June 14, 1938. J. S. REAR 2,120,340

GARMENT RENEWING MACHINE

Filed March 2, 1936

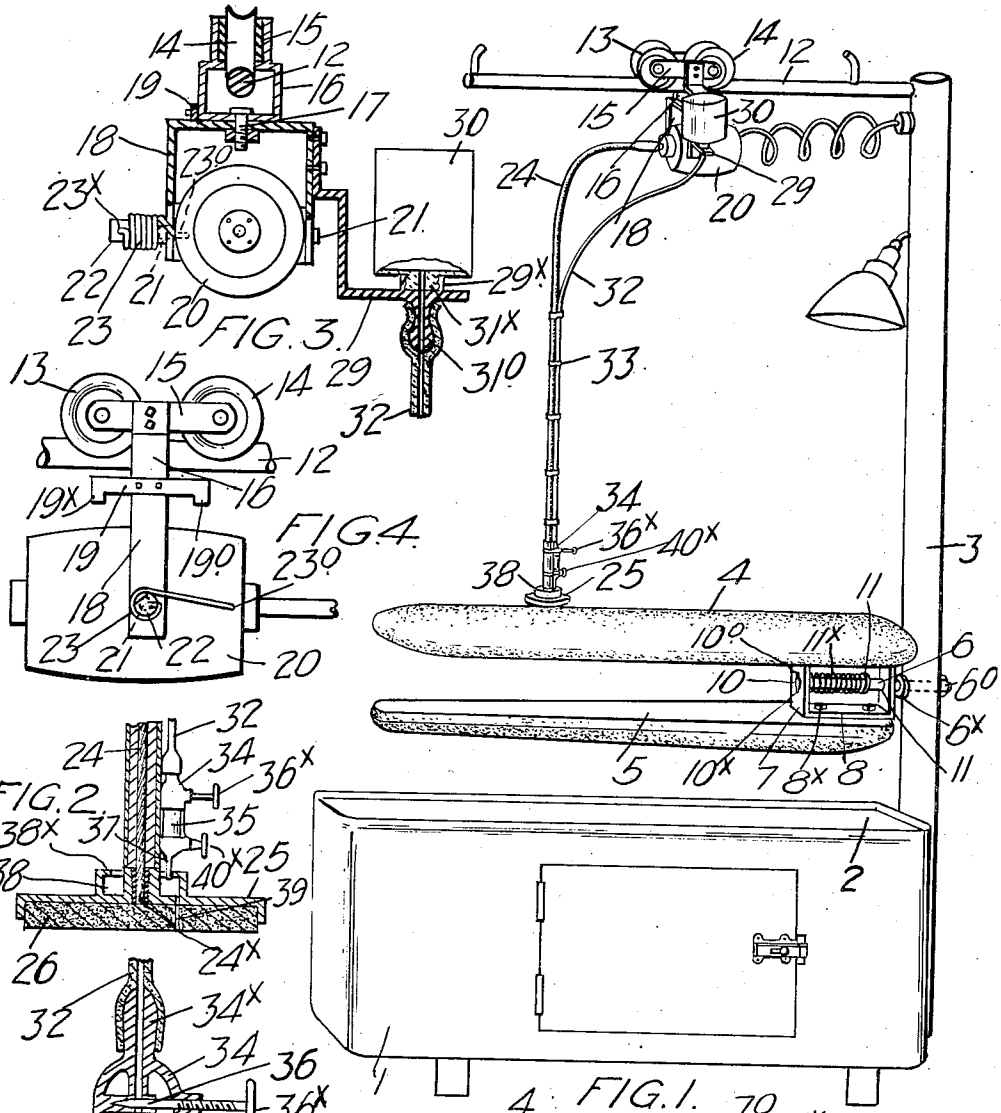


FIG. 1.

FIG. 3.

FIG. 4.

FIG. 2.

FIG. 5.

FIG. 7.

FIG. 6.

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Patented June 14, 1938 2,120,340

UNITED STATES PATENT OFFICE

2,120,340

GARMENT RENEWING MACHINE

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Application March 2, 1936, Serial No. 66,609

3 Claims. (Cl. 26—28)

My invention relates to improvements in garment renewing machines, and the object of the invention is to devise a machine for renewing worn fabrics so as to restore the nap, renew the colour and remove shine by means of an abrasive rotating disc and a fluid, in which the disc drive will have a maximum flexibility, in which the fluid will be fed directly between the disc and fabric to be treated and in a quantity equal to the requirements of the surface being directly treated by the disc, in which the weight of the disc and driving parts will be resiliently supported in their normal position above the operating position, and in which coat and trouser boards are supported so that they can be alternately locked in the operative position for use, and it consists essentially of the arrangement and construction of parts all as hereinafter more particularly explained.

Fig. 1 is a perspective view of my device.

Fig. 2 is an enlarged vertical sectional view through the abrasive disc and parts adjacent thereto.

Fig. 3 is a sectional view of the motor support and the bracket support connected thereto on which the fluid reservoir is carried.

Fig. 4 is a side elevation of the parts shown in Fig. 3.

Fig. 5 is an enlarged sectional view through the fluid flow controlling mechanism.

Fig. 6 is an enlarged sectional detail of the supporting means for the coat and trouser boards.

Fig. 7 is a sectional view taken transversely through the central portions of the coat and trouser boards and showing the supporting means in elevation.

In the drawing like letters of reference indicate corresponding parts in the different views.

1 indicates a cabinet which is provided with a tray like top 2 for a purpose which will hereinafter appear. 3 is a standard which is secured to one end of the cabinet 1 and extends upwardly therefrom to form a support for my mechanism. 4 is a coat board and 5 is a trouser board. 6 is a stud shaft extending through the standard 3 and provided with a shoulder 6× bearing against one face of the standard and a lock nut 6⁰ screwed against the opposite face of the standard to secure the stud shaft 6 in a horizontal position.

7 is a rectangular frame, the upper horizontal side 7× of which is secured by screws or other suitable means 7⁰ to the coat board 4. The lower horizontal side 8 is secured by screws 8× to the trouser board 5. The end portions of the frame are provided with holes 9 and 10 through which the stud shaft 6 extends. 10× are recesses extending diametrically of the hole 10 and formed in the outer face of the outer side of the frame 7. The stud shaft 6 is provided, adjacent its outer end, with diametric projections 10⁰ which fit into the diametric recesses 10× when the parts are in the normal position. 11 is a collar secured to the stud shaft 6 within the frame 7 and 11× is a compression spring extending between the collar 11 and the outer vertical side of the frame 7.

When it is desired to change the coat board for the trouser board, all that it is necessary to do is to press the coat and trouser boards 4 and 5 inwardly carrying the frame 7 against the compression spring 11× so as to compress it against the collar 11 thereby carrying the diametric projections 10⁰ out of the recesses 10×. When this is done the frame and the coat and trouser boards carried thereon may be rotated so as to carry the trouser board into operative position taking the place of a coat board and vice versa. When it is desired to change the position of the trouser board to the position of the coat board the same operation takes place so as to interchange the two boards. Of course, as soon as the frame 7 has been rotated a half turn to interchange the boards, the frame is released so that the projection 10⁰ again fits into the recess 10× to hold the boards definitely in place.

12 is a horizontal arm which extends outwardly from the standard 3 over the coat board 4 and trouser board 5 and cabinet 1. The arm 12 is preferably tubular in form so as to carry grooved wheels 13 and 14 which are connected together by straps 15 to form a travelling carrier on the arm 12. 16 is an upper rectangular frame secured to the straps 15, the frame looping around the arm 12 and provided in its lower side with a swivel bolt 17.

18 is an inverted U-shaped member which is secured upon the swivel bolt 17 so as to freely turn thereon in a horizontal plane. 19 is a bar which is secured to the frame portion 16 and is provided, at its ends, with downwardly projecting portions 19× and 19⁰ with which the frame portion 18 engages so as to limit the horizontal swinging movement thereof.

20 is a motor provided with trunnions 21 which are turnably mounted in the depending arms of the frame portion 18. 22 is a stud forming part of the frame portion 18 and around which is wound a tension spring 23, one end of which is secured to the stud 22 as indicated at 23× and the opposite end to the motor 20 as indicated at 23⁰. By this means the forward end of the motor is

resiliently held in an upward position for a purpose which will hereinafter appear.

24 is a flexible shaft of any suitable type which is driven from the shaft of the motor 20. 25 is a disc holder which is secured to the lower end of the flexible shaft 24 as indicated at 24× and in which is secured a disc 26 formed of suitable abrasive material.

29 is a bracket which is secured to the frame portion 18 and on which is mounted a liquid reservoir 30. The reservoir 30 is provided, in its lower wall, with a central nipple 31× which is screwed into an annular flange 29× extending upwardly from the horizontal arm of the bracket 29. Beneath the horizontal arm of the bracket 29 in central alignment with the flange 29× is a nipple 31⁰ over which is forced the upper end of a rubber tube 32. The tube 32 extends downwardly and is secured by suitable clips 33 to the flexible shaft 24 as clearly indicated in Fig. 1. The lower end of the tube 32 is provided with a liquid flow controlling device which I will now describe.

34 is a casing provided with a time glass 35 of usual construction. The upper end of the casing 34 is provided with a nipple 34× which is forced into the lower end of the rubber tube 32. Within the casing 34, above the time glass 35, is located a needle valve 36 controlled by the hand wheel 36×. By this means the fluid passing downwardly through the tube from the reservoir 30 is controlled so as to pass through the time glass 35 drop by drop, the rate of flow being controlled by the hand wheel 36×.

37 is a spout depending from the lower end of the casing 34 centrally beneath the time glass 35. 38 is an annular cup formed on the top of the disc holder 25 concentrically with the centre of the flexible driving shaft 24. The upper edge of the cup 38 is provided with an inwardly extending annular lip 38×. 39 is a small orifice which extends through the top of the cover 25 and through the abrasive disc 26 to the operating face thereof.

When the device is in operation, the disc 26 and its holder are rotated at high speed against the surface of the fabric to be treated and the fluid which is fed from the spout 37 into the cup 38 is carried outwardly against the wall of the cup and tends, by centrifugal action, to climb such wall. The overflow of the fluid is prevented by the inwardly extending annular lip 38×. The fluid which is carried outwardly against the wall of the cup gradually flows down the small orifice 39 to the operating face of the disc 26 and on to the garment being treated.

After the treating operation is completed and it is desired to shut off the liquid flow, I provide a shut off valve 40 operated by a hand wheel 40×, such shut off valve being located between the lower end of the time glass 35 and the spout 37. The garment to be treated is placed upon either the coat board or trouser board 5 directly beneath the abrasive disc 26. The abrasive disc 26 is held in its normal position out of contact with the cloth by means of the spring 23, the forward end 23⁰ of which tends to tilt the motor 20 upwardly at the end from which the driving shaft 34 extends so that the abrasive disc is resiliently held in position ready for use.

It will be noted that the motor 20 is carried so that it will swing both in a horizontal and vertical plane by means of the swivel bolt 17 and trunnions 21.

When it is desired to treat the fabric, the operator draws the abrasive disc 26 into position over the portion of the garment to be treated. The disc is then drawn downwardly into contact with such garment and the motor started to operate. The disc in revolving causes the liquid, which is fed as above described through the orifice 39 to the operating face of the disc, to spread over the face of the disc and over that portion of the garment which is being treated. It will thus be seen that by means of the control valve 36 just sufficient liquid may be fed to the garment to fulfill the particular requirements. By means of the motor support it allows the motor to be swung either in a vertical or horizontal plane so that the abrasive disc may be drawn to any desired spot on the garment and used in any desired position.

When the garment is upon the coat board 4 it may be necessary to support the major portion of the garment from dropping on to the floor and for this purpose I have provided the tray like top to the cabinet 1.

From this description it will be seen that I have provided a device having a maximum flexibility in operation in which the fluid may be fed to the operating face of the disc in any desired quantity to suit the various conditions of the fabric, and in which the weight of the disc and operating parts are resiliently supported so that as soon as the operation is over, the freeing of the disc by the operator will allow it to automatically rise to its normal position clear of the fabric, and in which a trouser board and a coat board are provided which may be readily adjusted to be used alternately and yet held rigidly in position whenever desired.

What I claim as my invention is:—

1. In a garment renewing machine, the combination with the garment support, of a horizontal track extending over the support, a traveller operating upon the track, a motor support depending from the carrier and provided with trunnions upon which the motor is mounted to swing in a vertical plane, an abrasive disc and disc holder, a flexible shaft extending between the motor shaft and disc holder, and a spring carried by the motor support and adapted to hold the flexible shaft, disc and disc holder and adjacent end of the motor in an upward position to hold the disc clear of the garment operated upon.

2. In a garment renewing machine, a motor support, a motor pivotally mounted in the support at right angles to its longitudinal axis, an abrasive disc and disc holder, a flexible drive between the motor and disc, a spring carried by the motor support and adapted to hold the flexible drive, disc and disc holder and the adjacent end of the motor tilted in an upward position to hold the disc clear of the garment to be operated upon.

3. In a garment renewing machine, a motor support, a motor pivotally mounted in the support at right angles to its longitudinal axis, an abrasive disc and disc holder, a flexible drive between the motor and disc, and resilient means adapted to hold the flexible drive, disc and disc holder and the adjacent end of the motor tilted in an upward position to hold the disc clear of the garment to be operated upon.

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