Nov. 28, 1950 C. L. BADER ET AL 2,531,599

PANTS STRETCHER

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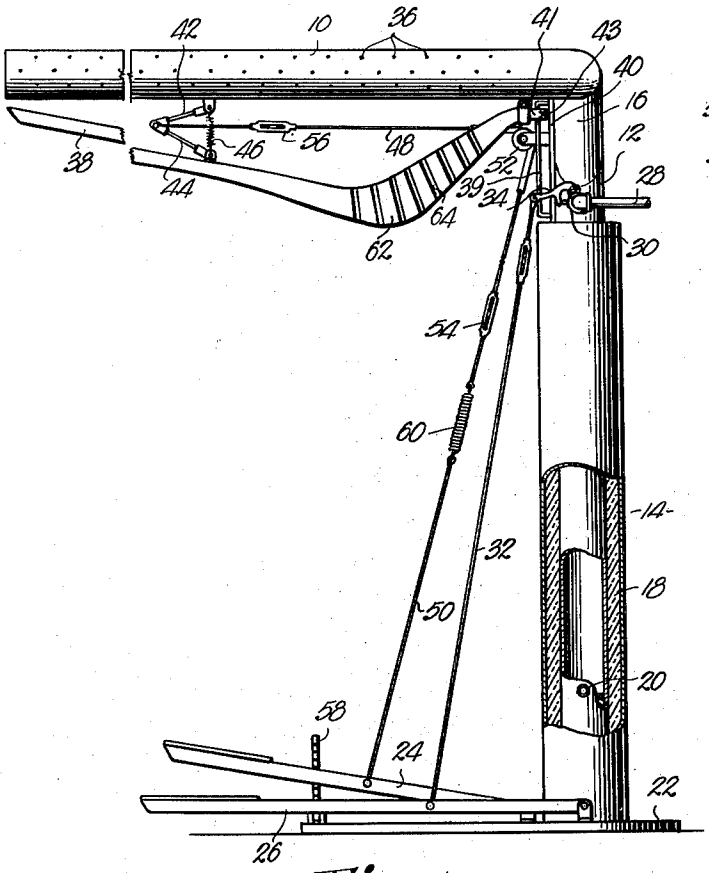


Fig. 1.

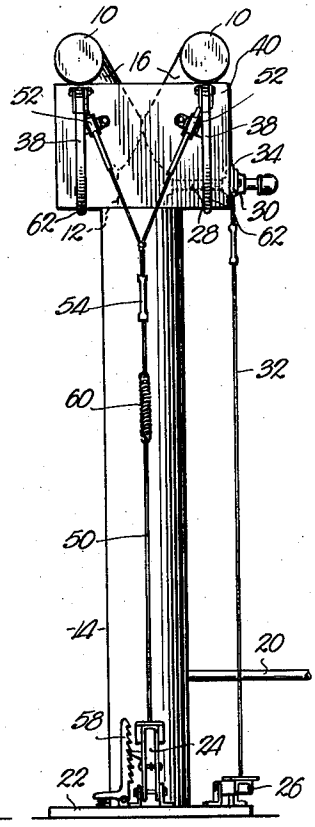


Fig. 3.

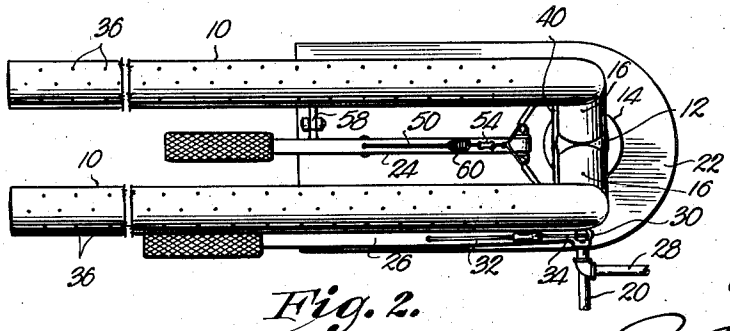


Fig. 2.

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PANTS STRETCHER

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3 Claims. (Cl. 223—73)

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This invention relates to the art of dry cleaning and pressing and has for its primary aim the provision of a garment handling machine in the nature of a pants stretcher which is employed whenever a garment has shrunk longitudinally and transversely to return the garment to its normal size after being shrunk or to stretch the garment to cause the same to assume a predetermined desirable size.

One of the important objects of this invention is the provision of a pants stretcher having means for receiving the seat and leg portions of the pants and to automatically stretch the same as the steam is directed thereinto through specially formed and disposed supports.

Another and further object of the instant invention is the provision of garment treating equipment of the aforesaid character, wherein the pants supports have associated therewith automatically operable stretching arms with means tending to transversely tension the pants seat and legs as steam is applied thereinto through the supports and as the fabric or material from which the pants is constructed becomes capable of being stretched through the application of steam or the like.

Other aims of the invention are to provide a pants stretcher with manually operable elements for initially setting the stretching arms after the pants legs are threaded upon the supports therefor; structure for tensioning the stretching arms as steam is applied to the garment after said initial setting and without further manual manipulation or operator attention; and simple, rugged and effective linkage for moving the stretching arms from the pants supports and for withdrawing the stretching arms to a normal position.

Other aims of the invention will appear during the course of the following specification, referring to the accompanying drawing, wherein:

Fig. 1 is a side elevational view of a pants stretcher made to embody the present invention.

Fig. 2 is a top plan view thereof, and

Fig. 3 is a front end elevational view of the pants stretcher.

The form of equipment chosen for illustration comprises a pair of supports 10 for the legs of the pants being stretched, which supports are in the nature of hollow normally horizontal tubes, joined at one end to a vertical pipe 12, forming a part of a standard that is generally designated by the numeral 14. Other elements of this standard are the branches 16, which merge into pipe 12 and which converge from the upper end of pipe 12 to their zone of interconnection with

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the respective supports 10. Pipe 12 is jacketed with insulation 18 and a drain 20 near the lower end of pipe 12 permits the removal therefrom of any condensate that may collect in the lower portion of pipe 12 during normal use of the machine. A base 22 upon which standard 14 is mounted serves to stabilize the equipment and also to mount a foot pedal 24 and another foot operated pedal 26. A tube 28, extending from pipe 12 to a source of steam supply, not here shown, interconnects with pipe 12 near the point where branches 16 merge therewith. A valve 30 controls the flow of steam or other fluid through tube 28 and this valve is operated by pedal 26, which is joined to said valve 30 through the medium of a cable 32 and lever 34. When pedal 26 is depressed, valve 30 is opened and steam is introduced into the upper part of pipe 12 and thence to branches 16 and into supports 10. Both supports 10 are provided with perforations 36 at spaced intervals throughout the lengths thereof that project into the pants seat and legs and it is through these said perforations that the steam escapes to contact the fabric from which the garment is made. These perforations 36 extend along the top and downwardly substantially midway along the sides of the supports 10.

Each support 10 has an arm 38 associated therewith for the purpose of applying lateral tensions to the pants into which the arm 38 is projected when the equipment is in use. Each arm 38 is slidably mounted on a vertical rod 39 extending outwardly from a plate 40 on standard 14. A bifurcated bracket 41 on each arm 38 straddles rod 39 and carries a roller 43 between rod 39 and plate 40. Thus the arms 38 may be shifted vertically toward and from respective supports 10 under the influence of the pressure links 42 and 44 formed as clearly shown in Fig. 1. Link 42 has one end pivotally joined to its corresponding support 10 and is pivotally joined to one end of link 44, the other end of link 44 being pivotally joined to arm 38. A spring 46 yieldably maintains arm 38 in the normal position near support 10 where the pants may be threaded on the support and related arm 10 and 38 respectively with the normal upper part of the pants near the plate 40.

An operating cable 48 extends from the pivotally interconnected ends of each set of links 42 and 44 to a common cable 50, as illustrated in Fig. 3. Each cable 48 passes over a sheave wheel 52, mounted on plate 40 respectively before it joins cable 50. Cable 50 is attached to pedal 24

and has a turnbuckle or the like 54 interposed therein to adjust its length. A similar length adjusting element 56 in each cable 48 must also be employed to equalize the pressure exercised when arms 38 are shifted to tightly engage the legs of the pants. A ratchet 58 mounted on base 22 has a set of teeth therein to receive a part of pedal 24 and thereby hold the same in a lowered position to maintain arms 38 against the pants legs.

A tension spring 60 in cable 50 is relatively strong but is always expanded when pedal 24 is shifted to its initial position when the pants are first threaded onto the supports and arms 10 and 38 respectively and prior to injecting steam into the pants legs through tube 28, valve 30, branches 16, supports 10 and perforations 36 in supports 10. When steam is so injected, spring 60 will contract and cause arms 38 to further move outwardly from supports 10 and thereby stretch the legs of the pants as the steam continues to be forced through perforations 36 and against the material from which the pants are made.

While the foregoing lateral extension or stretching of the pants legs is occurring, longitudinal stretching is accomplished by the operator, who grasps the cuffs or ends of the pants legs and pulls the same to a desired degree.

The form of arms 38 is such as to preclude the longitudinal slipping or displacement of the pants from supports 10. When arms 38 are in the operative position, the portions thereof between the outer free ends and the sections 62 are substantially parallel to supports 10. Sections 62, therefore, are capable of engaging the waist band and portions of the pants near the top and seat, all of which definitely precludes any slipping of the garment when the legs of the pants are being pulled longitudinally. Obviously when the pants are positioned the same are buttoned together to circumscribe the inner portions of supports 10 and the sections 62 of arms 38.

These sections 62 of each arm 38 are formed to fit the contour of the seat of the pants and have a number of transverse grooves 64 formed therein to permit passage of steam to the seat, whereby the same is stretched simultaneously with the stretching of the pants legs by the remaining lengths of arms 38.

After the garment has been stretched to the desired degree, through a continued application of steam, as above set forth, and also through a lateral and longitudinal force exerted mechanically and manually, the foot pedal 24 is released from ratchet 58 and arms 38 and returned to the normal position under the influence of spring 46 to allow removal of the pants from the equipment. Obviously foot pedal 24 may be moved downwardly to exert such force as may be needed during the time the pants are in place on the stretcher.

It is notable that the supports 10 are inclined slightly toward the branches 16 to the end that condensate will flow along the lower sides thereof which are void of perforations 36. This condensate then passes into pipe 12 and out through drain 20.

Such changes and modifications as may fairly follow within the scope of the invention may be made without departing from the spirit thereof or to the end that the physical appearance of the stretcher about to be claimed may be quite different from that illustrated in the accompanying drawing.

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

1. In a pants stretcher, a pair of spaced, substantially parallel, horizontal, elongated supports; an elongated arm for each of said supports respectively, each arm being pivotally mounted at one end thereof for swinging movement toward and away from its corresponding support, each support and its arm being adapted to receive one leg of a pair of pants when the arms are near their supports; and means for swinging the arms away from the supports when the pant legs are on the supports and arms to apply transverse tension to the pant legs, each arm being curved outwardly away from its support intermediate its ends to conform to the contour of the seat of said pants when the pant legs are on the supports and arms.

2. In a pants stretcher, a pair of spaced, parallel, horizontal, tubular supports provided with a plurality of steam outlet perforations; an elongated arm for each of said supports respectively, each arm having opposed, vertical sides and being pivotally mounted for swinging movement toward and away from its corresponding support, each support and its arm being adapted to receive one leg of a pair of pants when the arms are adjacent the supports; and means for swinging the arms away from the supports to transversely tension said pant legs, said arms each having a plurality of grooves in that face thereof adjacent the pants for receiving steam emanating from said perforations of the supports.

3. In a pants stretcher of the kind described, at least one elongated support; an elongated arm for the support mounted for swinging movement toward and away from the support, said support and said arm being adapted to receive a leg of a pair of pants when the arm is at one end of its path of travel adjacent the support; means movable to and from a position for swinging the arm away from the support, a manually operable element connected with said means for actuating the latter; and a spring interposed in said element for holding the arm biased away from the support while the element is in a position actuating said means.

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REFERENCES CITED

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

UNITED STATES PATENTS

Number	Name	Date
176,178	Howe	Apr. 18, 1876
352,891	Reynolds	Nov. 16, 1886
1,243,176	Hlubucek	Oct. 16, 1917
1,466,695	Boyuls	Sept. 4, 1923
1,791,601	Ramsdell	Feb. 10, 1931
2,067,858	Oberwetter	Jan. 12, 1937
2,092,278	Harvey	Sept. 7, 1937
2,423,509	Lendle	July 8, 1947
2,469,742	Newhouse	May 10, 1949