

Sept. 5, 1967

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3,339,752

DISPLAY STAND AND STORAGE RACK

Filed Nov. 30, 1965

3 Sheets-Sheet 1

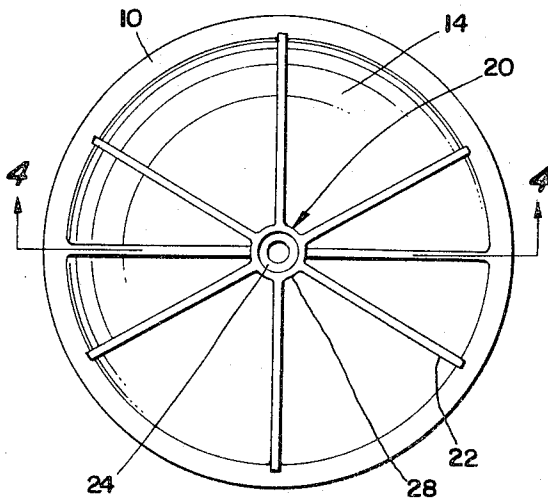


Fig. 1

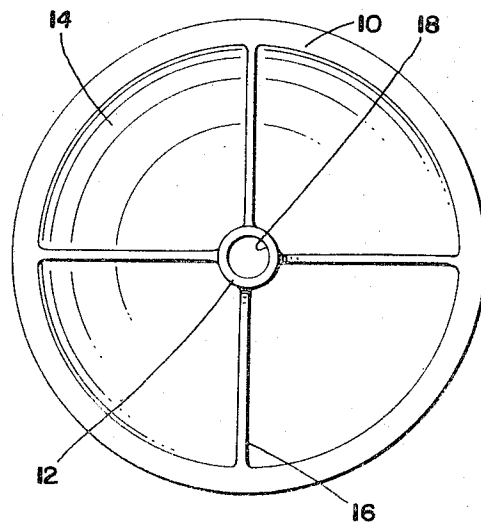


Fig. 3

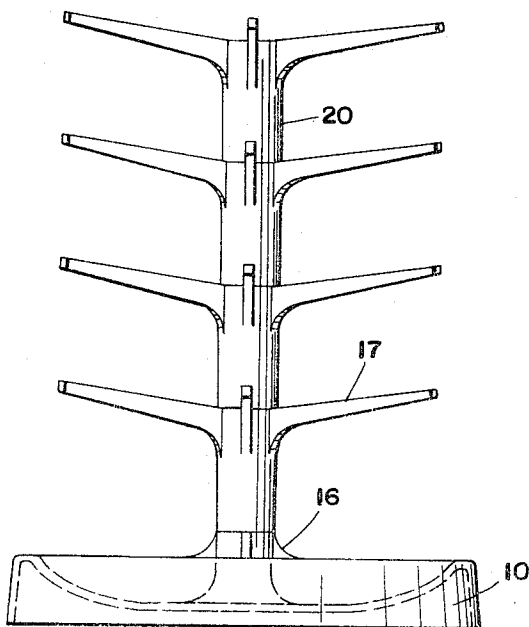


Fig. 2

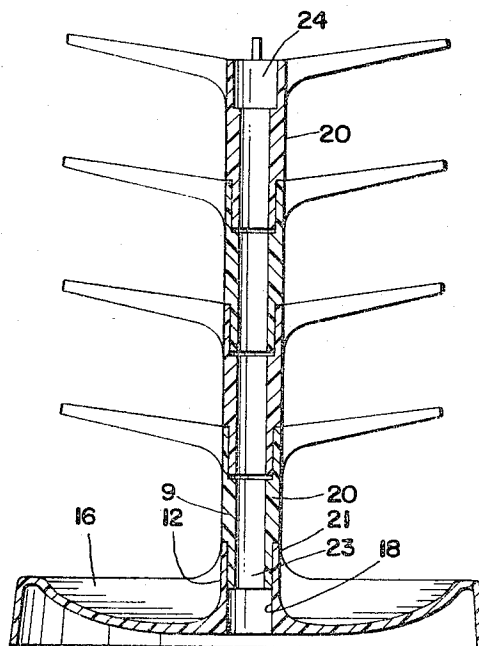


Fig. 4

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3 Sheets-Sheet 2

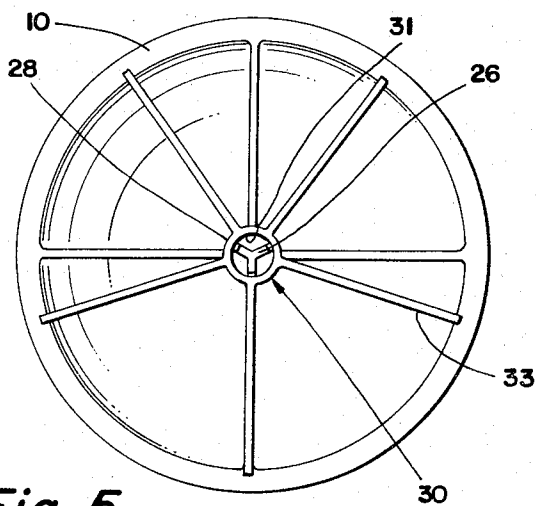


Fig. 5

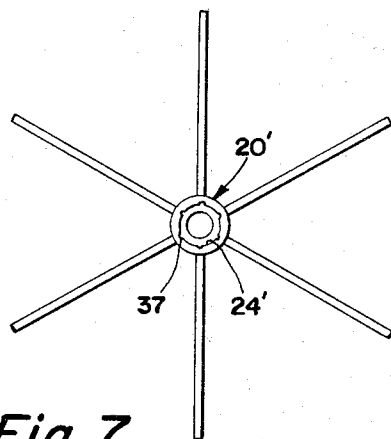


Fig. 7

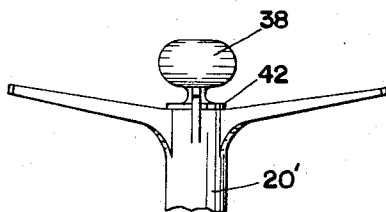


Fig. 8

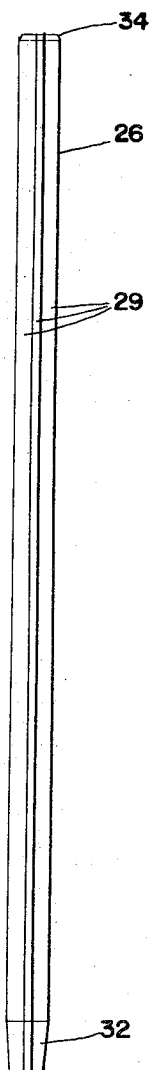


Fig. 6

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3 Sheets-Sheet 3

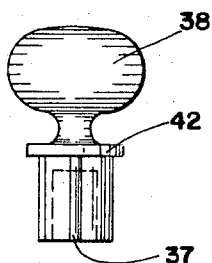


Fig. 9

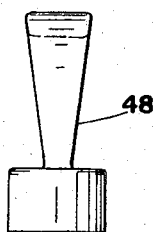


Fig. 11

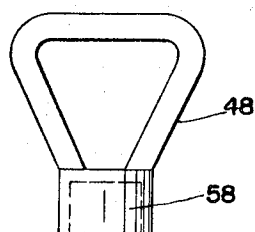


Fig. 12

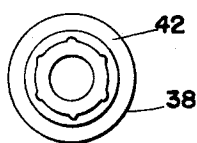


Fig. 10



Fig. 13

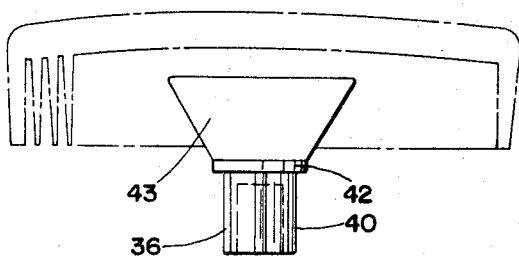


Fig. 14

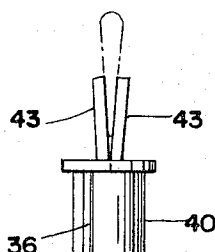


Fig. 15

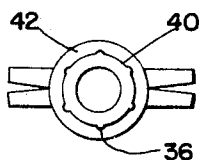


Fig. 16

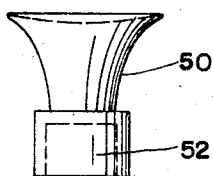


Fig. 17

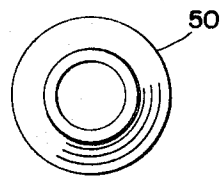


Fig. 18

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DISPLAY STAND AND STORAGE RACK

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7 Claims. (Cl. 211-177)

ABSTRACT OF THE DISCLOSURE

An apparatus for displaying or storing a variety of articles, comprising a concave base partitioned to form one or more compartments therein, the base arranged to support an upstanding column including a number of interconnected elements, each element being provided with complementary male and female connections at opposite ends thereof and a plurality of tapered radial arms which extend outwardly from the column. Further embodiments of the apparatus call for an upstanding core element seated in the base for maintaining in columnar arrangement a plurality of elements mounted about the core, the elements including a plurality of outwardly extending tapered radial arms.

This invention concerns a mechanism for the displaying, hanging or storing of a variety of articles. More particularly, this invention concerns a standing device having a base portion supporting a number of interconnecting column elements. Extending from the column elements are a plurality of arms to be used for displaying, holding, or storing a large variety of segregated articles.

A device constructed in accordance with the principles of this invention provides a mechanism for displaying, hanging or storing small articles with a maximum of organization in a limited amount of space and which is lightweight and safe with a high degree of versatility for use in the home as well as in commercial enterprises. This novel device can be easily assembled and disassembled and yet is capable of inexpensive and rapid mass production using the same material for all parts, preferably a plastic, and simple dies for the molding of the parts.

The prior art devices for this purpose have been generally unsatisfactory. The prior art has shown mechanisms which require the production of a plurality of holes in a central receiver and the placing of a number of supporting elements into these holes. This entails the tedious process of placing and removing these elements during assembly and disassembly. The elements of these prior art devices have also provided a source of danger, for example, from poking the eyes of children playing near them. Moreover, the only height adjustment permitted by the prior art devices was impractical for everyday purposes because it required the removal or addition of large portions of the device as opposed to being able to vary the height of displaying or storing capacity by small increments.

The prior art devices generally have been constructed of heavy, bulky materials. Such constructions has proved expensive for mass production manufacturing purposes as well as unfitted for household and commercial purposes.

My invention solves many of these problems because of its unique ability to become variable as the user's situation and requirements change. Each of the supporting column elements may be easily removed or added depending on height requirements. If the user desires that the column elements should not rotate, an embodiment having keyed column elements may be used. On the other hand, if the user desires that the column elements be rotated in order that each arm is not superimposed on

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the one below it, he may avail himself of an embodiment of the invention which permits staggering of the column elements as they are added.

The column elements have arms angled slightly upward, thus allowing small articles to be organized for use or displaying purposes, and then placed on the arms for retention in their proper order.

This invention contemplates the use of a lightweight plastic material to be used for mass producing each necessary part. Generally, only three dies will be required to produce each necessary part. The use of plastic makes the mechanism lightweight and thereby makes it suitable for many household and commercial uses. Considering the manner in which the mechanism is easily taken apart, this lightweight construction also lends itself to use by travelers.

The arms of each column element are to be blunted to prevent injury to small children. Blunt arm ends also lend themselves to displaying or storing sheer, easily torn fabrics, for example, nylon stockings, lace handkerchiefs and so on.

The segregated compartments in the base portion are of special utility in retaining individual groups of items related to those hung on the arms of the column elements but not capable themselves of being so hung. A commercial example might be the hanging of a number of necklaces on the column element arms and the displaying of a variety of matching brooches in the compartments below. In the home, a housewife might hang hair curlers or rollers on the arms of the column elements and place in the compartments below the related clips, bobby pins and the like. With the bobby pins being so segregated a housewife might easily stand before a mirror setting her hair and without looking at the mechanism reach down to the compartment containing the segregated bobby pins, thus eliminating any sorting through other clips and so on.

It is, accordingly, the general object of the present invention to provide a display, hanging or storage mechanism which can be used in a limited amount of space without sacrifice of organization or versatility.

It is a further object to provide such a mechanism constructed of lightweight plastic, especially capable of mass production due to its simplicity and small number of parts. It is also an object of this invention to provide a mechanism whose displaying surfaces may be easily added or removed to accommodate the user's needs. These objects as well as others relating to details of construction, will become apparent from the following description, read in conjunction with the accompanying drawing, in which:

FIG. 1 is a top plan view of the display stand, hanging and storage mechanism.

FIG. 2 is a side-elevational view of the display stand, hanging and storage mechanism.

FIG. 3 is a top plan view of the base of the display stand, hanging and storage mechanism.

FIG. 4 is a cross-sectional side elevational view of the invention taken along line 4-4 of FIG. 1, with certain parts shown in full for clarity.

FIG. 5 is a top plan view of a modification of the invention.

FIG. 6 is a side-elevational view of the central core element shown in the embodiment of the invention illustrated in FIG. 5.

FIG. 7 is a top plan view of a modification of the invention having the base portion removed.

FIG. 8 is a side-elevational view of a top plug knob for use with the modification of the invention shown in FIG. 7.

FIG. 9 is a side-elevational view of the top plug knob of FIG. 8.

FIG. 10 is a bottom plan view for the top plug knob of FIG. 9.

FIG. 11 is an end-elevational view of a top socket knob for use with the modification shown in FIGS. 5 and 6.

FIG. 12 is a side-elevational view of the top socket knob of FIG. 11.

FIG. 13 is a bottom plan view for the top socket knob of FIG. 12.

FIG. 14 is a side-elevational view of a top plug knob to be used on the modification of the invention shown in FIG. 7.

FIG. 15 is an end-elevational view of the top plug knob shown in FIG. 14 with a comb (illustrated by broken lines) inserted in said top knob.

FIG. 16 is a bottom plan view of the top knob of FIGS. 14 and 15.

FIG. 17 is a side-elevational view of a top socket knob to be used with the modification of the invention shown in FIG. 5.

FIG. 18 is a bottom plan view of the top knob shown in FIG. 17.

Referring to the drawings, FIGS. 1 through 4 show a base portion 10 divided into four concave compartments 14 by integral partitions 16. These compartments offer a high degree of utility in that they can be used to segregate small articles not capable of being hung on the arms above and being either related or different from the displayed, hung or stored items.

The compartments 14 defining partitions 16 are joined in the center of the base portion 10 at a boss 12. The boss 12 has a central bore or socket 18 into which fits a plug portion 23 of the column element 20.

As best shown in FIG. 4, each column element 20 fits in a column element socket 24 of the column element 20 beneath it. The sockets 24 are of the same size and configuration as the socket 18 of the base 10 such that the relative order of position of the column elements 20 is not critical since each is the same as the other.

The plug portion 23 of the bottom column element 20 is inserted in the boss socket 18 such that a shoulder 9 of the element 20 which defines plug portion 23 rests on the flat end 21 of the boss 12. The plug portions 23 of the other elements have similar shoulders defining them to engage rims 28 surrounding the sockets 24.

Each column element 20 has arms 27 of decreasing thickness extending radially, outwardly and upwardly slightly from the horizontal plane.

FIGS. 5 and 6 show a modification of the invention using an elongated core element 26 as a central support for column elements 30 having straight through cylindrical bores 31. The elongated core element 26 has a Y-shaped cross section formed by a plurality of projecting webs 29 extending radially from its vertical axis. Element 26 extends upward from a tapered plug portion 32 on one end to a top tapered portion 34 on the end opposite said one end.

The tapered plug portion 32 of the core element 26 is inserted in the bore 18 of the boss 12 of base portion 10. This gives an upstanding standard upon which the column elements 30 are placed. Extending from the rim 28 of the column elements 30 are arms 33. These arms have the same configuration as arms 17 of elements 20 and extend radially at a slight upward angle. The column elements 30 are easily telescoped onto the core element 26. This modification is, therefore, not capable of the height adjustment possible with the mechanism of FIGS. 1-4. It does, however, provide a simple fit between each column element 30 by eliminating the shoulder 9, flat end 21, plug portion 23 and sockets 24 of FIGS. 1-4.

FIG. 7 shows a modification of the invention illustrated in FIGS. 1 through 4. The mechanism of FIG. 7 uses column elements 20' which have at their upper ends sockets corresponding to sockets 24 and at their lower ends plug portions corresponding to plug portions 23. Accordingly, the internal peripheral surfaces of the

sockets are complementary to the external surfaces of the plug portions thereby allowing the column elements 20' to interlock in the same manner as do the elements 20 except that they are restrained from rotation by projections 36 on the surface of plug portions 23' (not shown) and grooves 37 in the sockets 24'.

FIGS. 9, 10, 14, 15 and 16 show top plug knobs 38 and 40, respectively, to be used with the mechanism shown in FIG. 7. The top plug knob 38 or 40 is inserted in the socket 24' of the top column element 20' and is held in place by the flanges 42. FIGS. 14 and 15 show a top plug knob 40 in which a comb (illustrated in broken lines) is inserted by way of example. The upper portion of the top plug knob 40 is composed of two side pieces 43 set at an angle to each other (as shown in FIG. 15) to form a wedge-like space between them. This upper portion may be purely decorative or may serve to retain an object used in conjunction with the items placed on the arms of the column elements such as the illustrated comb.

FIG. 8 shows a top plug knob 38 inserted into the socket 24 of a column element 20' and held in position by the flange 42.

FIGS. 11, 12, 17 and 18 show top socket knobs 48 and 50, respectively, to be used with the mechanism shown in FIG. 5. The top socket knobs 48 and 50 have a hollow center 52 whose internal peripheral surface is complementary to the external peripheral surface of the top tapered portion 34 of the core element 26. The knob 48 has a finger loop for carrying the stand. The core 26 and taper 32 must fit tightly in stand boss bore 18, and the socket 58 and core 26 must fit tightly, for the parts to withstand the weight of the stand when it is supported by the top knob. The knobs 48 and 50 are thus placed on top of the core 26 and the top tapered portion 34 guides them into position on the topmost portion of column element 26.

Although the present invention has been described in connection with but a single embodiment, variations and modifications may be resorted to by those skilled in the art without departing from the principles of the invention. All of these variations and modifications are considered to be within the true scope and spirit of the present invention and it is not intended that the illustrated embodiment or the terminology employed in describing it is to be limiting, but rather, it is my desire to be restricted only by the scope of the appended claims.

I claim:

1. A display or storage mechanism comprising:

- a base portion having a flat lower surface and an upper surface having one or more concave compartments formed by one or more partitions extending from a central boss to the outer edge of said base,
- said boss having a central socket receiving an upstanding column element having a plug portion adjacent one end thereof defining an external peripheral shape which is complementary to the internal peripheral shape of said socket,
- said column element having a socket in the end thereof opposite said plug end,
- said column element socket having the same peripheral shape and size as the socket of said boss,
- a plurality of arms extending radially from said column element at a slight angle from the horizontal plane and having a flat upper surface and a tapered lower surface flowing into the outer wall of said column element,
- said arms decreasing in thickness from said column element to the ends remote therefrom,
- a plurality of identical column elements having identical plug portions and sockets in engagement with the plug portions and sockets of adjacent column elements,
- a top column element having its plug in the socket of its adjacent column element.

2. The mechanism of claim 1 in which the socket of

the top column element has an ornamental piece received therein.

3. A display or storage mechanism comprising:
 - a base portion having flat lower surface and an upper surface having one or more concave compartments formed by one or more partitions extending from a central boss to the outer edge of said base,
 - said boss having a central socket receiving an up-standing core element having a tapered plug portion adjacent one end thereof defining an external peripheral shape which has engaging surfaces which are complementary to the internal peripheral shape of said central socket,
 - said core element extending upward from the tapered plug portion to a top tapered portion,
 - said core element having a Y-shaped external peripheral shape formed by a plurality of projecting webs extending radially from the vertical axis of said core element,
 - said core element being disposed to receive a plurality of column elements,
 - said column elements having a rim forming a central cavity,
 - said central cavity defining an internal peripheral shape which is complementary to the external peripheral shape of the engaging surfaces of said core element, thereby permitting said column elements to be disposed on said core element,
 - a plurality of arms extending radially from said column element rim at a slight angle from the horizontal plane and having a flat upper surface and a tapered lower surface flowing into the outer wall of said column elements,
 - said arms decreasing in thickness from said column elements to the ends remote therefrom,
 - a plurality of identical column elements having identical central cavities, the rims of said cavities being in engagement with the rims of the cavities of adjacent column elements,
 - a top column element having the lower surface of its rim adjacent to the rim of the column element beneath it and the top tapered portion of the core element extending above the upper surface of said rim.
4. The mechanism of claim 3 in which the exposed top tapered portion of the core element has a socket knob received thereon,
 - said socket knob having an upper portion in the form of a finger loop extending upward from the lower portion of said knob,
 - the ends of said loop being attached to the lower portion of the socket knob,
 - said lower portion having a central cavity adjacent the end thereof,
 - said central cavity having an internal peripheral shape which is complementary to the engaging surfaces of the external peripheral shape of said core element,
 - said central cavity receiving the top tapered portion of said core element.
5. The mechanism of claim 3 in which the exposed

top tapered portion of the core element has a socket knob received thereon,

- said socket knob having an upper portion in a frusto-conical form,
- the upper portion having a concave top edge,
- said upper portion being attached to a lower portion,
- said lower portion having a central cavity adjacent the end thereof,
- said central cavity having an internal peripheral shape which is complementary to the engaging surfaces of the external peripheral shape of said core element,
- said central cavity receiving the top tapered portion of said core element.
6. The mechanism of claim 1 in which the uppermost column element has a top plug knob inserted in its upper socket,
 - said knob having an upper portion with a bulbous shape,
 - said upper portion being attached at its bottom surface to a middle portion,
 - said middle portion being larger in diameter than the lower surface of said bulbous upper portion and larger than the lower portion of said knob,
 - said middle portion thereby forming a flange around the knob,
 - said lower portion forming a plug-like structure, the external peripheral shape of said plug-like structure being complementary to the internal peripheral shape of said upper socket,
 - said plug-like structure being received in said socket and held in position by said flange.
7. The mechanism of claim 1 in which the uppermost column element has a top plug knob inserted in its upper socket,
 - said knob having an upper portion composed of two flat sides set at an angle to each other to form a wedge-like space between them,
 - a middle portion being larger in diameter than the lower surface of said wedge-shape upper portion and larger than the lower portion of said knob,
 - said middle portion thereby forming a flange around the diameter of said knob,
 - said lower portion forming a plug-like structure, the external peripheral shape of said plug-like structure being complementary to the internal peripheral shape of said upper socket,
 - said plug-like structure being received in said socket and held in position by said flange.

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