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G. G. NESBITT
ARTICLE SUPPORT

3,018,004

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2 Sheets-Sheet 1

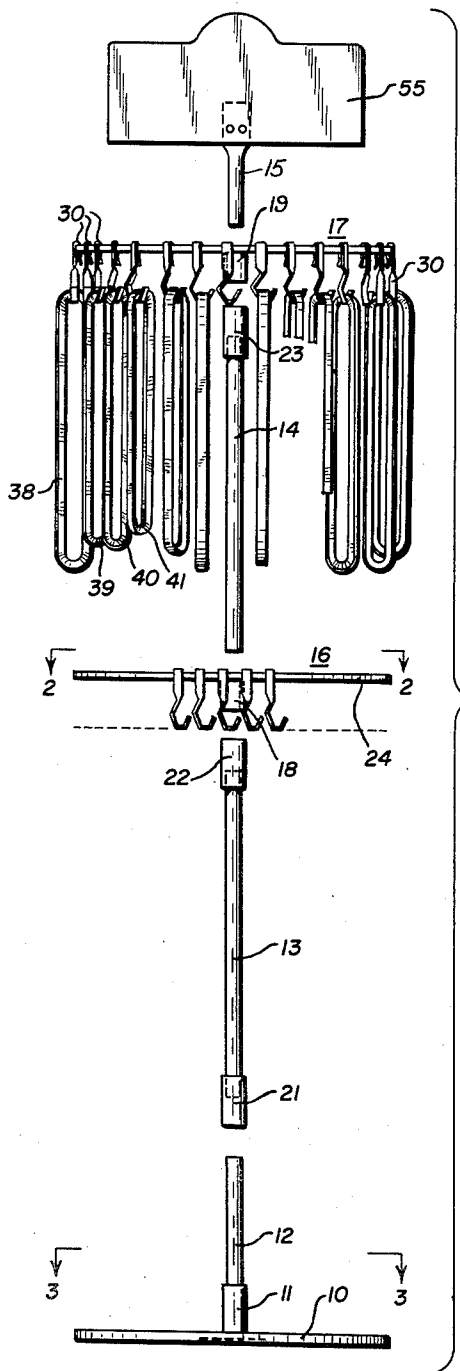


Fig. -1

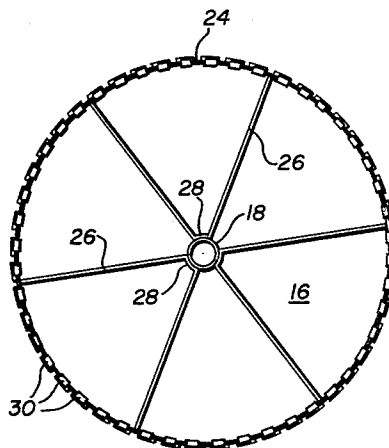


Fig. -2

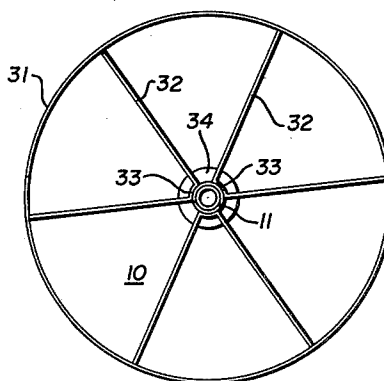


Fig. -3

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2 Sheets-Sheet 2

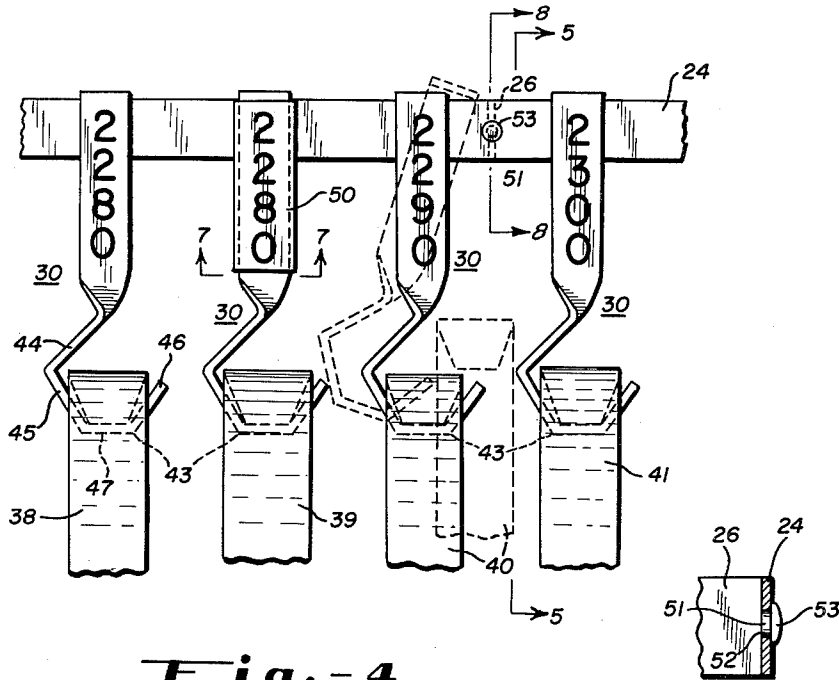


Fig. - 4

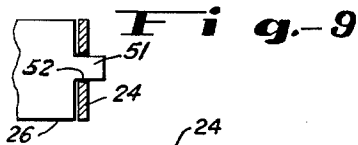


Fig. - 9

Fig. - 8

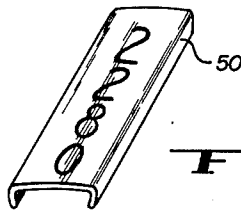


Fig. - 6



Fig. - 7

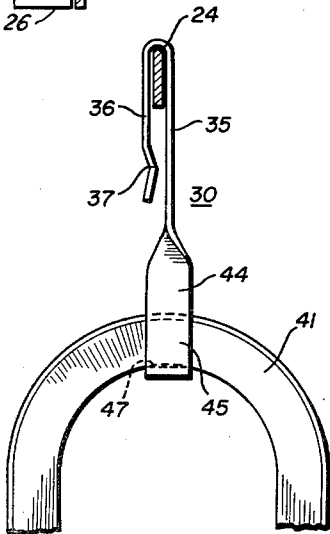


Fig. - 5

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3,018,004

ARTICLE SUPPORT

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3 Claims. (Cl. 211-170)

This invention relates to article supports and particularly to an improved support of the Lazy-Susan type including improved devices for attaching articles thereto for display or storage.

Many types of article supports have been provided heretofore for display and storage purposes. In the case of display supports or racks for a multiplicity of articles are merchandise for sale it is desirable that the individual articles be readily detachable for inspection or sale without displacing the other articles on the support. Furthermore, it is desirable that the support be of simple construction and that articles on all portions of the support be readily accessible. Accordingly, it is an object of the present invention to provide an improved support for the storage or display of articles.

It is another object of this invention to provide an improved article supporting rack of the Lazy-Susan type.

It is a further object of this invention to provide an improved article attaching element for display racks and the like.

It is a still further object of this invention to provide an article support for holding a multiplicity of articles and including improved detachable elements for facilitating the attaching and removal of articles and for minimizing accidental displacement of the articles.

Briefly, in carrying out the objects of this invention in one embodiment thereof, an article support of the Lazy-Susan type is constructed to comprise a plurality of spoked wheels mounted for rotation on a vertical supporting shaft or column. The shaft is made in a plurality of hollow rod sections and each wheel is supported on top of a sleeve on one shaft portion and is held in position on and rotates about the lower end of the next higher shaft portion. Each of the wheels has a rim formed as a strip attached to the hub by pairs of spoke members having arcuate portions engaging the hub and locked in position to form a complete wheel. The wheels then carry a plurality of article attaching hook members swingable in planes generally tangentially of the rim. These members comprise restricted loops engaging the rim to prevent accidental displacement and hooks at right angles to the loops for holding the articles, each hook having sloping sides to facilitate both the attaching and removal of the articles.

The features of novelty which characterize the invention are pointed out with particularity in the appended claims. The invention itself, however, both as to its organization and manner of operation will be better understood upon reference to the following description taken in connection with the accompanying drawings, in which:

FIG. 1 is a side elevational view of an article support embodying the invention shown with the component parts in exploded relationship;

FIG. 2 is a plan view of one of the shelves or wheels of the support of FIG. 1;

FIG. 3 is a view similar to FIG. 2 showing the supporting wheel or base;

FIG. 4 is an enlarged detailed view of a plurality of article attaching elements of the support of FIG. 1;

FIG. 5 is a section elevational view along the line 5-5 of FIG. 4;

FIG. 6 is a perspective view of an identification clip for the attaching members shown in FIG. 4;

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FIG. 7 is a sectional view of the clip and attaching element shown along the line 7-7 of FIG. 4;

FIG. 8 is an enlarged sectional view of the wheel rim of the support taken along the line 8-8 of FIG. 4; and

FIG. 9 is an enlarged, fragmentary, sectional view of the wheel rim and spoke projection of FIG. 8 previous to the peened configuration of FIG. 8.

Referring now to the drawings, FIG. 1 illustrates an article supporting stand or rack embodying the invention and shown with the several parts thereof separated or in exploded view form in order to more clearly illustrate their construction and arrangement. The stand as illustrated comprises a bottom supporting member 10 which is in circular form and carries a hub or sleeve 11 to which is secured an upright post 12. The post 12 forms the base for the shaft or column of the support and its three additional rod members or shaft portions of the column indicated at 13, 14 and 15 are supported on the post 12. The column carries two article supporting racks or wheels 16 and 17 having hubs 18 and 19, respectively, for rotational mounting on the shaft portions 14 and 15, respectively.

In assembling the rack the hollow rod or shaft 13 is secured on the post 12 by a sleeve 21 attached to the lower end of the rod 13 and having an internal diameter only slightly larger than that of the rods 12 and 13 so that when the sleeve 21 is fitted over the post 12 it retains rod 13 in position on the post. The rod 13 is provided with a sleeve 22 at its other end which is identical in construction and arrangement with sleeve 21 and which accommodates the lower end of the rod portion 14 when this portion is threaded through the hub 18 and into the sleeve 22. When the lower end of the rod 14 is seated in the sleeve 22 it rests on the upper end of the rod 13 acting as a stop and the hub 18 is rotatable about the shaft 14 and rests against the upper end of the sleeve 22 which acts as a thrust bearing. The upper end of the rod 14 is provided with a sleeve 23 of the same construction as the sleeves 21 and 22 and this acts to provide a socket or seat for the lower end of the rod portion 15 so that the hub 19 may be held in place on the sleeve 23 in the same manner as the hub 18 is held on the sleeve 22.

The wheels 16 and 17 are of identical construction; as shown in FIG. 2 the wheel 16, by way of example, comprises an outer circular rim 24 secured to a hub 18 by spoke members 26, wheel 17 being secured to the similar hub 19. Each of the wheels has three of the spoke members 26 and each of these members comprises a pair of spokes secured to the rim 24 at their outer ends and to the hub 18 at their inner ends. The two spokes of each pair are connected at their inner ends by arcuate portions indicated at 28. The spoke members are locked between the hubs and the rims in a manner to be described later and then are preferably soldered, welded, or otherwise suitably mounted to the hubs and rims to provide a strong integral structure. The quick detachable mounting arrangement of the rack provides an adjustable construction and makes it possible to employ one or more of the wheels 16 and 17 as desired, it being obvious that if only one of the wheels is required, the upper wheel 17 and rod 14 may be omitted and the rod 15 fitted directly into the hub 18 of the lower wheel.

Each of the wheels is arranged to carry a plurality of article attaching elements or hooks 30 which are spaced about the rim and make it possible to display or store a large number of articles which are made readily accessible because of the rotatable arrangement of the wheels.

The base of the article support may be constructed in the same manner as the wheels 16 and 17 as shown in FIG. 3. The base as illustrated in FIG. 3 comprises

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an outer rim 31 connected to the hub 11, three pairs of spokes 32, each pair having an arcuate member 33 at the center which is secured to the hub 11. For further strength, a circular plate 34 is attached to the bottom of the base 10 where it is welded or otherwise suitably bonded to the inner ends of the spoke members 32 and to the bottom of the sleeve or hub 11.

The details of construction of the hook members 30 are clearly shown in the enlarged views of FIGS. 4 and 5 which illustrate a portion of the wheel 16 and four of the hooks attached thereto. Each of the hooks includes an upper loop portion comprising a straight, flat side 35 constituting the body portion of the attaching element. The loop is formed by bending the flat element back upon itself to provide an opposite side 36 and the loop thus formed is restricted at its open end by bending the end of the piece 36 inwardly as indicated at 37 so that the gap between the flat side 35 and the bent portion 37 is narrower than the width of the rim 24 of the support over which the loop is secured. The flat form of the loop prevents rotation of the attaching element about the rim of the wheel.

The articles to be displayed or stored, which in this case have been indicated as automobile fan belts 38, 39, 40 and 41, are held on hooks formed at the lower ends of the elements 30. These hooks, which have been designated by the numeral 43, are formed by bending the strip from which the elements 30 are made to twist the hooks 43 so that they lie at right angles to the attaching loops at the upper ends of the elements, and each of the hooks is formed to provide a sloping portion 44 connecting the hook and the body of the element, the body of the hook comprising side portions 45 and 46 which slope upwardly and outwardly from a bottom portion 47 on which the belts are shown resting. The arrangement of the sloping top wall facilitates the upward removal of the belts since on lifting the belt the engagement of the belt and the top of the hook tends to move the hook laterally so that it may easily be held out of the way while removing the belt downwardly. Furthermore, the sloping sides 45 and 46 facilitate the insertion of the belt since by lifting the belt upwardly in the space between two of the hooks the hooks tend to part and if they are close together provide space for the entrance of the belt with minimum likelihood of disturbing the adjacent belts.

The lateral movement of the attaching element 30 is illustrated in the case of the third element from the left in FIG. 4 on which the belt 40 is hung and, as shown by the dotted line view, element 30 may move laterally without being dislodged from the rim 24; this movement provides ample space between the adjacent element 30 and the hook 43 for the removal of the belt 40 as indicated by the dotted line view of the belt. Furthermore, the restricted arrangement of the attaching loop due to the bent-in portion 37 prevents accidental displacement of the attaching element when one of the belts is lifted from its position on the hook 43.

The flat side 35 provides a convenient surface for marking the identification of the articles suspended on the respective hooks, and as indicated in FIG. 4 numerals have been applied to these flat portions to indicate the type of fan belt mounted on the respective hooks. In the event that it is desired to employ a different number from that on the element, a snap-on tab 50, as indicated in FIGS. 6 and 7, may be applied to the flat portion 35. Thus, as indicated in FIG. 4, the numeral 2280 appears on the left-hand element 30 and on the snap-on tab 50 on the next element 30. The use of the tabs makes it unnecessary to provide new attaching elements whenever a change is made in the articles to be held on the rack.

The wheels 10, 16 and 17 are constructed so that they are secured or locked together by cooperation of the rims, the hubs and the spoke elements prior to the bond-

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ing of the spoke elements to the hubs. During the construction of one of the wheels as illustrated by the construction of the wheel 16, the rim 24 is first formed to provide a circle and three pairs of spokes 26 connected by the arcuate portions 28 are then spaced equally about the circle to provide the form clearly shown in FIG. 2. The ends of the spokes 26, as indicated in FIGS. 4 and 8, are provided with short projections 51 which extend through openings 52 provided at equally spaced points along the rim 24 and which are peened over as indicated at 53 to hold the spokes in position with respect to the rim. At the center the length of the spoke elements is made such that when the three elements are in position as shown they fit snugly against the outer surfaces of the hub 18 and hold the wheel in assembled relationship. The arcuate portions 28 preferably are tack-welded to the hub 18 by a light resistance weld tacking and are then brazed or soldered to bond them securely to the hub. In addition to this, if desired, the outer ends of the spokes 26 may also be brazed or soldered to the inside of the rim 24. This construction provides a simple, strong wheel admirably suited to the supporting of articles in the manner indicated.

The topmost shaft member 15 may if desired have secured to it a decoration or panel 55 which may be employed to carry information with respect to the articles displayed on the rack below.

While the invention has been disclosed in connection with a Lazy-Susan type of rack for a particular type of article to be displayed, various modifications and other applications will occur to those skilled in the art. Therefore it is not desired that the invention be limited to the details of construction illustrated and described and it is intended by the appended claims to cover all modifications which fall within the spirit and scope of the invention.

I claim:

1. A support assembly including a thin flat strip supporting a plurality of article engaging members, and means for supporting said assembly with said strip in spaced relationship to a surface, each of said plurality of article engaging members being formed of a thin strip of material bent at one end to form an elongated loop having a lower restricted opening therein and detachably clipped over said flat strip, said loop being sufficiently long to allow sidewise tilting of a said article engaging member for removal of articles carried thereon without detaching said elements from said flat strip, an article engaging hook formed in the other end of said thin strip of material in a position at right angles to said elongated loop, thereby forming a support assembly in which the individual article support elements are movable sidewise with respect to the said flat strip for removal of articles.

2. A support assembly including a wheel having a thin flat rim, and means for supporting said wheel in spaced relationship to a surface, a plurality of article support elements detachably clipped on said rim, each element being formed of a relatively thin strip having an elongated at one end and an article supporting hook at the other, said loop having a restricted opening adjacent a lower portion thereof, said hook being formed at right angles to said loop, whereby said support elements are adapted to tilt sidewise in a plane generally tangential to said rim for removal of articles without removal of the support elements from said assembly.

3. A support assembly including a wheel having a thin flat rim, and means for supporting said wheel in spaced relation to a surface, a plurality of article support elements detachably clipped on said rim, each element being formed of a relatively thin strip and having an elongated loop at one end and an article supporting hook at the other, said loop having a restricted opening adjacent a lower portion thereof and being sufficiently long to allow sidewise tilting thereof without detachment from said wheel, said hook being formed at right angles to said loop

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for supporting articles in planes generally radial to the wheel and being formed generally in the shape of a pentagon with one of its upper sides missing, thereby providing an upwardly sloping surface for guiding articles lifted from said hook toward the open side thereof for disengagement therefrom.

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