# United States Patent [19]

**Bailey**

[11] **3,866,808**

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[54] **PANTS PRESSER**


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[52] **U.S. Cl.** ..... **223/73**
[51] **Int. Cl.** ..... **D06c 15/00**
[58] **Field of Search** ..... 223/61, 63, 65, 72–74



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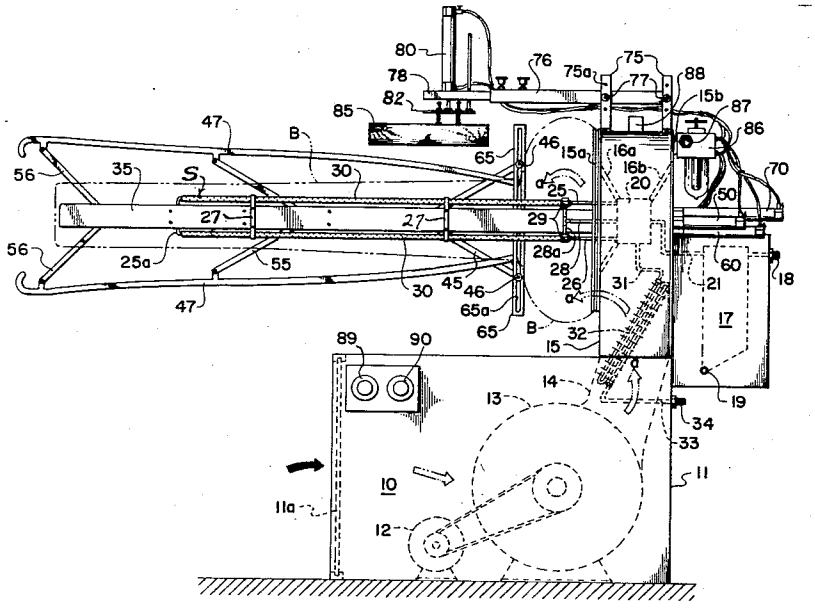
*Attorney, Agent, or Firm*—Parmelee, Miller, Welsh & Kratz



[57] **ABSTRACT**

A pants finishing or pressing machine is provided that is fully adaptable in its construction to different types of pants and pants materials, that enables a spaced operational expansive movement of both its upper and lower flexible creasing blades, and that has a steam supply system that extends forwardly along its garment-receiving permeable bag. Side-mounted pairs of upper and lower creasing blades, one for each pant leg, are provided with pairs of side-mounted spread arms that operate to expand and contract each blade of the pair at longitudinally spaced locations therealong. A two-part steam supply system extends along the operating frame of the machine and employs an inner, closed-off pipe circulating assembly and an outer, concentrically mounted, perforated tubular steam dispersing assembly. An improved fly presser is used which operates within spacing between side pairs of blades and independently of the creasing operation of such blades.


**20 Claims, 9 Drawing Figures**



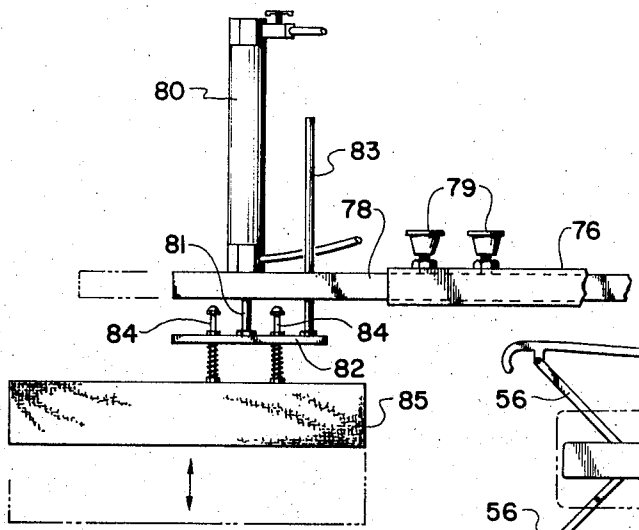



Fig. 2

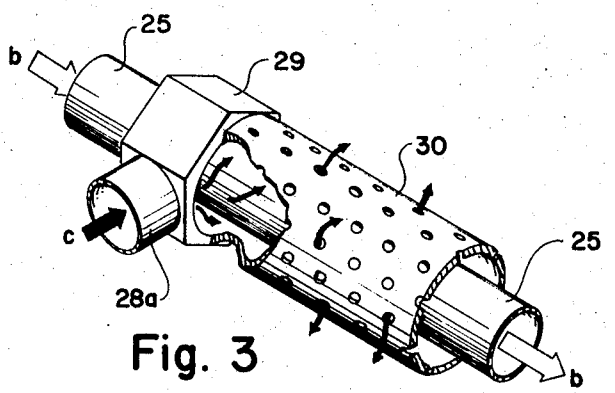



Fig. 3

Fig. 1A

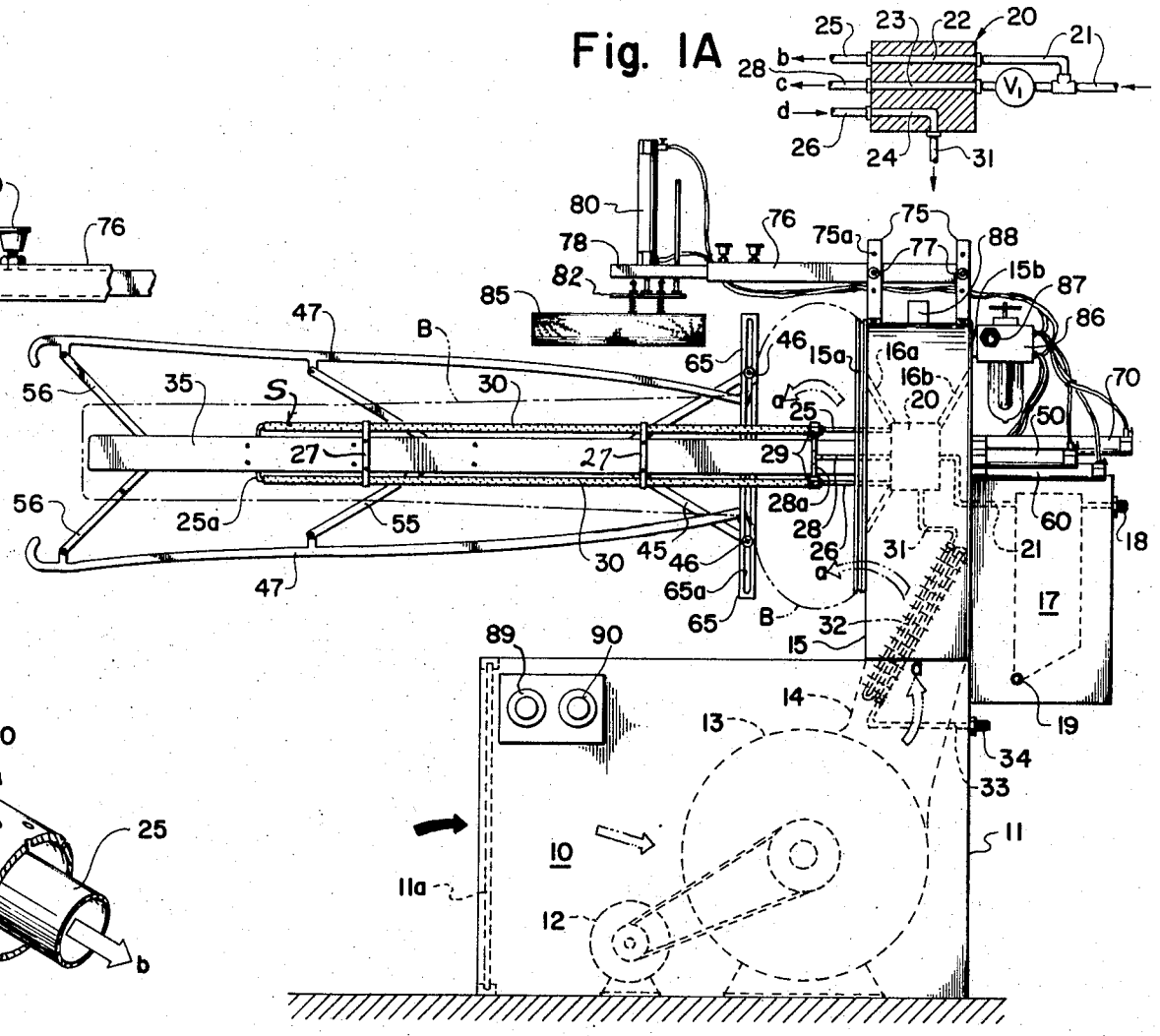



Fig. 1

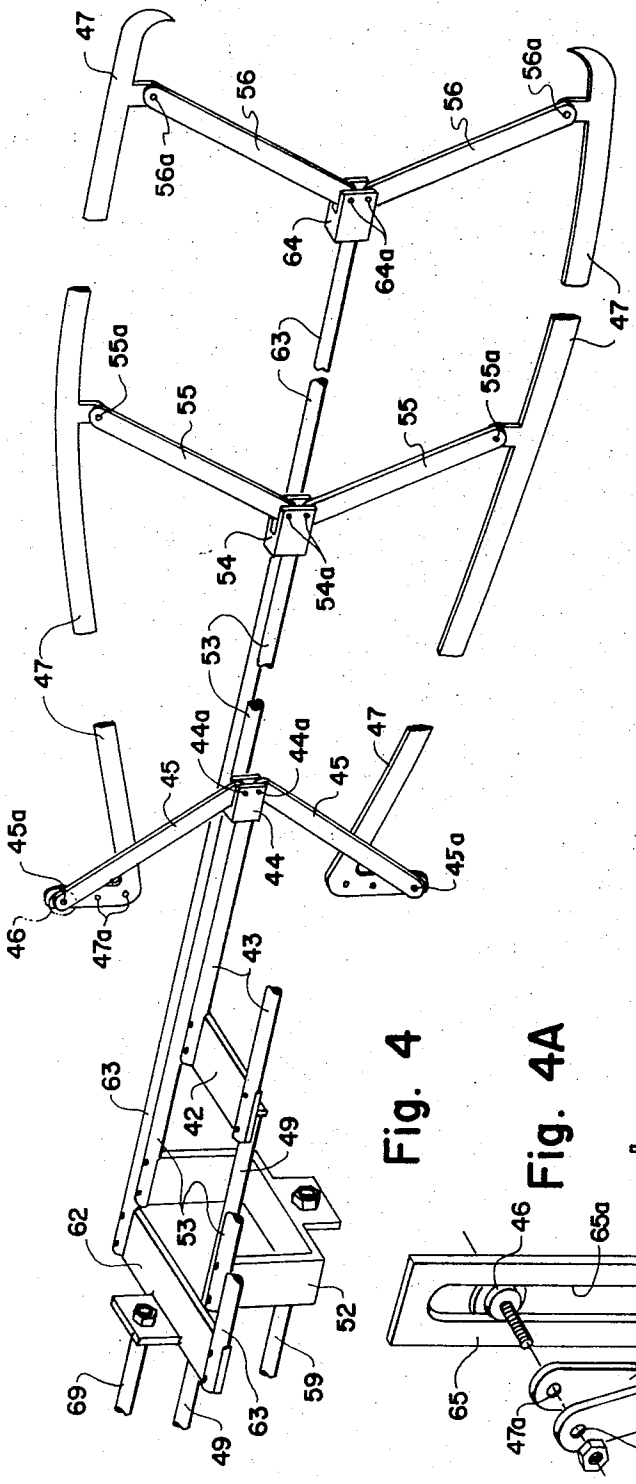



Fig. 4




Fig. 4A

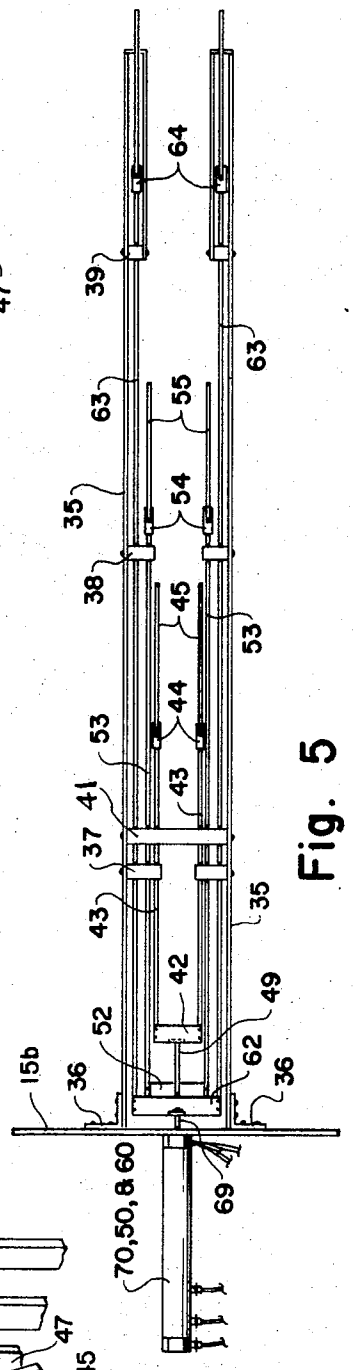



Fig. 5

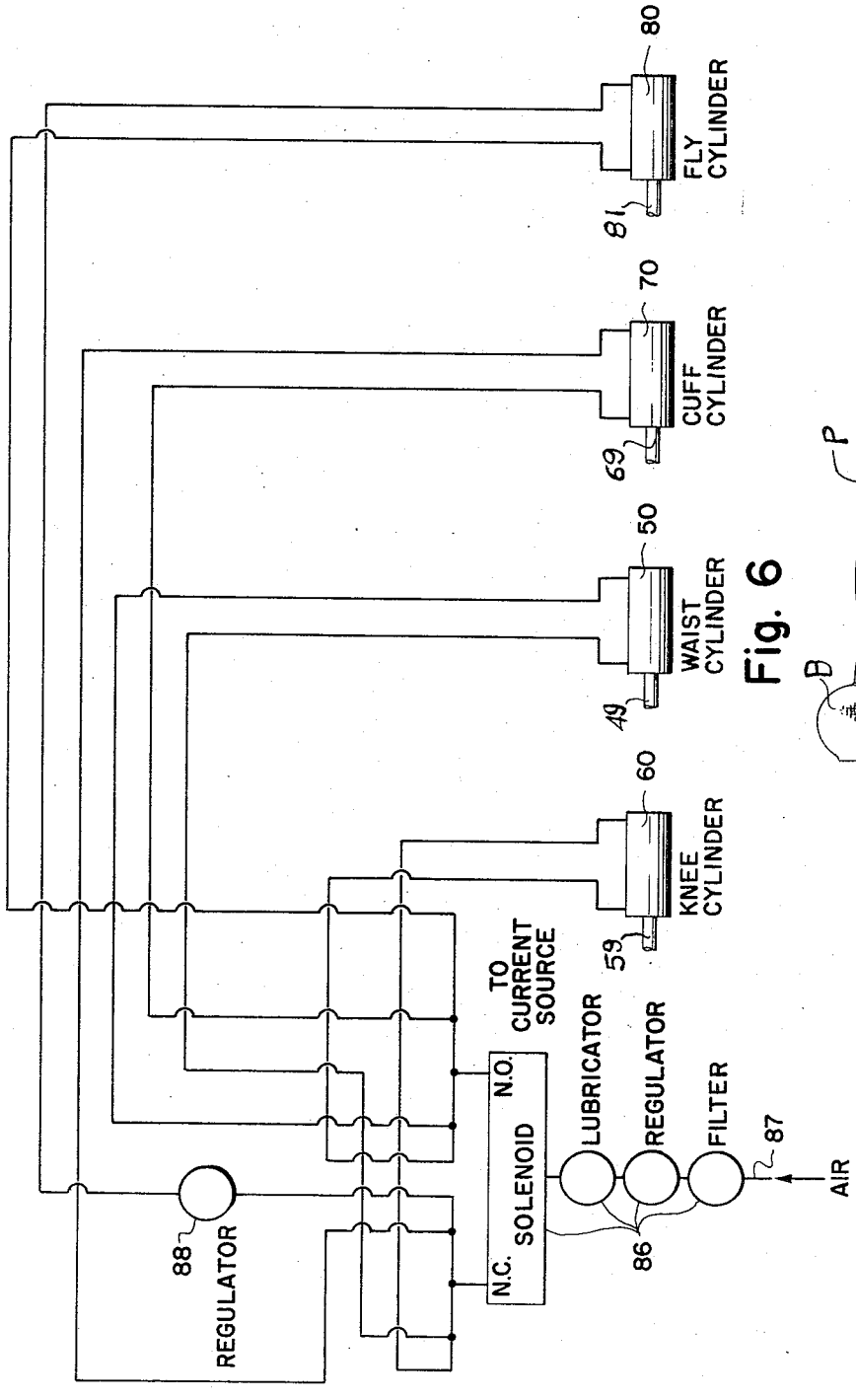

80
FLY CYLINDER
81
70
CUFF CYLINDER
69
50
WAIST CYLINDER
49
60
KNEE CYLINDER
59
TO CURRENT SOURCE
N.O.
SOLENOID
N.C.
LUBRICATOR
REGULATOR
FILTER
87
AIR
88
REGULATOR
86

Fig. 6

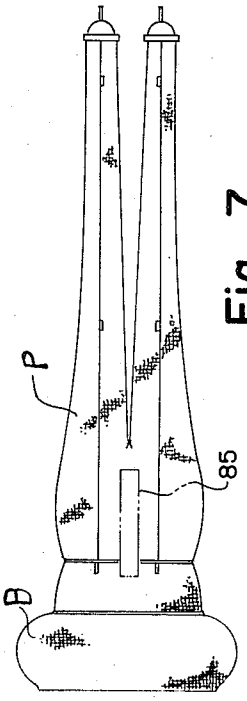

P
85
B

Fig. 7

# PANTS PRESSER

## BACKGROUND OF THE INVENTION

1. Field of the Invention

This invention relates to improved apparatus for pressing shorts, trousers, slacks and other pants-like articles of clothing and particularly, to a machine that is flexible and adaptable to the pressing and creasing of pants-like garments of different shapes or contours and made of various types of materials or fabrics.

2. Description of the Prior Art

The Paris U.S. Pat. No. 3,713,567 shows an improved pants pressing apparatus which makes use of leg pairs of endwise-extending creasing blades, with each blade having a preset, vertically adjusted position with respect to its support, and with a lower blade of each pair adapted to be moved in an inclined swing plane from a closely spaced relation with respect to an upper fixed position blade to an expanded spaced relation by a single actuating means that is operated from the head portion of the apparatus. Also, in this construction, the fly or crotch presser is so positioned as to move its pressing head in an off-horizontal or inclined relationship.

Although a machine of the type above explained has many advantageous features, it has been determined that it has limitations, particularly from the standpoint of the shape-configuration of the creasing blades to the newer types of stylized pants. Also, the many variations in fabrics raises the problem of close control of steam application and temperature, such as for relatively soft, porous and easily stretched knit fabrics, wool and cotton fabrics and fabric blends. Further, in such an apparatus the steam is introduced along with the air directly into a back open end portion of the permeable bag which is mounted on the supporting head of the apparatus. As a result, there is the problem of uniformity of steam temperature and application along the length of the garment. There has been a need for an application of the steam that can be accomplished at a substantially uniform temperature along the full extent of the garment, in order that the most effective temperature for the garment's fabric content may be used for the finishing operation.

## SUMMARY OF THE INVENTION

It has thus been an object of the invention to devise a new and improved form of pants pressing machine which will assure an increased flexibility of its utilization.

Another object has been to develop a machine that will provide a quicker and improved type of garment finishing operation and that may be better controlled as to its operating temperature and characteristics.

A further object of the invention has been to devise an improved fly presser utilization, an improved steam type of application, and an improved type of blade shape conforming control.

These and other objects of the invention will appear to those skilled in the art from the illustrated embodiment and the description thereof.

## BRIEF DESCRIPTION OF THE DRAWINGS

In the drawings, FIG. 1 is a side view in elevation illustrating a presser constructed in accordance with the invention; in this figure side creasing blades are shown in an intermediate position from the standpoint of the spacing therebetween, and a permeable garment bag has been shown in an operating position by dot and dash lines.



FIG. 1A is an enlarged side section in elevation showing details of the construction of and the fluid connections to a steam distribution header that is employed in the apparatus of FIG. 1;

FIG. 2 is an enlarged fragmental side view in elevation, particularly illustrating the construction and operation of a fly or crotch pressing apparatus part of the apparatus shown in FIG. 1; the solid lines show a presser head in its withdrawn position and the dot and dash lines show it in its pressing position. Also, dot and dash lines illustrate endwise adjustment that may be effected of a support bar that carries the presser head;

FIG. 3 is a further enlarged fragmental isometric view showing details of the construction of a closed-off pipe member and perforated tubular distributor assembly or system for providing an improved outflow distribution of steam along the inside of the length of leg portions of a permeable bag; it also shows the relation of the tubular distributor with respect to the closed-off inner pipe through which steam flows to supply additional heat to the steam that is out-flowing from the tubular distributor;

FIG. 4 is a broken-away plan view on an enlarged scale with respect to FIG. 1, particularly illustrating a blade operating structure or frame that includes side pairs of spread arms at longitudinally spaced locations, and drive members for expanding and contracting the spread arm pairs;

FIG. 4A is a greatly enlarged exploded fragment showing the guidable mounting of back end portions of side blade pairs and of back pairs of spread arms to assure a vertically aligned expansion and contraction of upper and lower blade members of each side pair;

FIG. 5 is a top plan view on a reduced scale with respect to FIG. 4 and on the same scale as FIG. 2, further illustrating creasing blade supporting and operating structure of the apparatus of FIGS. 1 and 4;

FIG. 6 is a schematic diagram for air utilization in operating individual fluid motors or cylinders for fly pressing, and for blade expansion to crease the waist, the knee and the cuff portions of a pair of pants;

And, FIG. 7 is a greatly reduced diagrammatic top plan view of the apparatus of FIG. 1 showing a pair of pants in position on its permeable bag for accomplishing a finishing or pressing operation.

## DESCRIPTION OF THE PREFERRED EMBODIMENT

Referring particularly to FIG. 1 of the drawings, a finishing or pressing mounted machine is shown that has a floor mounted base support and air supply unit or part **10.** The unit **10** has an enclosing housing **11** that is open at one end and provided with a screen **11***a* for admitting air therein; see the arrows. Air introduced into the housing **11** is forced by a blower **13** that is driven by a suitable means, such as an electric motor **12,** under positive pressure upwardly along a duct **14.** As shown by the arrows *a*, the air enters an open bottom end portion of an upwardly positioned and forwardly open, hot fluid supplying head **15.** The air is heated in its upward movement through the agency of a heat exchanger **32** that is positioned within the duct **14** and the lower portion of the head **15.** The exchanger **32** is shown supplied with used steam that is supplied

by discharge piping **31** from a steam header unit **20.** Discharge of cooled steam from the exchanger **32** is accomplished through downstream piping **33,** and discharge or outlet nipple **34** that is mounted on the housing **11.** Such exhaust flow may be discharged to the atmosphere or returned to a suitable steam generator.

The heated air is adapted to flow through the open back end portion of a permeable garment-receiving fabric bag B of a suitable material such as nylon. It will be noted, as shown in FIGS. **1** and **7,** that the bag B has an enlarged open end portion that is adapted to be mounted on a front, opening-defining flange **15***a* of the head **15** to extend forwardly therefrom along a pair of transversely spaced-apart, parallel, side-by-side longitudinally extending support arms or members **35** of a frame or support structure. The support members **35** (see FIG. **5**) are secured at their back ends by angle pieces **36** to extend forwardly from a back end wall plate **15***b* of the header **15.** One or more cross ties **41** may be used to secure the members **35** together at spaced locations along their lengths. Each support member **35,** through the agency of pillow blocks **37,** carries associated side pairs of spread arm and creasing blade assemblies.

Each support member **35** carries a pair of operating side frames of the same or identical construction which are adapted to extend along the inside portions of the legs of a pair of trousers or pants. With particular reference to FIGS. **1, 4** and **5** of the drawings, there are a pair of identical, full length, upper and lower flexible creasing blades **47** (preferably of metal construction) along each side of the structure. Longitudinally spaced-apart, side pairs of upper and lower spread arms **45, 55** and **56,** at their outer ends, are pivotally connected at **45***a*, **55***a* and **56***a* at spaced locations along the blades **47** of each side blade pair. The spaced spread arm pairs along each side are of similar construction, but the back or rearmost pair **45** has pins **45***a* which carry a flanged roller spool or thimble **46** thereon for guided movement along a closed-end slotted portion **65***a* that extends within a vertical guide part or member **65,** see also FIG. **4A.** A pair of guide members **65** are secured to project vertically upwardly and downwardly from a back portion of each of the support members **35** to receive the rollers or spools **46** which are also carried at the back ends of the associated pair of blades **47.**

As shown in FIG. **4,** the spread arms **45** of each back pair may be adjusted in their pivoted connection to the back ends of the associated pair of upper and lower side blades **47** through the agency of vertically spaced-apart holes in dog-leg shaped ends of the blades. It will also be noted that the spread arm pairs **45** break or have their inner ends extending in an opposite direction to the pairs **55** and **56.**

The guide parts **65** positively limit the relative movement of the blades **47** to a controlled vertical movement that is restricted from being an inclined or off vertical movement, such that the inner and particularly the outer spreading movement of the side pairs of upper and lower blades **47** with respect to each other is accurately accomplished in a vertical plane to substantially fully conform to a desired outward expansion of the legs of a pair of pants. The use of a guide member **65** mounted on the inside of an associated support member **35** of the transversely spaced-apart pair, thus serves as a positive control for the spreading and contracting or space increasing and decreasing movement between upper and lower blades **47** of each side pair that is carried by an associated support member **35.**

As shown particularly in FIG. **1,** the steam header **20** may be mounted centrally within the head **15** through the agency of spider arms **16***a* and **16***b*, with back arm **16***b* cooperating with the back wall **15***b* and the front arms **16***a* cooperating with front, opening-defining circular, reinforcing flanges **15***a*.

As shown particularly in FIGS. **4** and **5,** the rearwardly positioned pairs of spread arms **45** which are carried along each side of the frame structure, are at their upper ends directly pivotally connected by pins **45***a* to the ends of an associated side pair of blades **47.** At their inner ends the spread arms **45** of each side pair are pivotally connected by pins **44***a* within a bifurcated bracket **44** that is secured on the end of one side-positioned drive member or rod of a pair of transversely spaced-apart rods **43** which are of a length to operate a back set of spread arms **45.** Each set of spread arms **45,** as well as of spread arms **55** and **56,** is composed of side-positioned, transversely spaced-apart and aligned side pairs of spread arm members that are carried along the side of an associated support member **35** of each pair.

There are a pair of parallel drive or operating members **43, 53** and **63** of appropriate lengths pivotally connected in a manner shown in FIGS. **4** and **5** to bifurcated brackets **44, 54** and **64** of sets representing transversely opposite, aligned side pairs of spread members **45, 55** and **56.** As exemplified, the pair of drive members **43** are connected together at their back ends to a cross-connector member or part **42** for accomplishing a simultaneous pivotal expanding and contracting operation of blades **45** of the rear set. In a like manner, drive member or rod pairs **53** and **63** are connected together at their back ends to cross connector members or parts **52** and **62** for respectively expanding and contracting side-positioned spread arm pairs **55** and **56.** As a result, as will be appreciated from a study of FIG. **7** in view of FIGS. **4** and **5,** the upper and lower side pairs of creasing blades **45** may be simultaneously expanded and contracted at each location therealong by the same amounts, or in different amounts, as controlled by the direction and amount of forward and backward movements of the drive members **43, 53** and **63.**

Each cross connector member **42, 52** and **62** is controlled or actuated in its back and forth or reciprocating type of movement by a centrally connected piston rod **49, 59** or **69** of an individual, fluid motor means or cylinder, respectively designated as **50, 60** and **70** in FIGS. **1** and **6.** These motors are shown as positively driven in their forward and backward movements. The piston rod **49,** as compared to the rods **59** and **69,** in its forward movement, will have a different type of action from the standpoint of spread arm pairs **45.** That is, a forward movement of the piston rod **49** will cause a forward movement of the bifurcated connecting part **44** to thus move the spread arm pairs **45** forwardly in an inward, collapsing direction. A reverse or backward movement of the piston rod **49** will, on the other hand, tend to expand the arm pairs **45** and increase the distance between the associated pair of creasing blades **47.** The action of the piston rods **59** and **69** with reference to the spread arm pairs **55** and **56** is the direct opposite, in that a forward movement of the piston rods **59** and **69** will tend to straighten or expand the spread arm pairs **55** and **56,** while a backward withdrawing

movement will tend to collapse them with respect to the cooperating members of each pair and thus reduce the spacing between upper and lower creasing blades **47.**

As shown particularly in FIGS. **1** and **7,** the permeable bag B, when placed in position, serves as a means for not only giving a protective support for the pants P that are to be finished, but also provides a means for introducing hot air and steam through its interstices into the inner portions of the pants, after the side-positioned creasing blade pairs **47** have been expanded to the correct shape for the particular type of pants involved, whether of a bell bottom or narrow type, of short length or otherwise. The bag B extends over the full extent of the pair of support members **35,** as well as along the operating connector members **42, 52** and **62,** the inner, pivotally connected ends of the side-positioned pairs of spread arms **45, 55** and **56,** and essentially, along the full length extent of a forwardly positioned. two-part, steam supply assembly or system S. The steam supply system S is carried along and by an associated support member **35** by means of vertically extending, bolt-mounted pairs of clamping members **27.** One part of each clamping member pair **27** extends along the inner side and the other member of the same pair extends along the outer side of an associated support member **35.**

Steam is supplied by a conventional generator (not shown) to an inlet fitting or nipple **18** of a housing-enclosed, steam condensate separator and trap unit **17** (see FIG. **1**). Liquid collected in the trap of the unit may be taken off through side-mounted drain hole **19.** Steam leaves the unit **17** along supply line or pipe **21** and, as shown particularly in FIG. **1A,** is introduced through two branch lines into passageways **22** and **23** in a steam distribution header unit **20.** A shut-off and control valve $V_1$ is shown in a branch of the line **21** which connects to the inlet of the passageway **23.** The header **20** may be employed for distribution of steam received from a generator or boiler and employing the system S along each side-positioned support member **35** by providing two branch lines or piping **25, 26** and **28** leading therefrom.

Steam is supplied through the passageway **22** to an outlet (see arrow *b*) which constitutes the inlet to each of a side-positioned pair of forwardly extending distribution assemblies or systems S. Each system S has a continuous, U-shaped, closed-off pipe loop assembly comprising a complete circuit having an upper length portion **25,** a front end cross-connecting portion **25***a,* and a return-flow length portion **26.** Steam flows, as shown in FIG. **1,** forwardly along the piping **25** and **26***a* (see the arrow *b*) and returns along the piping **26** (see the arrow *d*). The return flow is introduced into the header **20** through an inlet into an exhaust passageway **24** to, in turn, flow through line or piping **31** into the inlet end of the heat exchanger **32.** In this manner, residual heat retained by the steam which flows in a continuous path along the inside piping of the assembly S is utilized in the heat exchanger **32** for heating the air which is being supplied upwardly (as shown by the arrows *a*) along the duct **14** and into the back, open-end of the bag B.

Steam is also supplied from the header **20** through centrally disposed passageway **23,** as controlled by the valve $V_1$, to an inlet pipe **28** and thence to a cross-extending connector pipe **28***a* to back ends of each of a pair of upper and lower positioned, forwardly longitudinally extending, perforated tubular, sleeve-like steam distribution members **30.** As shown in FIGS. **1** and **3,** the cross-extending connector pipe **28***a* introduces the steam to inner ends of the members **30** through end connectors **29** that space the members **30** in a concentric, extending relation along the closed piping **25** and **26.** In this manner, heat from the closed loop assembly will be supplied to steam flowing along the spacing between the walls of the piping **25** and **26** and the sleeve members **30.**

Steam being introduced from the piping **28** (see arrows *c*) is actively flowed out through the open hole portions or screen-like perforations in the members **30,** substantially along the full extent of each support member **30** and substantially along the full extent of the leg portions of the bag B that extend therealong. Thus, flow into the pair of upper and lower perforated sleeves **30** directly supplies steam along substantially the full length of a pair of pants placed on the bag B for finishing. The type of steam supply assembly or system S enables a better control of temperature and a more uniform temperature application of steam along the length of the pants or trousers that are being processed.

With particular reference to FIGS. **1** and **6,** a typical suitable fluid operating system is shown for controlling the expanding and contracting movement of the side pairs of spread arms. As shown, air under positive pressure, as supplied by a suitable source such as a motor-driven compressor, is introduced through fitting **87** into a unit which has a filter, a regulator, a lubricator and an electrical solenoid. The fluid motor **50** which may be termed a double-acting fluid cylinder, operates the spread arm sets which include the side pairs of spread arms **45** for the waist portion of a pair of pants being finished. Fluid motor **60,** in like manner, through the agency of its piston rod **59,** is adapted to operate a set of intermediately located, side-positioned spread arm pairs **55** for knee portions of the pants. Fluid motor **70,** through the agency of its piston rod **69,** is adapted to operate the pair of side-positioned drive members **63** to actuate the foremost set of side-positioned pairs of spread arm pairs **56** for cuff portions of the pants.

Fluid motor **80** is employed to drive a piston rod **81** that, as shown in FIGS. **1** and **2,** extends vertically downwardly through a forwardly extending, supporting, slide bar member **78** to, at its inner end, carry a cross head plate member **82** thereon. Movement of the member **82** is guided through the agency of a rod **83** secured thereto which slidably extends upwardly through the bar member **78** to assure an accurate vertically guided operation of the member **82.** A fabric-covered presser head **85** is shown suspended from a pair of spaced-apart bolt mounts that carry expansion or tension springs to provide it with a flexible mounting. The supporting bar member **78** is shown slidably carried within a box-like, rectangular or channel-shaped supporting housing **76** that is secured, as by bolts **77** (see FIG. **1**), to extend forwardly from a pair of upright stands or mounting brackets **75.**

The pair of spaced-apart brackets **75** are secured to extend upwardly from the housing of the head **15.** To adjust the vertical positioning of the support box or channel member **76,** the stands **75** are provided with vertically spaced-apart, through-extending holes **75***a* within which bolt and nut assemblies **77** may be positioned. The stands **75** are of bifurcated construction

and are open downwardly along the full vertical positioning of the adjustment holes 75*a*. Inner and outer adjustment of support bar member 78 in its mounted relation with respect to the supporting housing 76 may be accomplished by releasing a pair of thumbscrews 79 which are threadably carried by housing 76 and adapted to frictionally engage and hold the member 78 in a selected, forwardly extended, adjusted positioning with respect thereto.

The machine provides a fine straight finish of pants-like garments without over or under stretching them, and without danger of localized heat-scorching of the fabric. The operations may be controlled electrically to provide a desired sequence and timing thereof. The closed-off piping helps to maintain the hot fluid along and at length portions of the support members at a desired and substantially uniform temperatures as supplied by the perforated tubular members.

I claim:

**1.** In a pants finishing machine having a base support and an upwardly positioned hot fluid supplying head thereon, a pair of transversely spaced-apart longitudinally forwardly extending support members, a side pair of upper and lower longitudinally forwardly extending creasing blades operatively positioned along each of said support members, cooperating upper and lower spread arms in the form of side pairs operatively connected at their outer ends to an associated side pair of said blades, and drive means operatively carried by said support members and connected to inner ends of said spread arm side pairs for expanding and contracting spacing between the upper and lower arms of said side pairs of spread arms to enlarge and shorten spacing between the associated side pair of creasing blades.

**2.** In a pants finishing machine as defined in claim **1,** said drive means having a pair of drive members along each of said support members, each said pair of drive members being adapted to reciprocate along an associated one of said support members, and means carried by each of said support members for slidably retaining the associated pair of drive members thereon.

**3.** In a pants finishing machine as defined in claim **2,** the upper and lower spread arms of each said side pair being pivotally connected together and to an associated drive member of said pair at their inner ends.

**4.** In a pants finishing machine as defined in claim **1,** said creasing blades being of flexible construction.

**5.** In a pants finishing machine as defined in claim **4,** said spread arm side pairs comprising a group of longitudinally spaced-apart spread arm side pairs connected at spaced locations along and at their outer ends to an associated side pair of said creasing blades for enlarging and shortening the distance between said blades at longitudinally spaced locations therealong.

**6.** In a pants pressing machine as defined in claim **5,** the spread arms of each pair of said group being pivotally connected together and to said drive means at their inner ends.

**7.** In a pants finishing machine as defined in claim **5,** the spread arms of each pair of said group being pivotally connected together at their inner ends, and said drive means having a longitudinally extending drive member for each of said side spread arm pairs, each said drive member being operatively connected to inner ends of the associated spread arm pair of said group for independently expanding and contracting said side arm parts at each longitudinally spaced location.

**8.** In a pants finishing machine as defined in claim **5,** guide means carried by said support members and cooperating with back end portions of said side-positioned creasing blade pairs and an associated group of said side spread arm pairs for guidably limiting expanding and contracting movement of said creasing blades to a substantially vertically aligned movement thereof.

**9.** In a pants finishing machine as defined in claim **1,** said side pairs of spread arms comprising a longitudinally spaced-apart group of pairs along each of said support members that are in a transversely spaced-apart and aligned relation with respect to a corresponding group of pairs along the other of said support arms to provide transverse sets of transversely aligned side pairs of said spread arms along said support members, said drive means comprising a group of pairs of transversely spaced-apart longitudinally extending drive members for and having an operative forward connection to inner ends of each of an associated transverse set of said spread arm pairs, a cross connector member connecting back ends of the drive members of each of said pairs together, and actuating means connected to each said cross connector member for reciprocating the associated pair of said drive members.

**10.** In a pants finishing machine as defined in claim **9,** said actuating means comprising a separate fluid motor connected to each of said cross connector means for effecting reciprocating movement of said sets of spread arm pairs at spaced locations along said pairs of creasing blades.

**11.** In a pants finishing machine as defined in claim **1,** means for supplying hot fluid along length portions of said support members at a substantially uniform temperature.

**12.** In a pants finishing machine as defined in claim **1,** guide means secured to project transversely upwardly and downwardly from said support members and having vertically extending closed-end slotted portions, and flanged roller means carried by end portions of said side pairs of creasing blades and guidably positioned within the slotted portions of said guide means for guiding spacing enlarging and shortening movement of the upper and lower blades of said side pairs.

**13.** In a pants finishing machine as defined in claim **12,** outer ends of the upper and lower spread arms of a side pair of said spread arms being pivotally connected to a corresponding side pair of upper and lower creasing blades at said roller means.

**14.** In a pants finishing machine as defined in claim **1,** an overhead frame mounted on the fluid supplying head and extending longitudinally forwardly therefrom to a position adjacent a back end portion of said side pairs of creasing blades, a fly pressing head operatively suspended from said overhead frame for up and down movement within transverse spacing between said side pairs of creasing blades, and drive means carried by said overhead frame for periodically moving said fly pressing head into and out of a down position.

**15.** In a pants finishing machine as defined in claim **14,** said overhead frame comprising a hollow sleeve member open at its forward end and a slide bar member operatively positioned within said sleeve member for forward and backward adjustable movement therewithin, said drive means being a fluid motor carried by

said slide bar member and having a piston rod extending downwardly therethrough, a cross-head carried by the lower end portion of said piston rod, flexible mounting means extended from said cross-head and connected to said fly pressing head for moving the latter in a substantially horizontal plane vertically upwardly and downwardly with respect to said slide bar member, and means cooperating with said fluid motor for positively moving said piston rod both upwardly and downwardly.

**16.** In a pants finishing machine as defined in claim **14**, a permeable garment-mounting finishing bag having an open back end portion carried by the fluid supplying head to receive hot fluid supplied thereby, means for supplying steam along the bag and hot air from the head into the back end portion of said bag, and forward portions of said bag extending along and in an enclosing relation about each of said support members for receiving a pair of pants thereon.

**17.** In a pants finishing machine as defined in claim **1**, a longitudinally forwardly extending pipe loop assembly positioned along each of said support members for flowing hot steam therealong in a continuous path, means for supplying steam to inner end portions of said pipe loop assemblies, perforated tubular members extending in a spaced relation along length portions of said pipe loop assemblies for dispersing steam along said support members, and means for supplying steam to inner ends of said perforated tubular members.

**18.** In a pants finishing machine as defined in claim **17**, a steam distribution header carried within the fluid supplying head and having a steam supply outlet connected to one end of said pipe loop assemblies, a steam supply return connected to the other inner end of said pipe loop assemblies, means for supplying hot steam to said header and therethrough to said supply outlet into said pipe loop assemblies, a second steam outlet in said header connected to inner ends of said perforated tubular members for supplying steam thereto, an air supply duct extending upwardly from the base support into the fluid supplying head, a heat exchanger in said air supply duct for heating air entering the fluid supplying head, and a steam outlet from said header connected to said heat exchanger for supplying used steam thereto that has been circulated through said pipe assemblies.

**19.** In a pants finishing machine as defined in claim **18**, a pants-receiving permeable garment-mounting finishing bag having an open back end portion carried by the fluid supplying head to receive heated air from said duct, and said bag having two forwardly extending leg portions to enclose said support members, said pipe loop assemblies and perforated tubular members to receive hot steam through the perforations of said tubular members.

**20.** In a pants finishing machine having a base support and an upwardly extending hot fluid-supplying head thereon, a longitudinally forwardly extending support frame having a pair of transversely spaced-apart support members carried by the head, a side pair of longitudinally forwardly extending upper and lower creasing blades along each of said support members, longitudinally spaced-apart side pairs of upper and lower spread arms pivotally connected at their outer ends between an associated side pair of said creasing blades, each side pair of said upper and lower spread arms along one of said support members being in a transversely aligned and spaced relation with a side pair of said upper and lower spread arms along the other of said support members to provide a cooperating set of spread arms, a pair of transversely spaced-apart and longitudinally forwardly extending reciprocating drive members for each said set of spread arms and guidably carried by an associated one of said pair of support members, each pair of spread arms of each set being pivotally connected at their inner ends to an associated drive member for expanding and contracting movement with respect to each other and independently of other sets of said spread arms for enlarging and shortening the spacing between upper and lower blades of said side pairs of creasing blades at longitudinally spaced-apart locations therealong.

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