March 8, 1960 N. C. JACKSON 2,927,718

BAG ADJUSTING ASSEMBLY FOR GARMENT FINISHING MACHINES

Filed Aug. 5, 1957

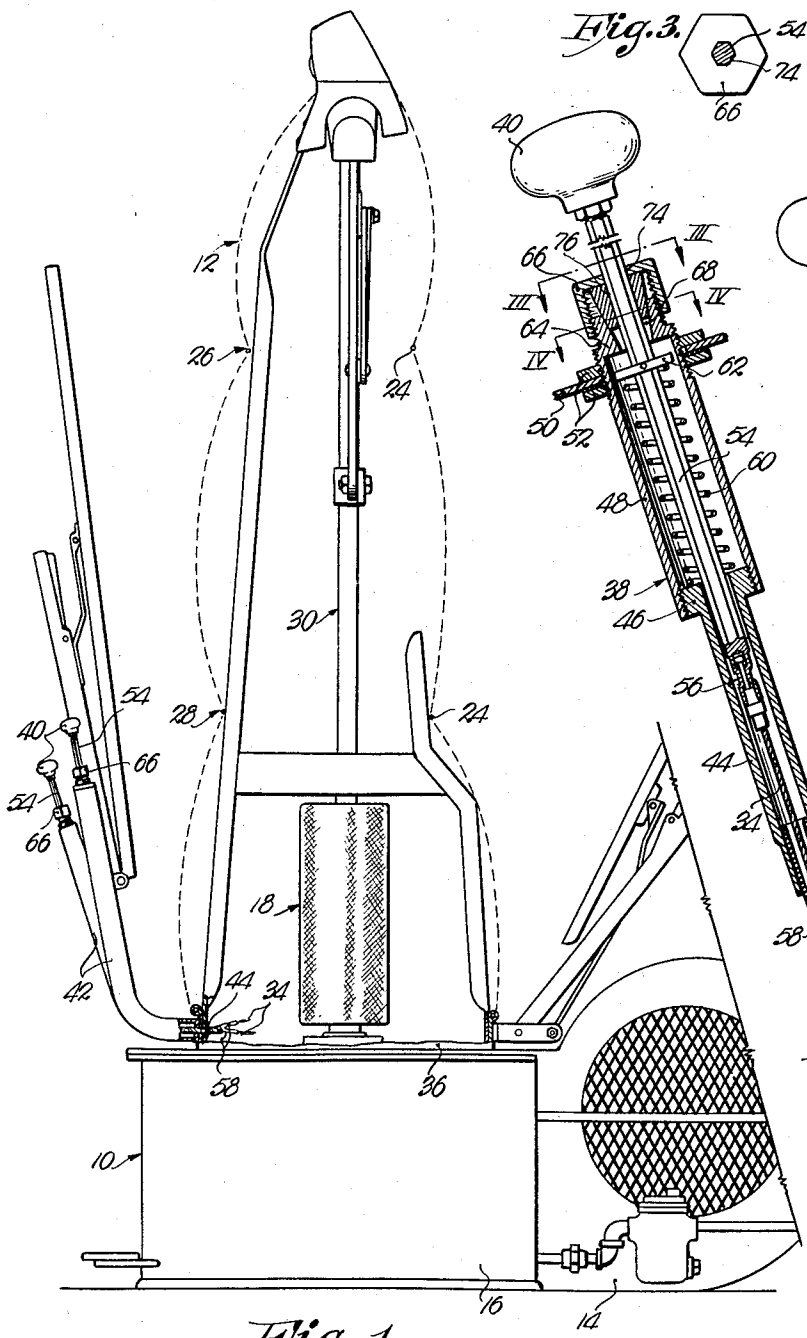


Fig. 1.

Fig. 2.

Fig. 3.

Fig. 4.

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United States Patent Office 2,927,718
Patented Mar. 8, 1960

2,927,718

BAG ADJUSTING ASSEMBLY FOR GARMENT FINISHING MACHINES

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Application August 5, 1957, Serial No. 676,295

8 Claims. (Cl. 223—67)

This invention relates to garment finishing machines in the nature of those disclosed in my U.S. Letters Patent No. 2,459,962, dated January 25, 1949, relating to Garment Finishing Apparatus.

It is the most important object of the present invention to improve upon the bag adjusting assembly for garment finishing machines of the kind set forth in the aforementioned disclosures.

More particularly, it is a primary aim of the instant invention to provide an efficient control for the adjusting assembly of the take-up means provided on the bag for regulating the distention thereof under influence of steam or air directed thereinto while a garment is draped over the bag.

Another important object of the present invention is to provide in a garment finishing machine of the kind that is equipped with an inflatable bag, yieldable means for taking up the slack in the bag at one or more areas or zones.

It is a further important object of the instant invention to incorporate novel releasable means operable in conjunction with yieldable means for preventing distention of the bag against the action of the yieldable means during the garment finishing operation.

Another important object of the present invention is to provide in a garment finishing machine having take-up means such as a drawstring in connection with an inflatable bag, a spring-loaded manual control that normally imparts a yieldable bias on the control such as to contract the bag, yet permit distention thereof under force of the steam or air against the action of the spring that forms a part of the manual control.

A still further object of the present invention is to provide in the combination just above set forth, a releasable lock for holding the control in place after the bag has been distended, whereby further expansion at the zones of the take-up means is prevented during the garment finishing operation.

There is illustrated a single embodiment of the invention incorporating the aforementioned features in the drawing, wherein:

Fig. 1 is a fragmentary, side elevational view partially schematic, showing a garment finishing machine having a bag-adjusting assembly as a part thereof and made pursuant to the present invention.

Fig. 2 is an enlarged view partially schematic and partially in section showing the bag-adjusting assembly per se.

Fig. 3 is a detailed, cross-sectional view taken on line III—III of Fig. 2; and

Fig. 4 is a detailed, cross-sectional view taken on line IV—IV of Fig. 2.

The invention illustrated in the drawing has been adapted for use in connection with a garment finishing machine of the kind shown in Fig. 1 and designated broadly by the numeral **10**. It includes an inflatable bag **12** of permeable material over which a garment (not shown) is draped during finishing operations.

During the garment finishing operation, steam and hot air are directed into the bag **12** in proper sequence. For example, there is shown in Fig. 1, blower means **14** for producing the air currents and directing the same into hollow base **16** for ultimate movement into the bag **12** and thence outwardly therethrough and through the garment being finished. In the particular machine **10** chosen for illustration, the steam emanates from a foraminous manifold or hollow body **18** carried by the base **16** thereabove within the bag **12**.

In accordance with the principles of the instant invention there is provided yieldable means for taking up the slack in the bag **12** at particular areas pursuant to the desires of the manufacturer. Accordingly, there is provided take-up structure that is preferably in the nature of drawstring means and the same is shown in Fig. 2 schematically and broadly in the form of a lariat wherein drawstring **20** is threaded through an eye **22** at one end thereof to present a loop **24**. The take-up loop **24** may circumscribe the bag **12**, but in practice is secured to the bag **12** therewithin through the medium of a hem (not shown). Thus, in Fig. 1, it is seen that there is provided a take-up loop **24** at two areas **26** and **28** on the bag **12** and that each is provided with all of the structure shown in Fig. 2, but only one assembly will hereafter be described.

Drawstring **20** is preferably secured at that end thereof opposite to eye **22**, to a rigid part of the machine **10** such as framework designated broadly in both Figs. 1 and 2 by the numeral **30**. Drawstring **20** may be trained over a pulley or the like **32** intermediate the ends thereof and a flexible cord, cable or the like **34** forming a part of the control and adapted to be pulled by the operator, is attached to the pulley **32**.

Bag **12** is normally carried by the base **16** for rotation about a vertical axis through the medium of rotatable apparatus **36** and tubular means, broadly designated by the numeral **38**, is secured to the apparatus **36** for rotation therewith and extends upwardly and outwardly from the apparatus **36** where control knob **40** is readily accessible to the operator.

The tubular structure **38** is partially housed within an outer tubular casing **42** and includes a lowermost tube **44** having a head **46** at the upper end thereof threaded within a larger, uppermost tube **48** also forming a part of the structure **38**. Tube **48** extends through upper end **50** of housing **42** and is held in place by opposed lock nuts **52** threaded thereon.

In addition to the flexible cable **34**, the manual control means for imparting a pull upon the drawstring **20**, includes an elongated rod **54** reciprocable and rotatable within the structure **38** and having its lowermost and innermost end coupled with the cable **34** through the medium of a swivel joint **56**. A flexible sheath **58** for the cable **34** extends into the lowermost end of the tube **44** and is secured rigidly thereto.

A spring **60** coiled about the rod **54** within the tube **48** is itnerposed between head **46** and an adjustable set collar **62** secured to the rod **54** within tube **48** adjacent the upper end of the latter.

An externally threaded head **64** at the upper end of tube **48**, receives an internally tapped cap **66** and is provided with a frusto-conical bore **68** that receives similarly shaped wedge means having two sections **70** and **72** which embrace the rod **54**. As noted in Figs. 3 and 4, the rod **54** is hexagonal transversely thereof and cap **66** has a similarly shaped opening **74** that slidably receives the rod **54** but does not permit rotation of the rod **54** relative to the cap **66**.

Fig. 4 illustrates also that the wedge means **70—72** has a transversely hexagonal bore **76** therethrough which slidably receives the rod **54** for reciprocation longitudinally

of tubular structure 38 and along the longitudinal axis of rod 54 which is coaxial with the structure 38.

Knob 40 is secured to the uppermost and outermost end of the rod 54 to permit manual reciprocation and rotation of the latter.

In operation, the diameter of loop 24 is increased by the action of the air or steam directed into bag 12 to inflate the latter. Conversely, the diameter of loop 24 may be decreased by exerting an outward pull on the knob 40. However, spring 60 yieldably holds the loop 24 at substantially its smallest diameter when the machine 10 is at rest with bag 12 deflated. Accordingly, at a standstill condition, rod 54 is unlocked, i.e., the cap 66 and wedge means 70—72 are loose, permitting free reciprocable movement of the rod 54.

When the machine 10 is to be placed in use, the garment to be finished is draped over the bag 12 in the usual manner. Thereupon, through use of blower 14, air is directed into the bag 12 to inflate the latter. While the spring 60 is sufficiently strong to normally hold the loop 24 in its smallest diameter as aforementioned, it is not sufficiently strong to prevent distention of the bag 12 at area 26 or 28 as the case may be, against the action of the air being directed into the bag 12 during the initial "sizing" operation. Thus, as the bag is distended, the size of loop 24 will be increased exerting a pull upon the drawstring 20 and, therefore, upon the cable 34. This pulls the rod 54 inwardly against the action of spring 60 compressing the latter.

The particular nature of the garment draped over the bag 12 will determine the extent of distention of the bag 12 particularly at the zones 26 and 28 and, therefore, as soon as the garment has prevented further expansion of the bag 12 and, therefore, increase in the size of loop 24, the operator grasps knob 40 and rotates the same to in turn rotate the cap 66. This forces the wedges 70 and 72 inwardly within bore 68 to clamp the wedges 70 and 72 tightly against the rod 54 and prevent further reciprocation thereof. It is, of course, seen that rotation of rod 54 relative to cable 34, is made possible by virtue of the swivel connection 56.

With the assembly thus locked, the operator may proceed with the garment finishing operations which include as aforementioned, direction of steam and hot air into and through the bag 12 and, therefore, through the garment as aforementioned.

Upon complete release of all pressure, the bag 12 will deflate permitting removal of the garment therefrom, whereupon the operator again rotates the knob 40 in the opposite direction to release the locking means 66, 70 and 72 and permit spring 60 to again impart a pull upon the cable 34 and the drawstring 20 to reduce the diameter of loop 24 forming a part of the take-up means. It is, therefore, seen that through use of spring 60 there is provided yieldable means for taking up the slack in the bag 12 and that during the garment finishing operation, the releasable means 66, 70 and 72 prevents distention of the bag 12 against the action of spring 60 under influence of the hot air and steam being directed into the bag 12 during the garment finishing operation.

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

1. In a finishing machine, an inflatable bag provided with structure supporting the same, there being a drawstring intermediate the ends of the bag adapted to take up the fullness thereof and hold the same against radial distention at the drawstring; and control means coupled with the drawstring and normally holding the same drawn up, said control means being resilient, rendering the same yieldable to fluid pressure in the bag and permitting extension of the drawstring during inflation of the bag whereby the diameter of the latter increases at the drawstring as said pressure increases.

2. In a finishing machine, an inflatable bag provided with structure supporting the same, there being a drawstring intermediate the ends of the bag adapted to take up the fullness thereof and hold the same against radial distention at the drawstring; control means coupled with the drawstring and normally holding the same drawn up, said control means being resilient, rendering the same yieldable to fluid pressure in the bag and permitting extension of the drawstring during inflation of the bag whereby the diameter of the latter increases at the drawstring as said pressure increases; and means for holding the drawstring against further extension after the bag has distended to a selected diameter at the drawstring.

3. In a finishing machine, an inflatable bag provided with structure supporting the same, there being a drawstring intermediate the ends of the bag adapted to take up the fullness thereof and hold the same against radial distention at the drawstring; a manually movable member operably connected with the drawstring for drawing up and letting out the latter; and control means engaging the member and normally holding the drawstring drawn up, said control means being resilient, rendering the same yieldable to fluid pressure in the bag and permitting extension of the drawstring during inflation of the bag whereby the diameter of the latter increases at the drawstring as said pressure increases.

4. The invention of claim 3, said member comprising a reciprocable rod and said control means comprising a string acting on the member to bias the same in a direction tending to draw up the drawstring.

5. The invention of claim 4 wherein is provided tubular structure reciprocably supporting the rod and housing the spring with the latter coiled about the rod.

6. In a finishing machine, an inflatable bag provided with structure supporting the same, there being a drawstring intermediate the ends of the bag adapted to take up the fullness thereof and hold the same against radial distention at the drawstring; a manually movable member operably connected with the drawstring for drawing up and letting out the latter; control means engaging the member and normally holding the drawstring drawn up, said control means being resilient, rendering the same yieldable to fluid pressure in the bag and permitting extension of the drawstring during inflation of the bag whereby the diameter of the latter increases at the drawstring as said pressure increases; and means for locking the member against movement whereby to hold the drawstring against further extension after the bag has distended to a selected diameter at the drawstring.

7. The invention of claim 6, said member comprising a reciprocable rod and said control means comprising a spring acting on the member to bias the same in a direction tending to draw up the drawstring.

8. The invention of claim 7, said rod being rotatable, said locking means including wedge structure adapted to be clamped tightly against the rod and means connected with the rod for clamping the wedge structure upon rotation of the rod.

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