July 4, 1961 N. C. JACKSON 2,990,983

BAG STRUCTURE FOR GARMENT FINISHING MACHINES

Filed May 1, 1958 2 Sheets-Sheet 1

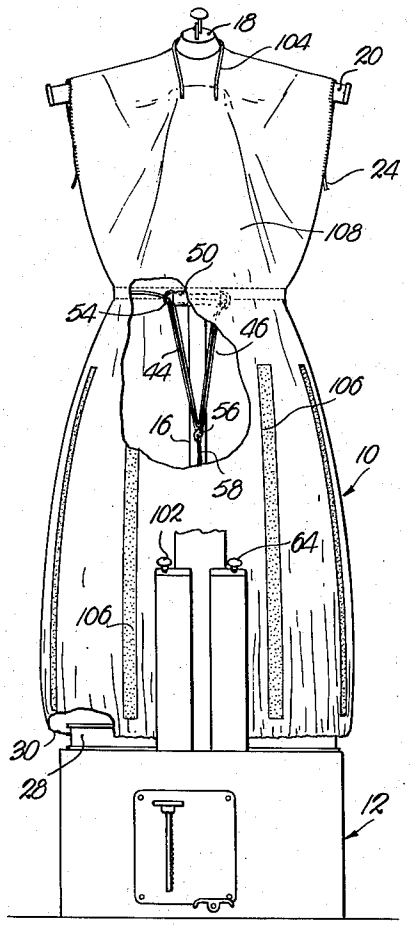


Fig. 1.

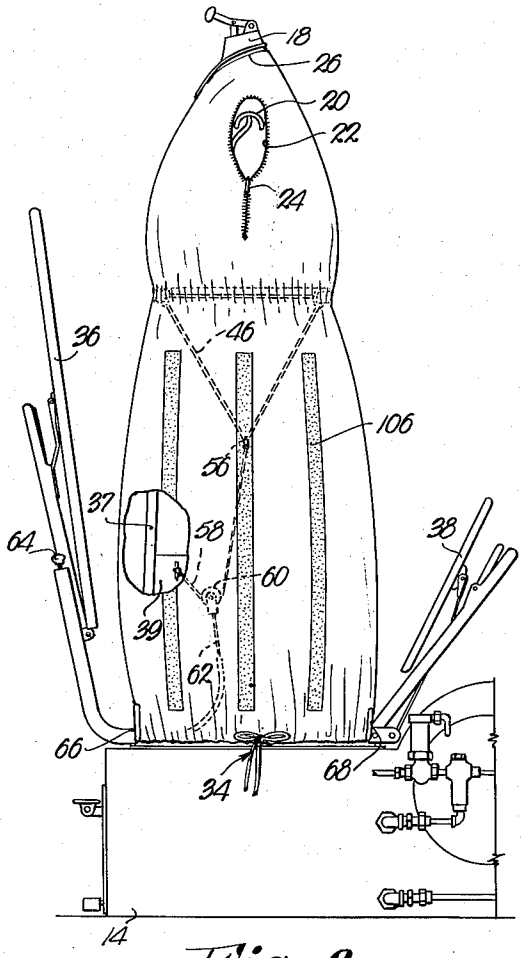


Fig. 2.

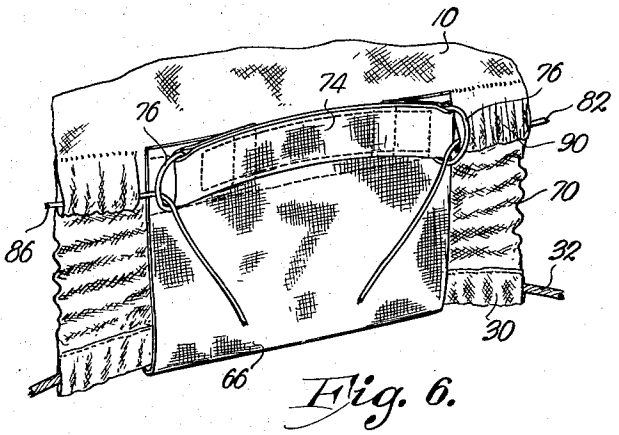


Fig. 6.

INVENTOR.
Nolan C. Jackson
BY
ATTORNEY.

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BAG STRUCTURE FOR GARMENT FINISHING MACHINES

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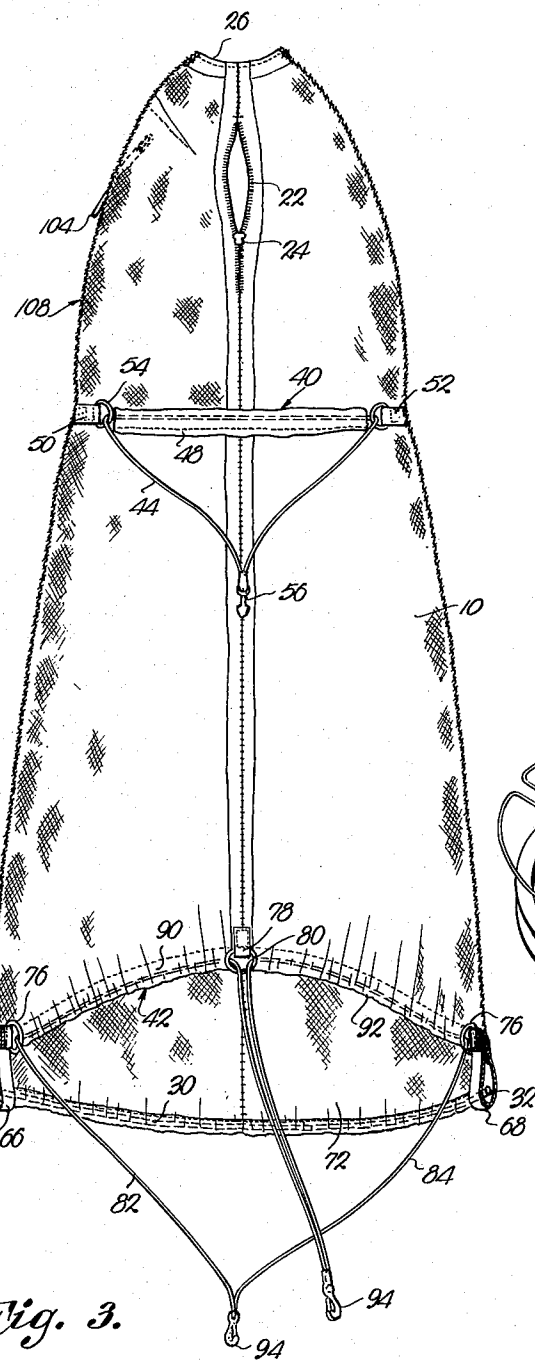


Fig. 3.

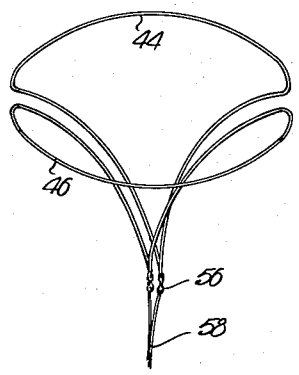


Fig. 4.

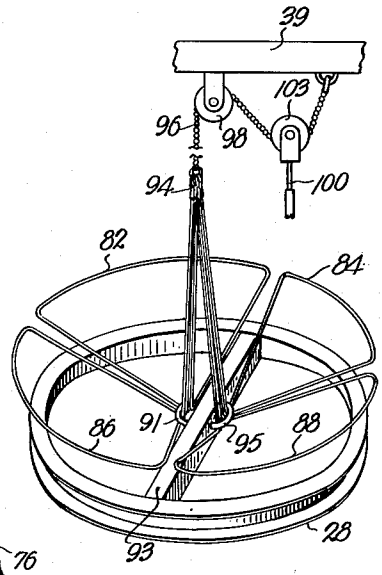


Fig. 5.

INVENTOR.
Nolan C. Jackson
BY
ATTORNEY.

United States Patent Office 2,990,983 Patented July 4, 1961

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BAG STRUCTURE FOR GARMENT FINISHING MACHINES

Nolan C. Jackson, Wichita, Kans., assignor to Wichita Precision Tool Company, Inc., Wichita, Kans., a corporation of Kansas

Filed May 1, 1958, Ser. No. 732,242
13 Claims. (Cl. 223—67)

This invention relates to garment finishers in the nature of that disclosed in my U.S. Letters Patent No. 2,736,471, and more particularly to improvements in the bag structure therein disclosed, the primary object being to eliminate wrinkles in garments that are draped over the bag during the finishing process.

In by patent above-identified there is disclosed novel take-up means in the nature of drawstring structure that is attached to the bag therewithin at a number of locations throughout the length thereof for taking up the fullness of the bag and thereby varying the extent of ballooning of such bag when fluid pressure is directed thereinto. Such take-up means has proved successful and almost absolutely essential to adapt a single bag for receiving any one of a large class of garments of differing sizes and shapes. The operator can easily and quickly adjust the various drawstring structures so that when the bag is inflated, it will properly balloon tightly to the shape, size and configuration of the garment draped thereon.

However, it is manifest that drawstring means inherently draws the material from which the bag is made into a plurality of gatherings and such gathering or wrinkling of the bag is oftentimes transmitted from the bag into the garment itself, thereby wrinkling the latter during the finishing procedures. Such wrinkling of the garments which occurs more particularly when a rather drastic lessening of the bag diameter is needed for smaller garments, is found to occur especially at the front and at the rear of the garment adjacent certain clamps that are employed as a part of the finisher in the manner disclosed in my patent aforementioned.

It is the most important object of the present invention, therefore, to provide a bag having improved take-up means, as well as certain other advantageous features operable in conjunction with the take-up means and otherwise, to prevent wrinkling of the bag and, therefore, the garment to be finished at certain localized areas, especially along the said clamps, as well as adjacent the front of the garment near the neck thereof.

Another important object of the present invention is to provide improved drawstring structure that is connected to the bag in a novel manner through use of straps, rings, loops and the like, primarily for the purpose of eliminating wrinkles as aforementioned, and secondarily, to prevent tearing of the material from which the bag is made when the latter is taken up by the drawstrings.

A further important object of the instant invention is to provide an improved bag capable of accomplishing the needed results above outlined by virtue of the inclusion of means for maintaining the effective length of the bag at the front and back thereof substantially constant while the sides of the bag may be adjustably gathered to change the effective length thereof whereby the fullness of the bag adjacent thereto may be controlled.

A still further object of the present invention is to provide loop means such as a resilient element at the front and upper end of the bag and cooperable with the structural components above mentioned for accommodating low-neck garments, sport shirts and other clothing, and at the same time eliminate wrinkling thereof,

regardless of the extent to which it may be necessary to reduce the diameter of the bag at the waist.

An additional important object of the instant invention is to provide an improved bag having means thereon to prevent upward creeping of the garment toward the waist zone of the bag, especially when the bag is drastically restricted at such waist zone through use of the take-up means therefor.

In the drawings:

FIG. 1 is a fragmentary, front elevational view of a garment finishing machine in the nature of that disclosed by my patent above set forth showing the improved bag structure of the instant invention operably mounted thereon;

FIG. 2 is a fragmentary, side elevational view of the finisher shown in FIG. 1, the bag being partly broken away for clearness;

FIG. 3 is a substantially longitudinal, cross-sectional view through the bag on an enlarged scale, the bag being entirely removed from the finisher;

FIG. 4 is a schematic, perspective view of the drawstring loops of the take-up means at the waist of the bag;

FIG. 5 is a view similar to FIG. 4 showing the drawstring loops of the take-up means adjacent the lower open end of the bag; and

FIG. 6 is an enlarged, fragmentary, internal perspective view at the lowermost open end of the bag showing one of the loop members and proximal component parts of the bag.

Aside from the bag itself, broadly designated by the numeral **10**, garment finisher **12** shown for illustrative purposes only in FIGS. 1 and 2 of the drawings, forms no part of the instant invention and may be similar in nature to the finisher disclosed in my Patent No. 2,736,471 aforementioned. Accordingly, the disclosure of said patent is incorporated herein by reference as may be needed for a full understanding of the function and use of the improved bag **10** about to be described.

Bag **10** may be made from any flexible material that is sufficiently porous to be permeable to the flow of steam and/or air therethrough emanating from hollow base **14** forming a part of the finisher **12**.

Hollow bag **10** is supported by the finisher **12** through the medium of an upstanding frame member **16** within the bag **10** and terminating in a neck element **18** attached to the frame member **16** at the upper end of the latter. Laterally extending arms **20** on the neck element **18** are received by openings **22** in the bag **10**, and which openings **22** are in turn provided with slide fastener closure means **24**. Opening **26** at the upper end of the bag **10** clears the neck element **18**. The lowermost open end of the bag **10** is attached to the base **14** in any suitable manner such as through use of an annulus **28** which bag **10** surrounds.

The lowermost peripheral edge or margin of the bag **10** is hemmed to present a piping **30** receiving a drawstring **32** which, when tied in a knot **34** as shown in FIG. 2, clamps the lower open bottom of the bag **10** tightly to the annulus **28**.

When the finisher is placed in use, the garment (not shown) draped over the bag **10**, is held in place at the front and at the back thereof through use of opposed clamps **36** and **38** cooperating with rigid backing strips **37** within the bag **10** and carried by the frame member **16** by a suitable mount **39**.

In accordance with the improvements of the instant invention, take-up means broadly designated by the numeral **40**, is provided for the bag **10** intermediate the ends thereof and particularly at the waist zone thereof, and take-up means **42** is provided for the bag **10** adjacent the bottom thereof but spaced upwardly from the piping **30** and drawstring **32**.

Take-up means 40 includes a pair of drawstring loops 44 and 46 within the bag 10 and a piping 48 is provided for each loop 44 and 46 respectively. Pipings 48 are attached to the bag 10 therewithin at opposite sides thereof in diametrically opposed relationship, and receive the bights of the corresponding loops 44 and 46. The pipings 48 do not, however, extend across the front and the back of the bag 10; at such zones there is provided a pair of elongated straps 50 and 52 of relatively heavy material such as buckram, canvas or the like, attached rigidly to the inner face of bag 10 as by stitching.

An eye element such as a metallic ring 54, is attached to each end of each strap 50 and 52 respectively, and it is through these four rings 54 that the loops 44 and 46 are threaded. In that respect it is clearly seen in FIG. 3 that the drawstring loop 44 passes from the ends of the piping 48 therefor, and thence through a ring 54 on strap 50 and a ring 54 on strap 52. Loop 46 is arranged in the same manner on the opposite side of the bag 10 and suitable fasteners 56 connect the ends of each loop 44 and 46.

A flexible chain, cable or the like 58, joins with fasteners 56 with mount 39 for backing strips 37 as seen in FIG. 2. Chain 58 is trained around a pulley 60, in turn connected with a flexible cable 62, the latter of which is actuated by a pull knob 64 in a manner more particularly described in my said patent.

At the lower end of the bag 10 adjacent the front and rear thereof, there is provided a pair of members 66 and 68 fastened at their uppermost ends adjacent the take-up means 42 and looped beneath and around the piping 30 and drawstring 32 in the manner best illustrated in FIGS. 3 and 6.

The members 66 and 68 are made from relatively strong material that is substantially heavier than the material of the bag 10 and such members 66 and 68 gather together the lowermost margin of the bag 10 between take-up means 42 and piping 30, as indicated by the numeral 70. This reduces the effective length of the bag 10 at the front and at the rear thereof, leaving the sides of the bag relatively full, it being seen in FIG. 3 that side margins 72 of the bag 10 beneath the take-up means 42 progressively decreases in width in both directions as the loop members 66 and 68 are approached.

Each member 66 and 68 is provided with an elongated strap 74 within the bag 10, not unlike the straps 50 and 52 and, in the same manner as in the drawstring structure 40, each strap 74 has a ring 76 secured to each end respectively thereof.

Additionally, there is provided a small, upstanding strap 78 of heavy material at each side respectively of the bag 10 therewithin, and each of the two straps 78 is in turn provided with a ring 80.

Four drawstring loops 82, 84, 86 and 88 are provided for the take-up means 42, it being noted in FIG. 3 that loop 82 passes through one ring 76 adjacent member 66 and through one ring 80, as well as through a piping 90 extending between the last-mentioned rings 76 and 80. Similarly, the loop 84 has its bight threaded through a piping 92 stitched to the inner face of bag 10, and this loop 84 passes through the same ring 80 and through one of the rings 76 adjacent the rear loop member 68.

Loops 82 and 86 are threaded through an eye 91 on crossbar 93 of annulus 28 and loops 84 and 88 pass through eye 95 on bar 93. The two loops 86 and 88 are similarly arranged at the opposite side of the bag 10. All of the loops 82, 84, 86 and 88 are provided with fasteners 94 not unlike the fasteners 56, which are coupled with a common chain or the like 96, as shown in FIG. 5, which passes over a pulley 98 and attaches to mount 39. A flexible cable 100 interconnects the chain 96 and another actuating knob 102 through a pulley 103.

The front loop member 66 is in alignment with the front strap 50 as shown in FIG. 1, and with a loop element 104 which may be made from elastic material if desired, and which element 104 is looped over the neck element 18. The loop element 104 is attached at its ends directly to the front of the bag 10 immediately below the opening 26 therein.

It is to be seen especially when viewing FIGS. 1 and 2, that when the bag 10 is taken up at the waist zone thereof by the drawstring structure 40 to reduce the effective diameter thereof, garments draped over the bag 10, especially relatively short garments such as shirts, blouses, jackets and the like, tend to creep upwardly toward the reduced waist zone of the bag 10 when the latter is inflated. Accordingly, there is provided a plurality of frictional strips 106 on the outer face of the bag 10 between the lower end thereof and the take-up means 40. Strips 106 may be made from any suitable material and have their outer faces roughened as by use of a selected vinyl product carrying an abrasive sprinkled along the strips 106 and made from Carborundum dust or other roughening substance.

In use, the bag 10 is adjusted through use of the pull knobs 64 and 102 to the size and shape of the garment to be finished thereon. When the knob 64 is pulled outwardly to exert a pull on the drawstring loops 44 and 46, the material forming the bag 10 is gathered together only along the two pipings 48 and such material remains relatively flat and unwrinkled or ungathered along each of the two straps 50 and 52.

Similarly, when the knob 102 is actuated to take up the loops 82, 84, 86 and 88, the gathering takes place entirely at the two sides of the bag 10 along the pipings 90 and 92, as well as the corresponding pipings for the loops 86 and 88. This leaves the bag 10 ungathered and relatively flat at the front and back thereof adjacent the elements 66 and 68.

Still further, the loop element 104 holds that zone 108 of bag 10 relatively flat, zone 108 extending between the take-up means 40 and the loop element 104. Thus, the loop element 104, the front strap 50 and the front member 66, cooperate in preventing wrinkling of the bag throughout the entire front thereof, and when the clamp 36 is brought against the garment to press the latter against the proximal backing strip 38, such garment will not be wrinkled during the processing of the garment through use of steam and air in the manner outlined by my patent aforementioned.

The use of the rings 54 causes the straps 50 and 52 to be held taut when a pull is exerted upon the loops 44 and 46 and in a similar manner, the rings 76 hold the straps 74 in a longitudinally taut condition when the loops 82, 84, 86 and 88 are pulled simultaneously through use of manual control 102.

The use of the four loops 82, 84, 86 and 88, together with the added advantage of the chain, pulley and cable arrangement shown in FIG. 5, multiplies the effect of pulling on knob 102 so that there may be a wide variance in the maximum and minimum diameters of the bag 10 at its lowermost zone. Also, as knob 102 is pulled to reduce the diameter of bag 10, the latter is pulled downwardly because of the difference in elevation between eyes 91 and 95 and the pipings 90 and 92.

Such increase in the amount of reduction in the effective diameter of the bag in relation to the extent of pulling of the knob 102, permits, for example, a diameter range of from 24 to 90 inches, whereas heretofore, in structures not incorporating the advantages of the present invention, the maximum range was approximately from 36 to 64 inches.

Another advantage worthy of emphasis lies in the oval configuration of the bag that is attained by the structure above described. The minor axis of such transverse elliptical shape of the bag 10, extends between clamps 36 and 38 thereby allowing more room for operation between such clamps and the bag 10 during draping of the

garment onto the bag and removal of such garment therefrom.

Still further, since the major axis of the bag extends in the opposite direction, the bag **10** more accurately conforms to the shape and configuration of most garments to be treated through the apparatus forming the subject matter of the instant disclosure.

Having thus described the invention what is claimed as new and desired to be secured by Letters Patent is:

1. In a garment finisher, a support; an upright frame member mounted on the support; a neck element spaced from the support and mounted on the member adjacent the upper end of the same; a flexible bag carried by the neck element provided with an open, fluid inlet at the lower end thereof connected to the support, and having upright, longitudinally extending, opposed front, back and side portions; elongated, flexible straps connected to the inner faces of said front and back portions of the bag respectively in a direction circumferentially of the bag; eye elements secured to respective ends of the straps; a pair of drawstring loops, each threaded through a pair of adjacent eye elements on opposed sides of the respective side margins of the bag; and means carried by the support and coupled with said drawstring loops for permitting selective increase and decrease of the effective diameter thereof whereby the extent of ballooning of the bag under pressure of fluid introduced thereinto through said inlet of the same may be varied without substantial wrinkling of said front and back portions of the bag adjacent said straps inasmuch as the loops gather only the side portions of the bag upon selective decrease of the diameter of corresponding loops.

2. A garment finisher as set forth in claim 1, wherein said straps and corresponding eye elements connected thereto are positioned substantially intermediate the ends of said bag.

3. A garment finisher as set forth in claim 1, wherein is provided piping on the inner faces of said side margins in alignment with respective opposed eye elements and slidably receiving corresponding loops.

4. A garment finisher as set forth in claim 1, wherein said straps are of substantially nonextensible material of less flexibility than that from which said bag is constructed.

5. In a garment finisher, a support; an upright frame member mounted on the support; a neck element spaced from the support and mounted on the member adjacent the upper end of the same; a flexible bag carried by the neck element provided with an open, fluid inlet at the lower end thereof connected to the support, and having upright, longitudinally extending opposed front, back and side portions; elongated, flexible straps connected to the inner faces of said front and back portions of the bag respectively in a direction circumferentially of the bag; eye elements secured to respective ends of the straps; ring means secured to the inner faces of each of the side portions of the bag intermediate said straps; and a plurality of drawstring loops, each of said loops being threaded through one of the eye elements and the ring in closest proximity thereto circumferentially of the bag; and means carried by the support and coupled with said drawstring loops for permitting selective increase and decrease of the effective diameter thereof whereby the extent of ballooning of the bag under pressure of fluid introduced thereinto through said inlet of the same may be varied without substantial wrinkling of said front and back portions of the bag adjacent said straps inasmuch as the loops gather only the side portions of the bag upon selective decrease of the diameter of corresponding loops.

6. A garment finisher as set forth in claim 5, wherein said straps, the eye element and said rings are positioned adjacent the lower extremity of said bag.

7. A garment finisher as set forth in claim 6, wherein

said rings are positioned at an elevation above that of said straps.

8. A garment finisher as set forth in claim 7 wherein is provided eye means on said support, located below said rings and slidably receiving respective stretches of said loops.

9. A garment finisher as set forth in claim 6, wherein is provided piping on the inner faces of said front, back and side portions of the bag between respective opposed ends of the straps and the ring in closest proximity thereto, each of said piping slidably receiving a respective loop.

10. A garment finisher as set forth in claim 9 wherein is provided annular structure on said support, the lower open extremity of said bag being disposed in surrounding relationship to said annular structure, there being means on said lower extremity of the bag releasably securing the latter to said annular structure and said straps, the rings and the stretches of the loops threaded therethorugh being disposed in vertically spaced relationship to said annular structure.

11. A garment finisher as set forth in claim 6, wherein is provided a retaining device attached to the front portion of the bag and engaging the neck element for maintaining a portion of the bag taut between the strap on said front portion, and the neck element.

12. A garment finisher as set forth in claim 11, wherein said device is a substantially U-shaped, flexible, metallic member having a pair of legs and bight interconnecting said legs, said device being mounted on the upper end of the bag with said legs engaging the outer surface of said front portion of the bag and the bight of the device partially circumscribing the neck element, said legs being longitudinally arcuate in a direction to complementally engage the proximal opposed surface of said bag.

13. In a garment finisher, a support; an upright frame member mounted on the support; a neck element spaced from the support and mounted on the member adjacent the upper end of the same; a flexible bag carried by the neck element provided with an open, fluid inlet at the lower end thereof connected to the support, and having upright, longitudinally extending, opposed front, back and side portions; elongated, flexible first straps connected to the inner faces of said front and back portions of the bag respectively intermediate the ends of the latter; elongated, flexible second straps connected to the inner faces of said front and back portions of the bag respectively adjacent the lower end of the same and in vertically spaced relationship to said first straps, all of said straps extending circumferentially of the bag; eye elements secured to respective ends of said first and second straps; ring means secured to the inner faces of each of said side portions of the bag intermediate said second straps; a pair of first drawstring loops, each of said loops being threaded through a pair of adjacent eye elements secured to said first straps on opposed sides of respective side margins of the bag; means carried by the support and coupled with said first drawstring loops for permitting selective increase and decrease of the effective diameter thereof; a plurality of second drawstring loops, each of said second loops being threaded through one of the eye elements secured to a respective second strap and the ring means in closest proximity thereto circumferentially of the bag; and means carried by the support and connected to said second drawstring loops for permitting selective increase and decrease thereof whereby the extent of ballooning of the bag under pressure of fluid directed thereinto through said inlet of the same may be selectively varied at the lower end and intermediate the ends thereof without substantial wrinkling of said front and back portions of the bag inasmuch as the loops gather only the side portions of the bag upon selective decrease of the diameter of corresponding loops.

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