

Feb. 18, 1969

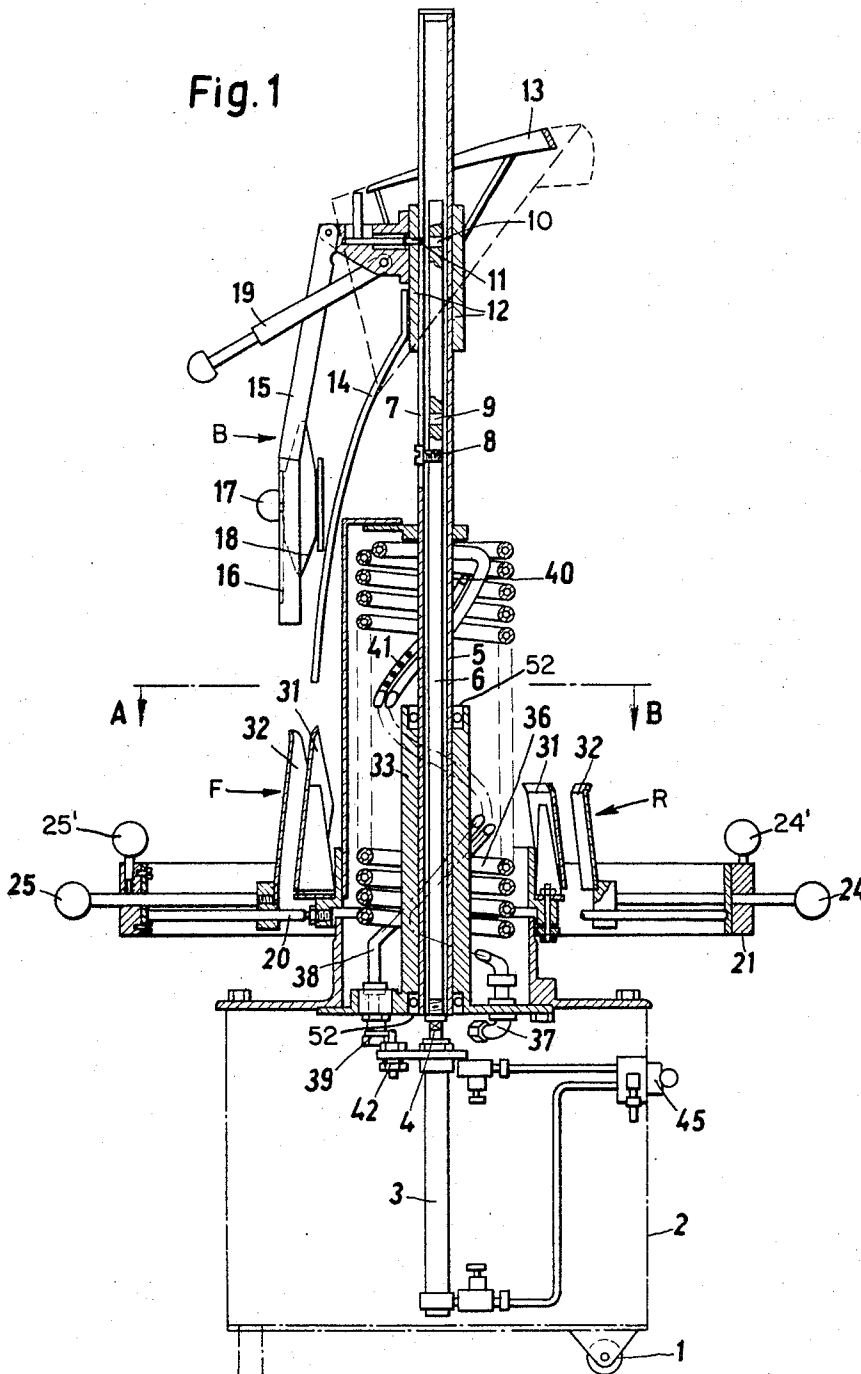
M. FRAUENDORF

3,428,228

GARMENT-TREATING MACHINE FOR OUTER COATS AND JACKETS

Filed Nov. 15, 1966

Sheet / of 4



Inventor:
MANFRED FRAUENDORF

BY *Robert H. Juncos*

AGT

Feb. 18, 1969

M. FRAUENDORF

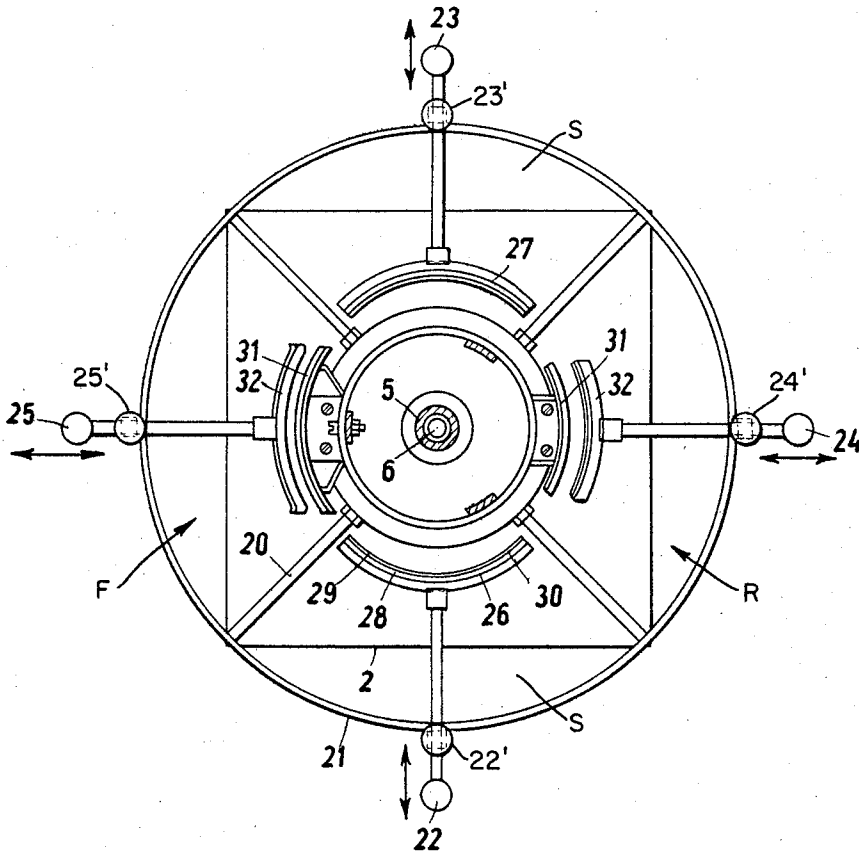
3,428,228

GARMENT-TREATING MACHINE FOR OUTER COATS AND JACKETS

Filed Nov. 15, 1966

Sheet 3 of 4

Fig. 3



Inventor:
MANFRED FRAUENDORF

BY *Robert H. Faust*

AGT.

Feb. 18, 1969

M. FRAUENDORF

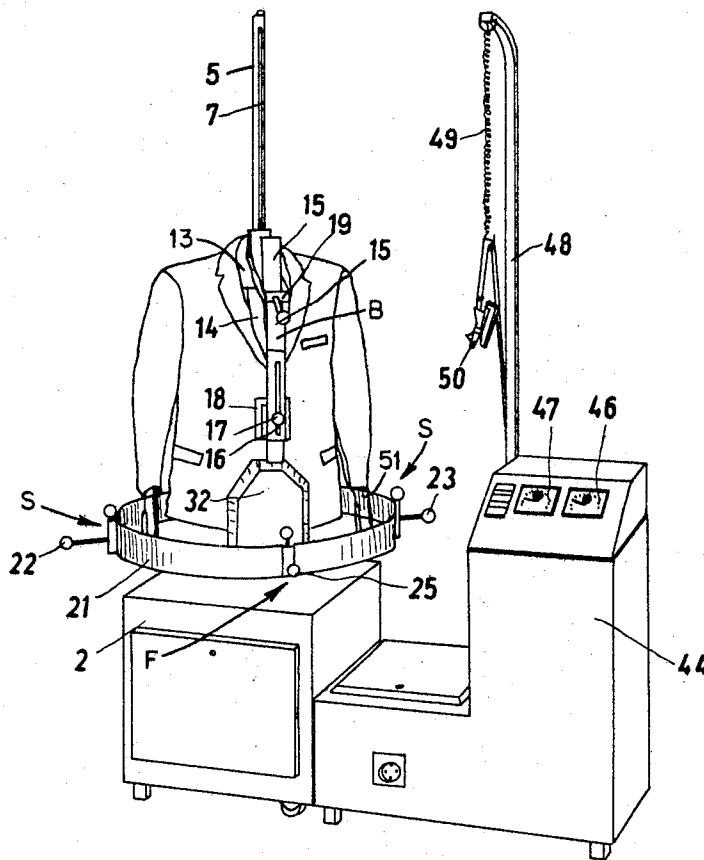
3,428,228

GARMENT-TREATING MACHINE FOR OUTER COATS AND JACKETS

Filed Nov. 15, 1966

Sheet 4 of 4

Fig. 4



Inventor:
MANFRED FRAUENDORF

BY *Robert H. Jacob*

AGT

1

3,428,228

GARMENT-TREATING MACHINE FOR OUTER COATS AND JACKETSManfred Frauendorf, Lortzingstr. 1,
Nuremberg, Germany

Filed Nov. 15, 1966, Ser. No. 594,556

Claims priority, application Germany, Mar. 26, 1966,
N 28,274

U.S. Cl. 223—70

Int. Cl. A41h 5/00

9 Claims

2

ABSTRACT OF THE DISCLOSURE

Garment-treating machine for shaping outer coats and jackets, comprising a shoulder supporting portion for freely suspending the garments, clamping means for the bottom hems, breast and revers or lapel supported by the shoulder supporting unit which is mounted on a lift bar supported by a pneumatic or hydraulic piston for upward and downward movement to adjust the vertical height of the shoulder supporting unit and thereby stretch the garment, a heating coil and a steaming coil for steam treating the garment and an air supply source.

Background of the invention

The invention relates to garment-treating machines or devices for treating garments with steam. More in particular, the invention concerns a machine for treating and shaping outer coats or jackets by means of steam.

The pressing of outer coats or jackets heretofore encountered difficulties, especially in chemical cleaning plants, in that each garment had to be pressed individually by hand in a relatively time-consuming working operation. The press operator had to meet special requirements in order to avoid damage caused by pressing.

Summary of the invention

It is an object of the invention to provide a steaming machine for treating outer coats and jackets that affords a considerable increase in the output performance as compared to known pressing methods. The machine is intended to make it possible to be operated by inexperienced help without difficulties and provide for high piece output and good shaping or forming qualities.

It is another object of the invention to provide a machine which has a support for the shoulder part of the garment that may be adjusted in height, clamping and stretching means for the lower edge of the garment to be pressed, a button edge clamping device, and means for the controlled supply of pressing steam and drying air.

In accordance with the invention it becomes possible to freely suspend outer coats or jackets merely on a shoulder support member and render the garment in proper condition for wear by means of suitable clamping and spreading devices. The actual finishing operation is carried out by passing pressing or live steam from the interior of the machine through the cloth of the garment being treated. By using the machine in accordance with the invention, pressing damages such as singed, melted, shiny, or pressure areas are entirely precluded. The stretching and preparing of the garment for the pressing operation requires few simple manipulations. The finishing operation proper is effected automatically and time controlled.

In order to adapt the machine to different garment sizes and for adjusting it for outer coats and jackets, it is another object of the invention to provide in a central guide tube a pneumatically or hydraulically operated piston for raising or lowering a lifting bar connected thereto which

is equipped with means for latching the shoulder support in optionally selectable positions.

In order to prevent turning of the shoulder support with respect to the machine, a longitudinal groove or slot is provided in the guide tube which may be slidably engaged by a guide pin or the like.

The adjustability of the shoulder support is obtained in accordance with the invention in that a carrier sleeve for the shoulder support is slidably disposed on the central guide tube and that this supporting member has connected to it a revers and button edge tensioning device. In this manner it is accomplished that the shoulder support with the associated tensioning means can readily be moved to any desired position by means of a manually effected raising or lowering movement of the lift bar in the central guide tube.

Advantageously the lift bar has an upper and lower latching means for the shoulder support, for example a bore for a spring loaded pin to which the supporting sleeve for the shoulder support may be latched, depending on the particular garment, such as an outer coat or a jacket, that is to be treated.

The inner support for the revers or the button-hole edge is in the form of a resilient breast support provided on the shoulder support and extending essentially parallel to the guide tube.

This breast support cooperates with a resilient support that is arranged on the tensioning device for adjustment in the longitudinal direction and latching in position and which is preferably provided with a cloth or carding layer. This revers, or button edge support, may be pressed against the breast support by means of a slide-in rapid tensioning device, so that the garment to be treated is tied in at the proper location.

In accordance with a further structural development of the invention at least two displaceable clamping devices for the lower side portions of the garment to be treated are provided on a substantially circular frame, which are equipped with a carding layer. Suitably, pierced sheet metal blades that can be penetrated by steam are provided as supports arranged symmetrically on both sides of the carding support.

For the back portion or the back slit and for the lower part of the button edge or the front slit of the garment a further object of the invention provides on the one hand inner supporting surfaces which are stationary in relation to the guide tube and against which clamping surfaces may be pressed from the outside by means of hand levers.

Advantageously the arrangement is such that the said clamping and tensioning means are rotatable relative to the central guide tube and to the heating means, to be explained later. In this manner the mounting and clamping of a garment is substantially facilitated for the operator.

Spreading clamps for the sleeve openings are provided as additional stretching means.

A helical tube for heating steam is provided for the actual treating or forming operation and a further helical tube for discharge of the live steam, which are located in the lower part of the machine. Furthermore, a blower device for fresh air may advantageously be provided.

In order to distribute the steam discharge inside the garment to be treated, a further feature of the invention suitably provides a cloth mantle or shroud which loosely encompasses the heating steam and the live steam helices, as well as the blowing device for the fresh air.

The garment steamer in accordance with the invention is constructed as a cabinet system and comprises the steam treating unit described above and a control unit. Rapid coupling means are provided for connecting the steam treating unit to the control unit which serves on the one hand to provide live steam, heating steam and compressed

3

air to the machine, and on the other hand it includes an adjustable time control means for controlling the time periods for the different media.

A spray nozzle for moistening the garments prior to pressing may suitably be arranged on a supporting rod at a proper level for manipulation.

Brief description of the drawings

Further objects, details and advantages of the invention will become apparent from the following description with reference to the accompanying drawings which illustrate one embodiment of the machine in accordance with the invention, and in which

FIG. 1 is a longitudinal sectional view of the press in accordance with the invention,

FIG. 2 is a partial side view of the press shown in FIG. 1,

FIG. 3 is a section taken along the line A-B in FIG. 1, and

FIG. 4 is a perspective view of an embodiment of the press connected with the control unit.

Description of the invention

The base or cabinet 2, which is preferably provided with rollers 1, is equipped with a hydraulically or pneumatically operable cylinder and piston unit 3. The piston 4 is connected with a lift bar 6 slidably mounted for vertical movement in a central guide tube 5. The central guide tube 5 is provided with lift bar adjusting means which include a slot 7 at the upper end of the guide tube in which a set screw 8 may be arranged to slidably guide the lift bar 6. The lift bar 6 preferably has two transverse bores 9 and 10. A spring pin 11 associated with a shoulder support 13 secured to a supporting sleeve 12 is adapted to engage one of these transverse bores. The upper bore 10 is preferably used for treating outer coats, and the lower bore 9 for treating jackets. An inner breast support 14 of a shoulder and breast supporting unit B is connected with the supporting sleeve 12 which extends preferably parallel to the central guide tube 5. Opposite therefrom a lever 15 is secured on the supporting sleeve 12 which has a slot 16 along its lower portion within which a revers and button edge tensioning device 18 is arranged that is adjustable and may be latched into place by means of a rotatable knob 17. An inserting and rapid stretching device 19 serves for rapid and firm pressing of the member 18 against the garment resting on the breast supporting surface 14, after the garment has been placed on the shoulder support 13.

At the lower end a frame 21 which is generally circular is mounted, for example by means of rods 20. The frame 21 preferably supports two diametrically opposite pairs of levers 22, 23; 24, 25. These adjustable clamping devices which are in the form of adjustable front, back and side clamping means FRS serve for spreading the lower lateral parts of the garments to be treated. The clamping devices 26, 27 associated with clamping levers 22, 23 are preferably in the form of arcuate sectors equipped with a layer of carding material 28 which is joined on both sides by perforated metal sheets 29, 30 that permit the passage of the pressing steam. In order to clamp in the back portion, for example the back pleat of the garment to be treated, a back clamping means R with a stationary support 31 is provided against which a clamping member 32 can be pressed by means of clamping lever 24. The side clamping means S comprising devices 26, 28, 29 and 30 or 23, 27 are connected with an operating knob 22, 23, respectively, in the same sense as the devices 31 and 32 of the front F and rear R clamping means are connected with the respective clamping levers 24 and 25. Preferably the upper edges of the clamping members 31 and 32 are inclined in order to facilitate the introduction of the lower border of the garment. Levers 22, 23, 24 and 25, which support side clamping devices

4

26, 27 and rear and front clamping devices 32, are held in adjusted position by set screw elements 22', 23', 24' and 25' which are threadedly received in frame 21.

In the lower part of the machine the central guide tube 5 is enclosed in a center portion 33. This center portion 33 is surrounded on the one hand by the heating steam coil 36, because the steam for keeping the unit heated is introduced by way of a pipe connection 37. A further heating coil helix 38 having a connecting member 39 serves for the supply of the live steam for the pressing operation. The live steam coil 38 is closed at its upper end 40 and is provided with discharge apertures 41. The term live steam designates the steam which is blown into the garments to treat them. Furthermore a blowing means 42 for fresh air (not shown in detail) is provided, which may be of a conventional type. The components 36 to 42 are shrouded by a loose cloth or material shroud or hood 43 through which steam and air can penetrate. The connecting means 37, 39 and 42 are provided with rapid connecting devices which are in communication with the control unit 44.

The piston 4 of the cylinder piston unit 3, 4 is raised by supplying a pressure medium to the cylinder 3 by means of a manually operated valve 45. The lowering may be effected either by operating the valve 45 or by applying pressure to the lift bar 6.

The control unit 44 is equipped with an adjustable time control means 46, 47 for the time controlled supply of live steam and compressed air. Furthermore, the control unit 44 is provided with actuating means for the different valves as well as with controls for the electrical components of the machine, such as the ventilator. A spraying nozzle 50 for initially spraying the garment to be pressed may be mounted on a pole 48 (FIG. 4) by means of a spring 49 for convenient handling.

The manner of operation of the machine in accordance with the invention is as follows:

The coat or jacket to be pressed is first placed upon the shoulder support 13. The supporting sleeve 12 must be interengaged by means of the spring pin 11 with the transverse bore 9 or 10 of the lifting bar 6. The piston 4 or lift bar 6 is raised or lowered, and the rear seam of the garment is spread out in the clamping device 31, 32 and pressed in by means of the associated handle 25.

The revers or lapel and the button edge are now adjusted, and the front breast portion is clamped in by means of the rapid tensioning lever 19 of the clamping device 18 and the breast supporting surface 14. By pressing down on lever 19 the device 18 is held against the breast support 14. In the next step the lower end of the button edge is clamped in by means of the tensioning devices 24, 31 and 32 in a similar manner as the rear pleat. The tensioning devices 28, 29 that have been moved to their innermost position are now pulled out by means of the handles 22 and 23 until the lower edge of the garment has assumed a substantially oval shape and is tightened. The shoulder support 13 with the garment mounted thereon is now raised by operating the valve 45 until the garment is completely stretched in the longitudinal direction. As shown in FIG. 4, spreading clamps 51 are inserted in the sleeve openings. In the next operation the media supply that is time-controlled may be operated. Live steam is forced into the interior of the cloth hood 43 during a predetermined period of time and is thereby evenly distributed inside the garment. As the live steam passes through the garment, the desired smoothing and forming takes place. Subsequently, fresh air is blown from the inside through the garment for a predetermined length of time. The steaming operation is now terminated, and by releasing the individual clamping and tensioning devices, the pressed outer coat or the pressed jacket can be removed and placed upon a clothes hook.

Before starting the steaming operation, the garment is suitably moistened by means of the spraying nozzle 50, especially in pleated areas.

It is also advisable prior to clamping in the garment to spray the lining with the spray nozzle 50.

The invention is not limited to the embodiment illustrated and described. Particularly the tensioning or spreading and clamping devices may be modified without departing from the spirit of the invention. FIG. 4 illustrates that the frame 21 with the tensioning device thereon is rotatably arranged in the same manner as the supporting sleeve 12 with respect to the central guide tube 5, so that the operator can readily carry out the sequential tensioning and clamping operations. Center support 33, which is in the form of a stationary tube, is equipped with bearings 52 which support the central guide tube 5 and which in turn supports the frame 21 by way of the levers 22-25 as well as the shoulder and breast supports 13, 14.

The invention encompasses all advantageous part and sub-combinations of the features described with reference to the embodiment illustrated in the drawings, but is not limited thereto, and what is desired to be protected by Letters Patent of the United States is set forth in the appended claims.

I claim:

1. Garment-treating machine for shaping outer coats and jackets comprising a base, a stationary support mounted on said base, a guiding tube having an end supported on said stationary support, a lifting bar movably supported within said guiding tube and axially movable therein, lifting bar adjusting means intermediate said guiding tube and said lift bar, a shoulder supporting unit disposed around the upper end of said guiding tube and on said lifting bar for vertical movement therewith, clamping means for the lower portion of a garment supported proximate said base below said shoulder supporting unit including front and rear clamping means and oppositely disposed side clamping means, a button edge clamping device supported by said shoulder supporting unit above said clamping means, conduit means for supplying live steam and heating steam extending upwardly from said base circumferentially of said guiding tube, means for supplying dry air into the area upwardly from said base, and means for controlling the supply of live steam and air to a garment supported on said machine.

2. Garment-treating machine in accordance with claim 1, including fluid power means comprising a piston connected to the lower end of said lifting bar for raising and lowering said lifting bar, said lifting bar adjusting means

being operative to engage said lifting bar at different levels determining the height of said shoulder supporting unit.

3. Machine in accordance with claim 2, comprising a guiding slot in said guide tube and a guided member on said lifting bar to prevent relative rotation between said tube and said bar.

4. Machine in accordance with claim 2, where said shoulder supporting unit includes a supporting sleeve slidably disposed around said central guiding tube and supporting said unit, said button edge clamping means, a revers clamping means, and a resilient counter support member.

5. Machine in accordance with claim 4, including a rapid tensioning means for said revers and said button clamping means.

6. Machine in accordance with claim 1, where said clamping means include a carding layer and perforated sheet metal plates.

7. Machine in accordance with claim 6, where said clamping means each include stationary supporting members, clamping members movable relative thereto, and a manual actuating lever for each clamping member.

8. Machine in accordance with claim 2, including ball bearings between said stationary support and said guiding tube permitting rotation of said lifting bar and said guiding tube.

9. Machine in accordance with claim 1, where said conduit means include a helical tubular coil for heating steam and a helical tubular coil having apertures for the exit of live steam, said coils being disposed around said lifting bar and said guiding tube.

References Cited

UNITED STATES PATENTS

2,587,745	3/1952	Maurer	223—70
2,735,595	2/1956	Glover	223—70
2,562,662	7/1951	Glover	223—70
2,986,312	5/1961	Petzold et al.	223—70
3,216,633	11/1965	Paris	223—70
3,310,208	3/1967	Killey	223—70
3,333,747	8/1967	Glover	223—70

JORDAN FRANKLIN, *Primary Examiner*.

GEORGE V. LARKIN, *Assistant Examiner*.