

May 25, 1954

A. BOCCHINO ET AL
INFLATABLE UMBRELLA

2,679,256

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2 Sheets-Sheet 1

FIG. 1

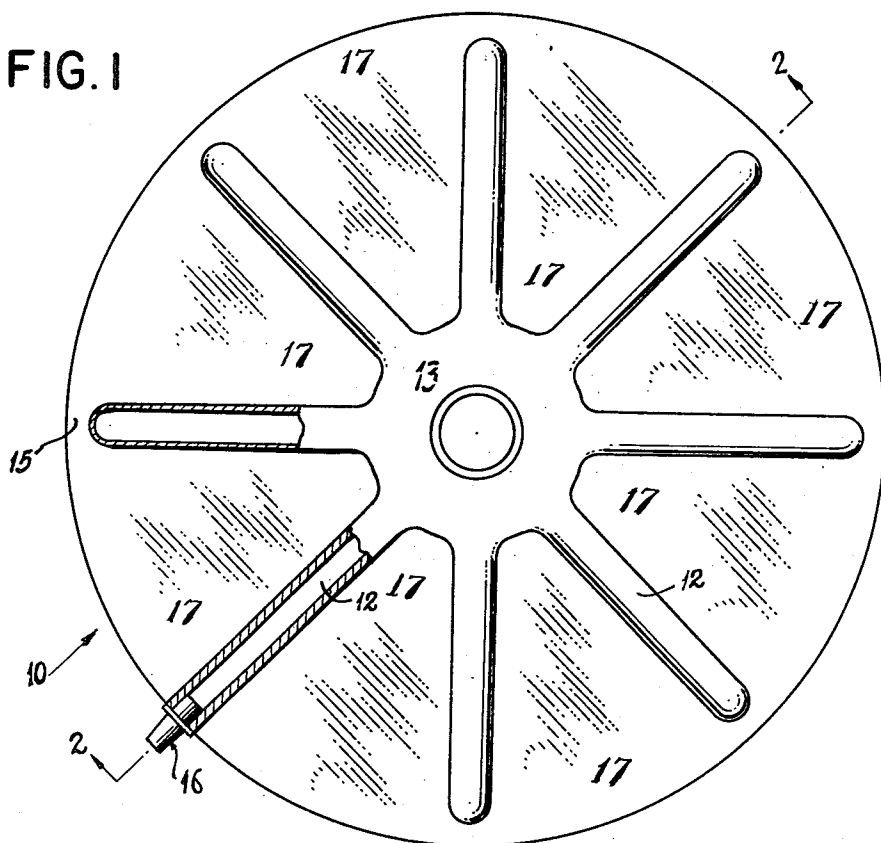


FIG. 2

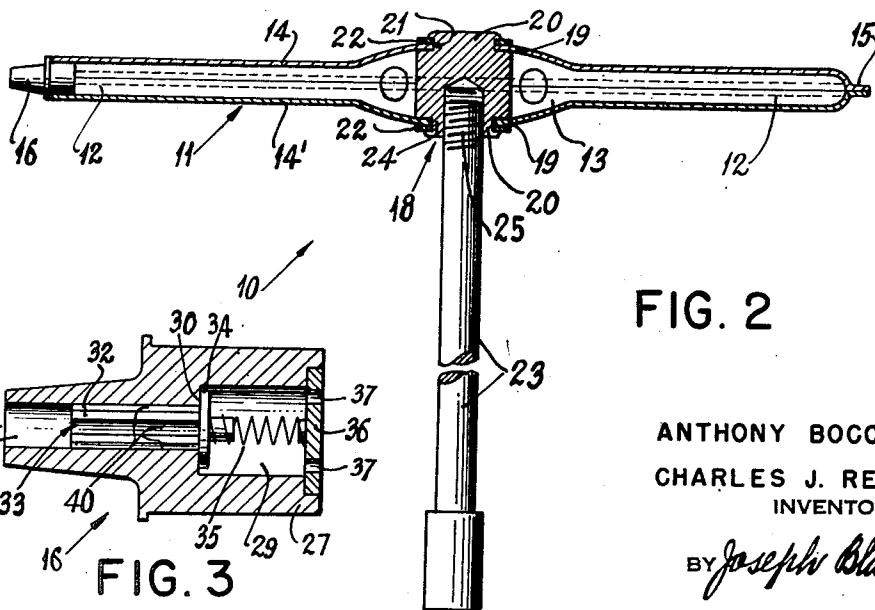
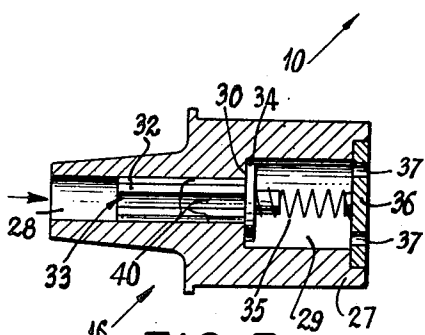


FIG. 3



ANTHONY BOCCHINO
CHARLES J. RETTA
INVENTORS

BY *Joseph Blacker*
ATTORNEY

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FIG. 4

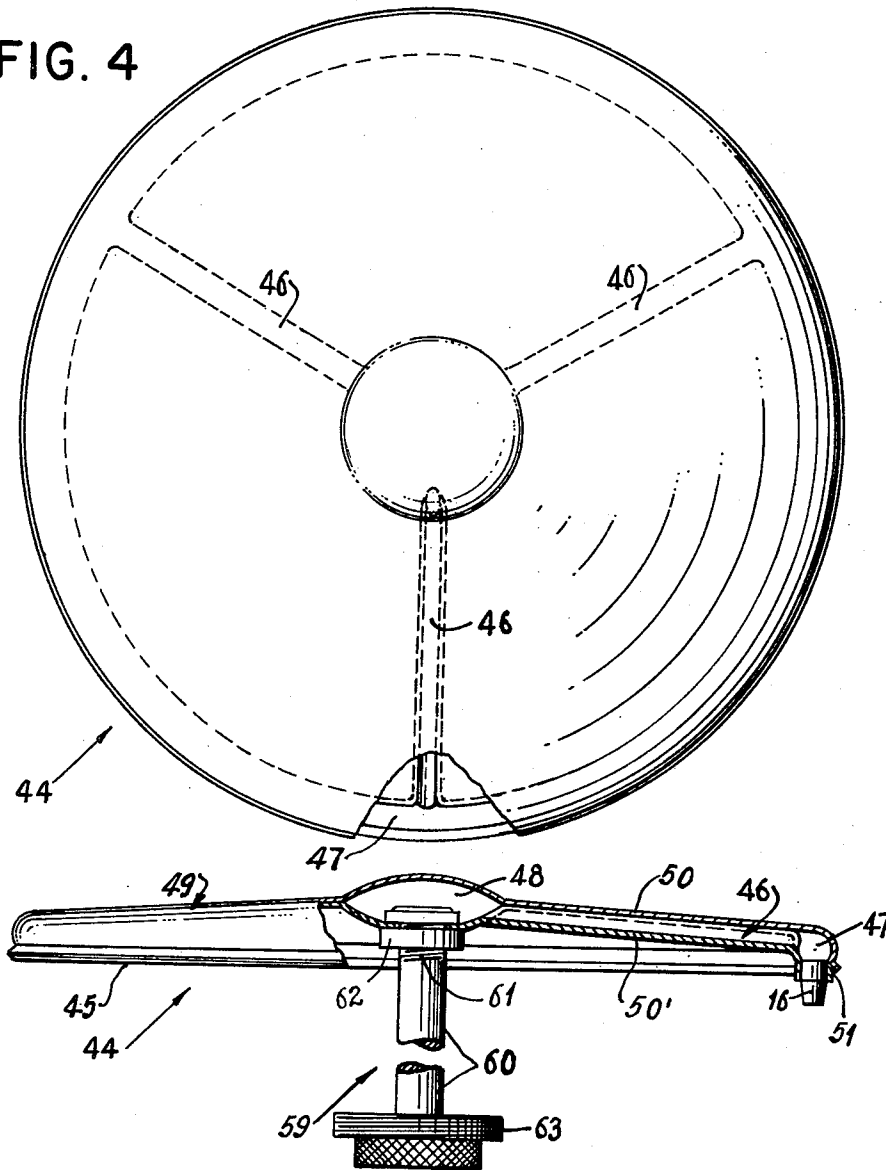
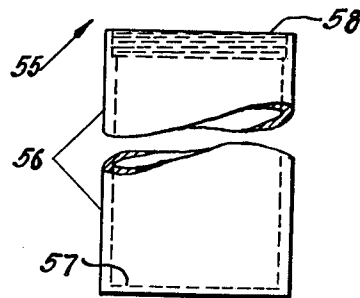


FIG. 5



ANTHONY BOCCHINO
CHARLES J. RETTA
INVENTORS

BY *Joseph Blacker*
ATTORNEY

UNITED STATES PATENT OFFICE

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INFLATABLE UMBRELLA

Anthony Bocchino and Charles J. Retta, Brooklyn, N. Y., assignors of one-third to Robert R. Judge

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4 Claims. (Cl. 135-20)

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This invention relates to an inflatable and pliable umbrella-like head covering which may be kept in compact rolled up condition, but which may be inflated by air blown therein and in such a way that the head cover will be enlarged in area when in an inflated condition and adapted to be held by the user at its central portion and serve as an umbrella.

An object of this invention is to provide a collapsible and extensible umbrella-like head covering, comprising an inflatable disk-like body having diametrically disposed ribs and a central air chamber communicating with the ribs and to mount an air valve in one of the ribs so as to make it possible to inflate the central chamber and the ribs simultaneously when air is blown through the valve into one of the ribs.

Another object of this invention is to provide a modified collapsible and extensible umbrella-like head covering, comprising an inflatable disk-like body having hollow diametrically disposed ribs communicating with a circumscribing circular rib so that the head covering substantially simulates an umbrella body having a true circular outer edge.

With the above and other objects in view, the invention will be hereinafter more particularly described, and the combination and arrangement of parts will be shown in the accompanying drawings and pointed out in the claims which form part of this specification.

Reference will now be had to the drawings, wherein like numerals of reference designate corresponding parts throughout the several views, in which:

Figure 1 is a top plan view of one form of the device.

Figure 2 is a cross-sectional view taken on line 2-2 in Figure 1.

Figure 3 is a central cross-sectional view of an air valve assembly, on a greatly enlarged scale.

Figure 4 is a top plan view of a modified form of the device.

Figure 5 is a side elevation of the modified form shown in Figure 4, the device being partly broken away to show the interior thereof.

In the illustrated embodiment of the invention, the numeral 10 indicates a collapsible and extensible umbrella-like head covering, comprising an inflatable disk-like body 11 having straight tubular and radially disposed ribs or passageways 12.

At the central portion of the body 11 is an air chamber 13 communicating with the passageways 12. The body 11 is preferably made of two

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plastic disks 14, 14' which are positioned in superposed relation and joined by the application of heat and pressure to major portions of the disks. It is to be noted that the disks 14, 14' are hermetically joined completely around their peripheral edges to form a jointed flange 15 and that the outer end of each passageway terminates at the said jointed circular flange 15.

As shown in Figure 2, the inner ends of the passageways 12 merge with the air chamber 13 whereby the air in the chamber 13 is in communication with the passageways 12. A suitable air valve 16 is inserted into and fixed in one of the passageways 12 which is made to extend to the outer periphery of the body 11 and this makes it possible for air to be blown therethrough for inflating the air chamber 13 and passageways 12. The air imparts a degree of rigidity to the passageways and to the head covering in service position so that the head covering substantially simulates an umbrella body.

As shown in Figure 2 there is provided a circular connecting member 18 having shoulders 19 and upper and lower extensions 20. The upper shoulder 19 is in contact with an apertured central portion or annular flange 21 of the plastic disk 14 through which passes the upper extension 20. A washer 22 is placed over the upper extension 20. The free end portion of the extension 20 is riveted over the washer 22 and this clamps the plastic disk 14 in airtight relation on the connecting member 18.

The lower shoulder 19 is in contact with an apertured central portion or annular flange 24 of the plastic disk 14' through which passes the lower extension 20. A washer 22 is placed over the lower extension 20. The free end portion of the extension 20 is riveted over the washer 22 and this clamps the plastic disk 14' in airtight relation on the connecting member 18.

The connecting member 18 connects the upper and lower disks 14, 14' of the plastic covering material and keeps them in desired spaced-apart relation. A rod 23 having a threaded end 25 is threaded into a threaded lower portion of the connecting member 18 and provides a handle by which the head covering 10 is carried when the ribs 12 and the air chamber 13 are inflated.

As shown in Figures 1 and 2, it will be seen that between the rib-shaped passageways 12 are sectoral portions 17 which are inherently flat due to the upper and lower layers being cemented together in abutting relation at said sectoral portions, and that solely upon inflation of the ribbed passageways 12, the sectoral portions 17 assume

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a planar form. This construction shows the central portions of the ribs 12 and the sectoral portions 17 as lying in alignment in the same plane and this alignment permits the entire body 11 to be rollable into compact package form 5 when the ribs 12 are deflated.

As shown in Figures 1 and 2, it will be seen that the area of the hollow inflatable ribbed passageways constitutes a small percentage of the area of the non-inflatable planar sectors. It will also be seen that the ribbed passageways 12 are straight, tubular, and extend equidistantly above and below the planar sectors 17. Particularly, it is to be noted that the adjacent ribbed passageways 12 are in far spaced-apart relation from each other, being positioned forty-five degrees apart.

Figure 3 is a central cross-sectional view on an enlarged scale of the air valve 16 shown in Figures 1 and 2 for blowing air into the ribs 12 and the air chamber 13.

The air valve assembly 16 comprises a valve body 27 having an inlet passage 28, an outlet chamber 29 and a valve seat 30. A valve 33 having a stem 32 is slidably mounted in the valve passage 28 and has a valve head 34 pressed against the valve seat 30 by a coil spring 35. The spring reacts against a disk 36 suitably fixed at the outer end of the chamber 29. The disk 36 has outlet passages 37 for air passing through the valve 16.

The valve 33 has grooves 40 on its outer peripheral surface which permit air blown into the inlet passage 28 to pass through the valve when the air pressure against the valve head 34 is greater than that exerted by the spring 35.

Figures 4 and 5 show a modified collapsible and extensible umbrella-like head covering 44, comprising an inflatable disk-like body 45 having hollow diametrically disposed ribs 46 communicating with a circumscribing circular rib 47.

At the central portion of the body 45 is an air chamber 48 communicating with the ribs 46. The body 45 is preferably made of two plastic disks 50, 50' which are positioned in superposed relation and joined by the application of heat and pressure to major portions of the disks. It is to be noted that the disks 50, 50' are hermetically joined completely around their peripheral edges to form a jointed flange 51.

As shown in Figure 5, the inner ends of the ribs 46 merge with the air chamber 48 whereby air in the chamber 48 is in communication with the ribs 46. A suitable air valve 16 is inserted into and fixed in the circular rib 47 which is made to extend to the outer periphery of the body 45 and this makes it possible for air to be blown through the valve for inflating the air chamber 48 and the ribs 46. The air imparts a degree of rigidity to the ribs 46, 47 and to the head covering in service position so that the head covering substantially simulates an umbrella body having a true circular outer edge.

It is also to be noted that the upper surface 49 of the head covering shown in Figure 5 tapers downwardly to simulate the appearance of an umbrella.

Figure 5 shows an elongated two member container type handle 55 which comprises a tubular lower member 56 having a closed lower end 57 and an open upper end 58. The upper end is internally threaded. The handle 55 includes an upper member 59 made of a rod 60 having a thread 61 at one end which may be screwed into a threaded member 62 suitably fixed to the cen-

tral lower portion of the plastic disk 50'. At the opposite end, the rod 60 terminates in an enlarged externally threaded collar 63 of a size adapted to fit into the threaded upper portion 58 of the tubular lower handle member 56 to form the elongated handle 55.

When the handle members 56 and 59 are threaded in unitary relation, the user grasps the tubular lower member 56. When not in use, the tubular lower handle member 56 is disconnected from the upper handle member 59. The handle member 59 is removed from the disk-like body 45. The head covering 44 is deflated and rolled around the rod 60 of the upper handle member 59 so as to form a compact tightly rolled cylindrical unit of a size to permit entry into the tubular lower handle member 56.

It is to be noted that when the rolled up head covering is placed inside the tubular lower member 56, the threaded collar 63 is outside the lower member and is threaded into the thread in the lower handle member. The head covering is then concealed inside the lower handle member or container. When not in use, the user only carries around a tubular container of package form and of small size adapted to be placed inside a hand bag or pocket.

It is also to be noted that the valve mechanism may be taken as representing any suitable means for performing the same function.

It is also to be noted that the gist of the invention is to provide an inflatable linear portion or portions on the hollow body which when inflated function as ribs, the same as in an umbrella.

When it is desired to deflate the head covering, the user presses the valve stem 32 inwardly of the valve body 27 and allows the air in the head covering to escape. For this purpose, the valve stem 32 may be made long enough to extend outwardly beyond the valve body.

For low cost production, the valve 33 may be simply in the form of a hinged disk.

In accordance with the patent statutes we have described and illustrated the preferred embodiments of our invention, but it will be understood that various changes and modifications can be made therein without departing from the spirit of the invention as defined by the appended claims.

We claim:

1. In an extensible head covering adapted to be rolled into package form, when deflated, comprising a disk-like two layer planar body made of plastic material, said body having straight radially positioned ribbed passageways and cemented sectoral portions therebetween, said passageways stopping short of the outer periphery of said body, one of said passageways extending to the outer periphery of said body, said passageways constituting a minor portion of said disk-like surface, whereby all the sectoral surfaces between said passageways assume a flat operative position solely upon the inflation of said passageways, said passageways and said sectoral portions lying in a single plane and thereby permitting said disk-like body to be rollable into package form, an air valve mounted in said extended passageway and having a spring-pressed valve stem permitting air to be blown thereinto for inflating said air chamber and said radial passageways, for imparting a degree of rigidity to said passageways and to said planar head covering in extended service position, and a rod-shaped handle having a thread at one end

and being thereby removably attached to said head covering.

2. In a collapsible and extensible head covering, comprising a disk-like circular planar body made of plastic material and having a circumscribing circular passageway, straight radially positioned passageways and flat sectors therebetween, said radial passageways stopping short of the outer periphery of said body, one of said passageways extending to the outer periphery of said body, an air chamber at the central portion of said body communicating with said passageways and with said circular passageway, an air valve mounted in said extended passageway and having a spring-pressed valve stem permitting air to be blown thereinto for inflating said air chamber and said passageways, for imparting a degree of rigidity to said radial passageways and to said planar head covering in service position, and a rod-shaped handle having a thread at one end and being thereby removably attached to said head covering.

3. In an inflatable head covering adapted to be rolled into package form, when deflated, comprising a disk-like two layer planar body made of plastic material, said body having straight radially positioned ribbed passageways and cemented sectoral portions therebetween, said passageways stopping short of the outer periphery of said body, one of said passageways extending to the outer periphery of said body, said passageways constituting a minor portion of said disk-like surface, whereby all the sectoral surfaces between said passageways assume a planar operative position solely upon the inflation of said passageways, the central portions of said ribbed passageways lying in the same plane as said sectors, an air valve mounted in said extended passageway and having a valve inlet portion outside said body, permitting air to be blown thereinto for inflating said air chamber and said radial passageways, for imparting a degree of rigidity to said passageways and to said planar head covering in service position, said body having a carrier member with a female thread centrally thereof, and a rod-shaped handle having a male thread at one end, said handle being thereby removably attachable to said threaded carrier member and to said head covering.

4. In a head covering made of a two layer disk-like flexible body defined by tubular ribs which are considerably spaced-apart in angular relation and adapting said head covering for erection to service position solely by inflation of said tubular ribs; said layers having annular flanges at their central portions, said annular flanges being in laterally spaced-apart relation and providing a central pocket therebetween, said tubular ribs extending radially from said pocket and being closed at the outer periphery of said disk-like body, said body having modified sectoral two-layer portions intermediate said tubular ribs, the two layers of each of said modified sectoral portions being cemented together so as to lie in a single plane, said sectoral portions constituting the major percentage of the area of said body, a carrier member insertable in said pocket and having reduced end portions adapted to be received by said annular flanges and extending outwardly of said body, annular washers engageable with said reduced end portions and adapted for clamping said annular flanges to said carrier member in air-tight relation, said carrier member having a female thread centrally thereof, a handle having a male thread at one end and being attachable to said threaded carrier member and a spring actuated air valve mounted in one of said ribs and having a tubular extension outside said body for inflating and imparting a degree of rigidity to said tubular ribs, whereby solely upon the inflation of said tubular ribs, the entire body including the said modified sectoral body portions, assume a planar service form, said head covering in deflated form being foldable into a compactly rolled package.

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