Jan. 30, 1951 J. LEVIN 2,539,445

UMBRELLA STEAMER

Filed Sept. 10, 1946

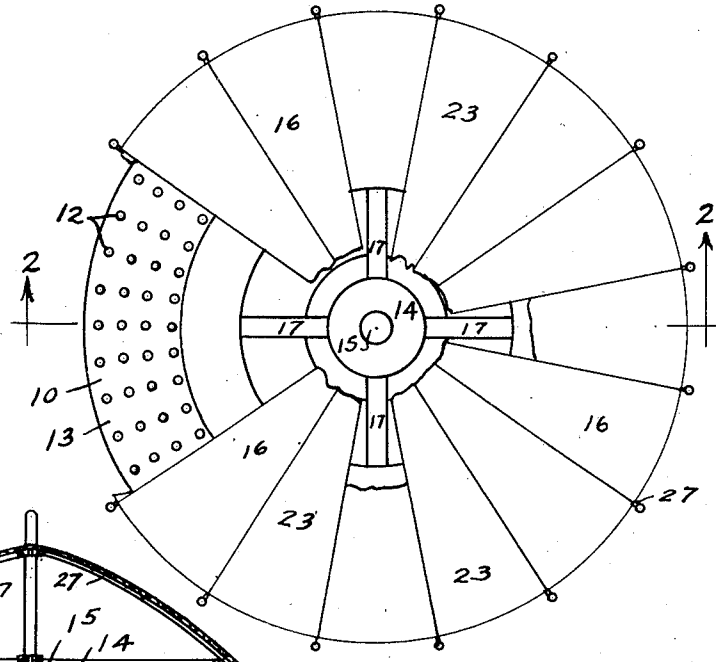


FIG. 1.

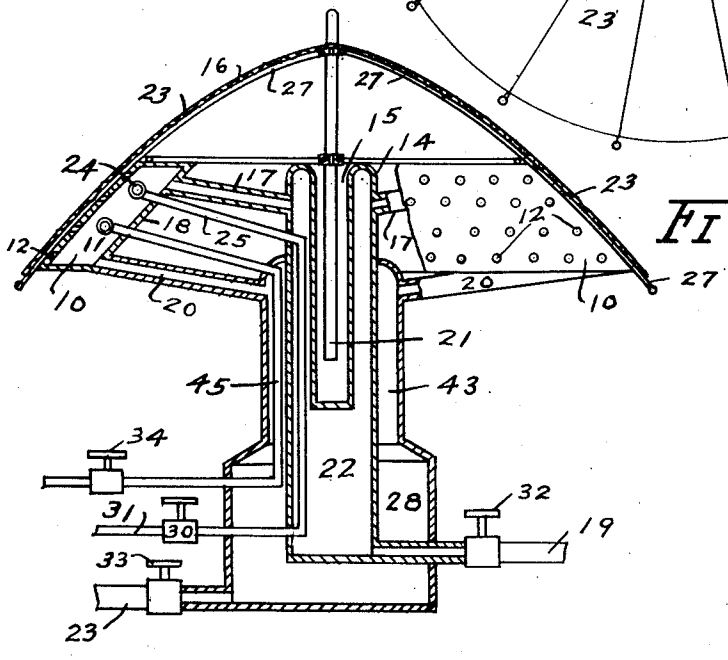


FIG. 2.

Inventor

JOSEPH LEVIN.

By Howard J. Whelan.

Attorney

Patented Jan. 30, 1951

2,539,445

UNITED STATES PATENT OFFICE

2,539,445

UMBRELLA STEAMER

Joseph Levin, Baltimore, Md., assignor to Eichenbaum Umbrella Co., Inc., New York, N. Y.

Application September 10, 1946, Serial No. 696,065

3 Claims. (Cl. 68—6)

1

This invention relates to umbrellas and more particularly to a device for shrinking all of their fabric panels during manufacture.

The conventional manner of fitting the fabric panels of umbrellas into place on the ribs or framework during manufacture consists in consecutively steaming each individual panel until it has shrunk to the proper degree of tightness on the framework. This method is slow and relatively expensive and is apt to produce an unbalanced umbrella and one that does not open or close with the desired precision and freedom from trouble. This proves unsatisfactory from the customer's point of view and results in many complaints which in turn injure the manufacturer's business and prestige.

It is the purpose of this invention to provide a new and improved outfit for the manufacture of umbrellas that will avoid one or more of the disadvantages and limitations of the prior art.

Another object of the present invention is to provide a new and improved outfit for the manufacture of umbrellas that will enable all the panels of the cover to be shrunk on neatly and effectively in one operation in an expeditious and facile manner.

A further object of the herein described invention is to provide a new and improved outfit for the finishing of the cover on an umbrella that will enable it to be shrunk or fitted on as a complete unit and the shrinking and fitting actions will be evenly distributed during the process and the resulting stresses will not wrinkle or distort the material of the umbrella or its framework.

Other objects will become evident as the invention is more fully detailed.

For a clearer understanding of the present invention and its objects reference is made to the appended drawings and the description following. These together outline a particular form of the invention by way of example, while the claims emphasize the principles and scope thereof.

Referring to the various drawings:

Figure 1 is a plan view of an umbrella panel steaming outfit, embodying this invention, showing an umbrella with parts broken away to show its positioning thereon, and

Figure 2 is a sectional view taken along line 2—2 of Figure 1.

Similar reference characters refer to similar parts throughout the drawings.

In the structure shown in the drawings, a casing jacket 10 of arcuate walled ring form

2

tapering towards its axis, is formed hollow with its interior 11 arranged for permeation of steam under low pressure, that can pass therefrom through apertures 12 of small diameter and frequent distribution across the face 13 of jacket 10. The jacket is made of such size and form as to fit the lower portion of the panels of the type and size of the umbrella that it is to process. Its face 13 is smooth enough to enable the ribs to be rotated freely on it while placing the jacket 10 in position and avoid obstructing or jarring them or the cover of the umbrella. The jacket is made to register with the lower portion of the ribs and cover. The jacket is suspended on a spider frame consisting of a hollow cylindrical hub chamber member 14 having a central passage 15 through it for the stem or stick 21 of an umbrella 16 to be inserted while the latter is being processed. Spoke-like pipe legs 17 radiate from the hub and terminate in the upper portion of the inside wall 18 of the jacket 10. These legs and chambers are hollow to permit steam to be carried through them from a hollow base 22 to which a steam connection 19 is attached. A similar series of spoke-like legs 20 are attached to the bottom portion of the jacket to form drains for any steam that may be condensed inside the jacket. These drain pipes or legs 20 serve to render the outfit stronger and at the same time remove the water derived as the steam condenses. This produces a continuous flow of the steam throughout that keeps the jacket uniformly heated throughout its use and the material of the panels properly steamed. The outlet pipe 23 takes off the condensate and excess steam. The interior 11 has a preheater coil 24 installed inside it for steam to heat it. The heated coil 24 heats the casing 10 which in turn heats the metal parts and panel of the umbrella 16. When the sponging steam passing through the pipe legs 17 and 20, reaches the casing 10 and goes through the apertures in its face, it is at a high enough temperature to prevent condensate or water from mixing it with it. Such water would interfere with the process of shrinking the fabric in the proper manner, and tend to soak the umbrella fabric.

In the use of the outfit the preheater steam is turned on and heats casing 10. Circulating preheaters or coils 24 are fed by pipe 25 and exhausted through pipe 45. The umbrella stick 21 of umbrella 16 is inserted into the passage 15 until the ribs rest on the top of the chamber member 14. This aligns the lower portions of the panels 23 of the umbrella with the face 13

of the steam jacket 10. These panels are before steaming somewhat loose and wrinkled. The steam passed through them from the apertures 12 removes some of the sizing that is in the fabric by its heat and force and renders the material pliable with a tendency to shrink. The upper half of the fabric panels usually fits sufficiently tight on the umbrella frame and does not require further shrinking to improve it. For that reason the jacket 10 is only made long enough to reach about half way up the panels. The lower portion of the fabric panels however are ordinarily full of wrinkles or loose, when the umbrella cover is put on the frame and ribs, before the steam is passed through them. This removes the wrinkles and the panels tighten up on the ribs 27 where the material is sewed on in the conventional manner. The steam and condensate not used is circulated through the heating system by flowing out of the legs 20 into the enlarged portion 43 where it enters an annular space 28 about the chamber member 14 and through the outlet 23. This base serves as an inlet and outlet doubled chambered member to permit this and at the same time separate the incoming and outgoing steam and condensate, and also as a means to keep the outfit self supporting and more or less portable. This structure is convenient to use as no support is needed for the umbrellas to be processed when used with it. It operates on all the panels at the same time and with the same degree of steam and it is kept hot all over. The value of keeping the material of the panels processed at the same temperature and time assures of the same action throughout and the avoidance of undue stresses and strains thereon. The spoke arrangement assists in this action as it induces an even delivery of steam to all parts of the circular jacket. The stretching or shrinking of the material and the bending of the framework or ribs of the umbrella are not interfered with by the outfit during the process, but a certain amount of freedom is given to the umbrella while at the same time it is supported properly in the device. Access is assured to the inside of the umbrella and the parts of the outfit while in use and any slight adjustment required by practical requirements may be readily made.

The preheater 24 is supplied through its pipes 25 from a valve 30 attached to steam feed line 31, a valve 32 controls the steam entering the casing 10, valve 33 controls the discharge from the casing 10 and valve 34 controls the discharge from the preheater 24, through piping 45.

While but one general form of the invention is shown in the drawings and described in the specifications, it is not desired to limit this application for patent to this particular form, as it is appreciated that other forms of construction could be made that would use the same principles and come within the scope of the appended claims.

Having thus described the invention, what is claimed is:

1. A steamer device for umbrellas comprising a casing having a base, cylindrical walls extending upwardly therefrom and defining an internal chamber, cylindrical walls within said chamber spaced from said first mentioned walls and from said base and protruding beyond the upwards confines of said first-named walls and defining an internal chamber, a ring-shaped jacket forming a chamber having arcuate inner walls and foraminated outer walls, series of parallel, spaced hollow spokes securing said jacket to the first mentioned cylindrical walls and to the second mentioned cylindrical walls, one series of said spokes establishing communication between said jacket and said first mentioned chamber and the other series of said spokes establishing communication between said jacket and said second mentioned chamber, means for supplying steam to said jacket including the second-mentioned chamber and one series of hollow spokes, and means for draining condensed steam from said jacket including the other series of hollow spokes and the first mentioned chamber.

2. A steamer device as set forth in claim 1 including a preheating coil in said jacket, pipe means for supplying steam thereto extending through the second-mentioned chamber and a draining pipe for said preheating coil extending through the first-mentioned chamber.

3. A steamer device as set forth in claim 1, the umbrella resting upon a surface of said jacket, said second mentioned chamber having a separate internal chamber therein free of the steam in said second chamber to receive the handle of the umbrella.

JOSEPH LEVIN.

REFERENCES CITED

The following references are of record in the file of this patent:

UNITED STATES PATENTS

Number	Name	Date
615,974	Fay	Dec. 13, 1898
792,737	Smith	June 20, 1905
1,489,681	Wells	Apr. 8, 1924
1,592,259	Deslandes	July 13, 1926
2,213,283	Pungor	Sept. 3, 1940
2,251,127	Gessner	July 29, 1941
2,284,313	Weber	May 26, 1942