. 10 is an enlarged end view of one pair of the nested pocket assemblies shown in FIG. 9.

While the invention will be described in connection with certain preferred embodiments, it will be understood that I do not intend to limit the invention to those embodiments. On the contrary, I intend to cover all alternatives, modifications and equivalents as may be included

2

within the spirit and scope of the invention as defined in the appended claims.

Turning first to FIG. 1, in the illustrated form of the improved rack, the display panels comprise rigid rectangular sheets 10 such as so-called leg boards angularly spaced around and facing outwardly from a frame 11 comprising a series of wings 12 and 12^a radiating from and supported by a central hub 13 which is mounted on a base 14 to turn about an upright axis. By swinging the wings against each other as shown in FIG. 9, the frame 11 may be collapsed into a compact unit for low cost storage or shipment to the point of ultimate use of the rack. Alternatively, the wings 12^a may be swung apart and rigidly joined by pocket assemblies 15 and the panels 10 into a rigid truss-like structure adapted to be journaled on a shaft 16 upstanding from the base 14. Where, as here, the panels are perforated by holes 17, the articles to be displayed may be suspended from hooks inserted into selected ones of the holes in the conventional manner.

In the particular embodiment illustrated, the frame 11 is provided with five wings equally spaced around the central hub 13, to receive five panels 10 and five pocket assemblies 15. Preferably, the two generally opposed wings 12 are made rigid with the hub 13, while the other three wings 12^a are pivotally connected to the hub so as to be swingable into substantial parallelism with the rigid wings 12 and lie closely adjacent the same as shown in FIG. 9 when the supporting frame is collapsed. This geometric construction has the advantage of forming a generally V-shaped unit when collapsed so that the nested pocket assemblies 15, which are described in more detail below, can be placed within the open side of the V to form a compact arrangement for low cost shipping and storage.

For the purpose of mounting the shaft 16 on the base 14, a collar 18 (see FIG. 6) is secured to the top surface of the base 14 by means of a plurality of bolts 19 and nuts 20. The base 14 is provided with a depending peripheral rim 14^a (FIG. 1) so that the lower portions of the bolts 19 and the corresponding nuts 20 are always spaced above the floor or other supporting surface on which the display rack is placed. A center hole in the collar 18 is threaded at 21 to receive the lower end portion of the shaft 16.

To minimize manufacturing costs, the frame wings are essentially of the same construction and, in the present instance, each includes three vertically spaced horizontal arms 23, 24 and 25 (FIG. 4) in the case of wings 12 and 23^a, 24^a, and 25^a (FIG. 1) in the case of the wings 12^a radiating from the central hub 13. At their outer ends the arms of each wing are disposed between the rigidly welded to two upright rods 31 which form a rigid bar joining the arms into a rigid and generally rectangular open frame.

Herein, the hub 13 comprises three vertically spaced rings or washers 13^a each with inner downturned flanges receiving and journaled on the shaft 16. As shown in FIG. 6, the inner end of each radiating arm lies against the upper surface of the rings and is either welded thereto at 26 as in the case of the wings 12 or pivotally connected thereto. In the case of the arms 23^a, 24^a, and 25^a, downturned end portions 27 on the inner ends of the latter arms are disposed in holes in washers to form the pivots. To facilitate turning of the hub 13 around the shaft 16, the lowermost hub element 13^a is supported on a ball bearing assembly 29 which, in turn, rests on a sleeve 29^a mounted concentrically around the shaft 16 on top of the bottom collar 18.

In accordance with the present invention, detachable pocket assemblies 15 are mounted on and secured rigidly to the outer upright edges of the frame wing 12 or 12^a

and utilized not only to support the rectangular display panels 10 from the expanded and revolvable frame but also to form a plurality of outwardly opening pockets 40 disposed between and vertically spaced along the adjacent side edges of the adjacent panels 10 for receiving and prominently displaying envelopes, boxes, or other packages of articles not properly supportable on hooks on the panels 10.

Preferably, each pocket 40 opens outwardly as well as upwardly and is formed in the present instance from a single piece of wire bent to form a wide top opening, a narrower bottom, and a front opening defined by upright side pieces 43. At their lower ends, the side pieces merge with the parallel legs 47 projecting horizontally and forwardly from opposite ends of a cross-piece 41 to define a right angular U which is narrower than the articles to be supported in the pocket. The upper ends of the side bars 43 are offset laterally and merge with the forwardly projecting parallel legs 44 of a wider right angular U which defines the top opening of the pocket. The closed side 42 of this U and the side 41 of the bottom U extend across and are centered relative to and welded at 39 intermediate their ends to parallel upright rods 38 spaced substantially farther apart than the width of the bars 31 of the wings 12, 12^a. The several pockets are secured to the bars at spaced points to provide the desired vertical spacing as shown in FIG. 4 and afford convenient access to the top opening for easy removal and replacement of the articles being displayed.

The several pockets thus joined by the bars 38 form an elongated and rigid box-like frame one of which, in accordance with one aspect of the invention, is extended along, centered on, and fastened securely but detachably to the outer upright bars 31 of each of the wings 12, 12^a. Herein, this is accomplished by a plurality of fingers 33 vertically spaced along and rigid with and secured to the bars 31 and cooperating therewith to form upwardly opening V-shaped notches in which the cross-pieces 41 on the back side of several of the pockets 40 may be received and firmly wedged. Each finger comprises a piece of wire bent into the form of a U having parallel legs 34 spaced apart a distance slightly less than the spacing of the pocket connecting bars 38. At their lower ends, the legs extend across and are welded to vertically spaced bars 35 which extend across and are welded to the wing bars 38. The finger is thus secured cantilever fashion to the wing edge at its lower end and its upper end portion is inclined away from the bars 38 so that the upper closed end of the notch thus formed is substantially wider than the thickness of the cross-bars 41 while the lower end is rigid to receive the bars with a tight wedging fit as shown in FIGS. 2 and 3. Thus, by hooking the cross-bars over the fingers and sliding the pocket assembly downwardly along the wing bars 31, the assembly becomes fastened securely to the wing.

In another of its aspects, the invention contemplates utilizing the pocket assemblies to separate the wings 12 and 12^a and to connect the adjacent vertical edges of adjacent ones of the panels 10 rigidly together, opposite side edges of each pocket assembly being fastened securely to the panel edges. Preferably, such fastening is achieved through the medium of a pair of channels 51 extending along opposite sides of the assembly and with welds 39 spaced along their lengths and securing one flange 51^a of the channel to side legs 44 of the U's defining the top of the respective pockets. Preferably, the channels are located near the closed ends of the U's so that the major portion of each pocket 40 sets out beyond the edges of the panels joined by the assembly.

The channels are V-shaped in cross-section and the included acute angle is such that in the expanded condition of the wing frame (FIG. 1), the channels on the adjacent pocket assemblies open toward each other and the other flanges 51^b thereof lie in a common plane thus providing vertical guideways for receiving the panel

edges and securing the same to the intervening pocket assembly. The panels may thus be inserted endwise into the respective pairs of channels and slid downwardly the full length thereof until the lower ends of the panels come against stops 54 at the lower ends of the pocket assemblies. Herein, the stops comprise the outer U-shaped ends of a piece of wire 52 extending across and welded to the underside of a rectangle 53 whose opposite sides are welded to the upright bars 38 and to the undersides of the bottom legs 47 of the lower one of the pockets 40.

With the channels 51 extending vertically across and rigid with the sides of the several pockets 40 and the backs of the pockets joined by the bars 38, each assembly 15 constitutes a sturdy truss structure for forming a rigid connection between the adjacent panels. With the pocket assemblies wedged against the outer edges of the wings 12, 12^a, the rack formed by joining the wing frame 11, the pocket assemblies 15, and the panels 10 is extremely rigid and well adapted to support a substantial weight of articles to be displayed in spite of the open wire structure of the wings and pocket assemblies and their mounting to facilitate detachment and collapse for low cost shipment.

The pocket assemblies constructed as above described are adapted to be nested together in pairs as shown in FIGS. 9 and 10 to provide optimum compactness in the packaging for shipment. This is accomplished by leaving an opening at the front of each pocket and along the full height thereof and making opposite sides of the pockets narrower than the width of these openings and the center channel which extends along the entire length of the assembly and between the side flanges formed by the parts 43, 44 and 47. The width of this channel is determined by the lateral spacing of the side members 43 of each pocket while the width of the opposite sides is determined by the lateral spacing of each member 43 from the adjacent outwardly offset leg 44 at the top of the pocket. By such sizing one side of one assembly including a channel 51, the top and bottom legs 44 and 47 and the connecting side member 43 of all of the pockets may, with two assemblies inverted relative to each other, be inserted into the slot of channel of a second pocket assembly and brought against the bottoms of the pockets in the latter as shown in FIGS. 9 and 10.

With all five of the panels 10 inserted and snugly received in the channels 51, 52 through the full lengths of the panels, it can be seen that the panels and pocket assemblies cooperate to form rigid connections joining the adjacent frame wings 12 and 12^a and uniting the parts of the collapsible wire frame into a rigid and sturdy unit which is supported by the hub 13 and is rotatable about the shaft 16. For delivering the rack at minimum cost to its ultimate point of use, it is shipped with the pocket assemblies 15 removed from the supporting wings 12 and 12^a, with the base 14 removed by threading it off the lower end of the shaft 16, and with the wire frame collapsed as shown in FIG. 9. The removal of the pocket assemblies 15 is accomplished simply by lifting them off the mounting brackets 33, while the frame 11 is collapsed simply by swinging the wings 12^a toward and substantially into parallelism with respect to the wings 12 which, in the present instance, remain at all times fixed to the hub 13. In this collapsed condition, all of the parts of the wings are permanently joined together so that at the point of ultimate use, it is only necessary to thread the base 14 onto the lower end of the shaft 16, swing the wings 12^a away from the wings 12, mount the pocket assemblies on the brackets 33 on the outer edge of each wing, and finally insert the panels 10 and slide the same downwardly to the bottoms of their respective channel guideways. The wings 12 and 12^a, as well as the pocket assemblies 15, thus become locked together into a rigid unit which is journaled on the shaft 16 in widely spaced bearings and thus adapted to revolve about the upright axis and also to sustain the weight of the articles dis-

5

played on the different panels and in the different pockets. At the same time, all of the parts of the rack frame and the pocket assemblies, except for the channel members, are formed from ordinary wire. The over-all weight of the rack and its cost of manufacture are thus held at a minimum while at the same time providing the sturdy construction required for properly displaying many different kinds of articles.

I claim as my invention:

1. A revolving display rack having, in combination, a base, a hub journaled on said base to turn about an upright axis, a plurality of generally rectangular wings radiating outwardly from said hub, means coupling the inner edges of said wings to said hub for relative movement of said wings between a collapsed position and an expanded position in which the wings are angularly spaced apart around said axis, said wings when in said collapsed position forming a relatively flat package with adjacent ones of the wings lying substantially face to face, a plurality of elongated and rigid box-like frames constituting pocket assemblies and each extending along and detachably secured to the outer upright edge of one of said wings, each pocket assembly providing along its outer vertical edge a plurality of vertically spaced pockets for receiving and supporting articles to be displayed, a rigid rectangular display panel between the adjacent sides of each pair of adjacent frames, means detachably and rigidly joining the edges of the adjacent panels to the sides of said pocket assemblies whereby to join said wings, the pocket assemblies and said panels into a rigid unit revoluble about said axis while permitting disconnection of said panels from said pocket assemblies and the latter from said collapsible wings for compacting the parts for low cost shipment.

2. A revolving display rack as defined in claim 1 in which each of said wings comprises a plurality of vertically spaced outwardly projecting arms and two upright bars rigidly secured to the outer ends of said arms on opposite sides thereof and supporting part of said means for detachably joining the pocket assemblies to said wings.

3. A revolving display rack as defined in claim 1 in which said joining means comprising a plurality of fingers vertically spaced along and mounted cantilever fashion on the outer edges of each of said wings to provide notches for receiving horizontally extending cross-bars vertically spaced along the backs of each pocket assembly.

4. A revolving display rack as defined in claim 3 in which the backs of the pockets of each pocket assembly are joined together rigidly by laterally spaced vertical bars disposed on opposite sides of said fingers.

6

5. A revolving display rack as defined in claim 3 in which said fingers comprise U-shaped pieces of wire over with the closed ends of the U's spaced from said outer wing edges and said cross-bars hooked over such ends.

6. A revolving display rack as defined in claim 1 in which each of said pocket assemblies comprises an elongated outwardly opening channel having side flanges wider than the channel opening whereby with the parts disassembled, the flange of one channel will nest into the channel opening of a second pocket assembly.

7. A revolving display rack as defined in claim 1 in which each of said pocket assemblies comprises an upper U-shaped member, a lower and narrower U-shaped member forming the pocket bottom, upright side members rigidly joining the outer end of the U's and a bar extending vertically across at least one U of the different pockets and rigidly joined thereto.

8. A revolving display rack as defined in claim 1 in which said last mentioned means comprises a pair of channels extending along and secured to opposite sides of each of said pocket assemblies and opening outwardly so that the channels of adjacent assemblies provide a guideway for receiving one of said panels and securing the same to the assemblies and wings.

9. A revolving display rack as defined in claim 8 in which said channels are disposed near the backs of said pockets.

10. A revolving display rack adapted for collapse into a relatively flat package for shipment, said rack having, in combination, a base, a hub journaled on said base to turn about an upright axis, a plurality of generally rectangular and flat upright display panels spaced outwardly from and angularly spaced around said axis with the opposed vertical edges of adjacent panels spaced away from each other, a plurality of upright pocket assemblies disposed between said display panels and including means detachably coupling the opposed edges of each pair of adjacent panels to opposite sides of a pocket assembly, and wings radiating outwardly from said hub and detachably coupling each pocket assembly to the hub whereby to lock said panels, said pocket assemblies, said wings and said hub together into a rigid assembly rotatable about said axis.

References Cited by the Examiner

UNITED STATES PATENTS

824,083	6/1906	Roach	211—44
2,167,375	7/1939	Rubenstein	211—50
2,738,075	3/1956	Guignard et al.	211—56
3,092,258	6/1963	Bleed	211—163

CLAUDE A. LE ROY, *Primary Examiner.*