Nov. 8, 1949 J. R. PETRE 2,487,175

STRETCHING AND DRYING DEVICE

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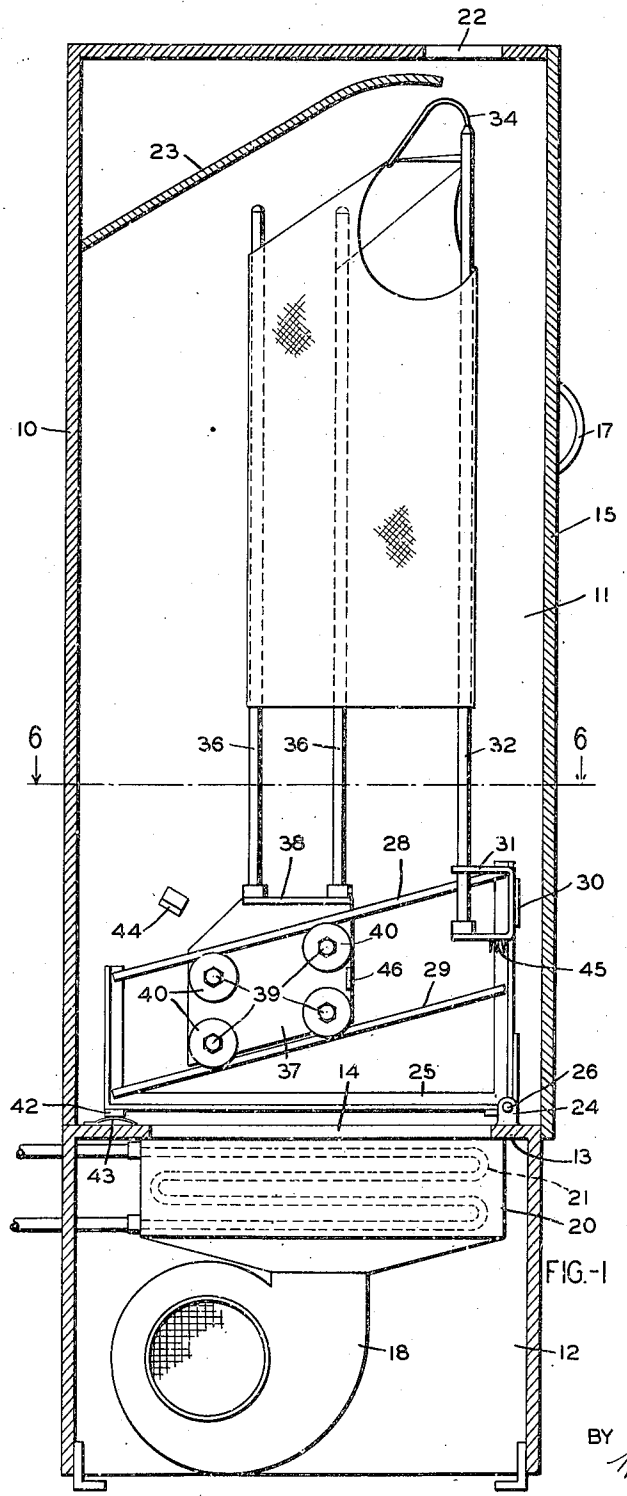


FIG.-1

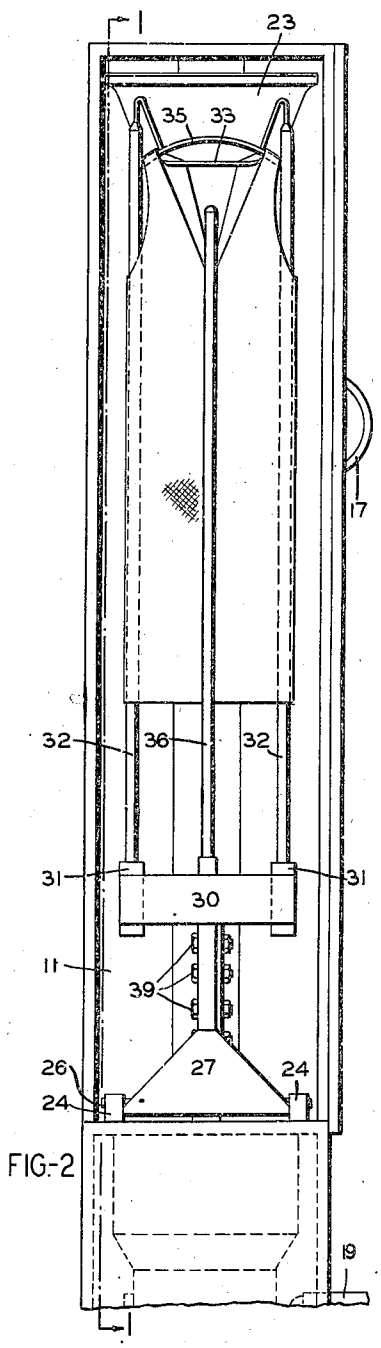


FIG-2

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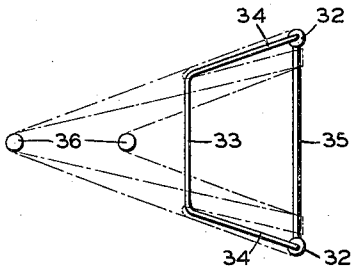


FIG.-4

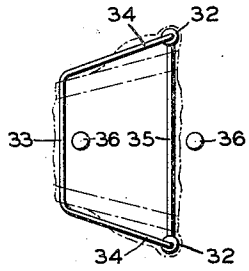


FIG.-5

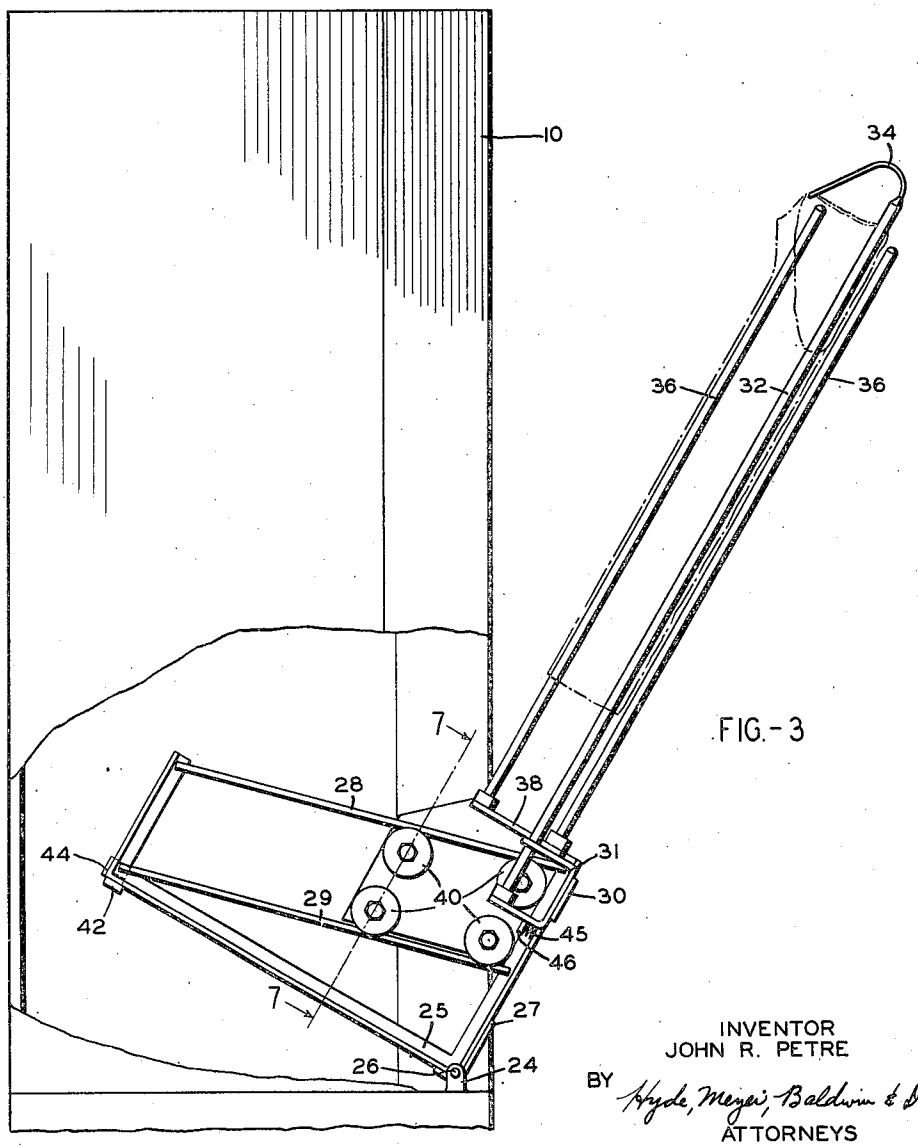


FIG.-3

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STRETCHING AND DRYING DEVICE

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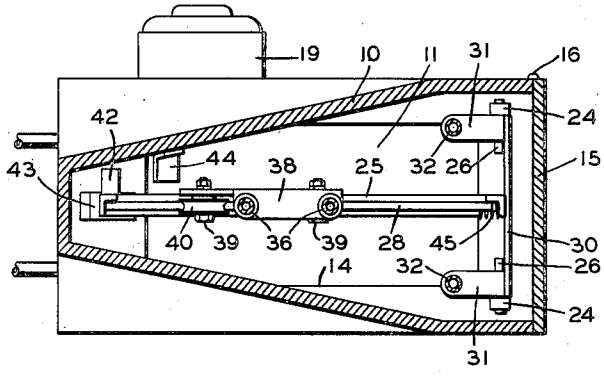


FIG.-6

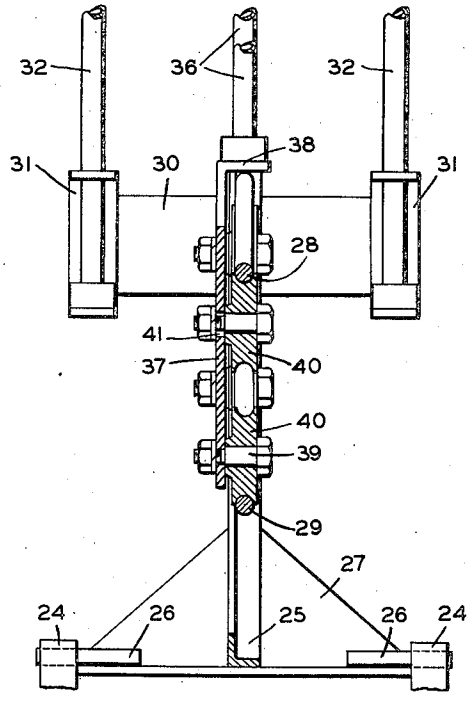


FIG.-7

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2,487,175

STRETCHING AND DRYING DEVICE

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Application January 30, 1948, Serial No. 5,315

7 Claims. (Cl. 223—61)

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This invention relates to apparatus for stretching and drying knitted undershirts or similar articles of wearing apparel. The invention is an improvement upon that shown, described and claimed in Patent No. 2,426,614, granted September 2, 1947, to George W. Johnson for Stretching and drying device.

The object of the present invention is to generally simplify and improve the construction shown in said patent for the purpose of adapting it to rapid production usage and at the same time reduce the labor of operation.

Another object is to take advantage of gravity in the movement of the work support back and forth between its dressing and drying positions.

Still another object is to so arrange the parts as to bring them within easy reach of an operator of average size, doing away with stooping or stretching to reach the parts.

Further objects of the invention in part are obvious and in part will appear more in detail hereinafter.

In the drawings, which represent one suitable embodiment of the invention, Fig. 1 is a sectional elevation on the line 1—1, Fig. 2;

Fig. 2 is a corresponding front elevation, with the casing door open;

Fig. 3 is a side elevation, partly broken out, showing the shirt support tipped forwardly and advanced to loading position, the dotted lines indicating a shirt in position for stretching;

Figs. 4 and 5 are plan views, somewhat enlarged, of the stretching members, in positions corresponding to Figs. 1 and 3 respectively;

Fig. 6 is a sectional plan view on the line 6—6, Fig. 1; and

Fig. 7 is a detail sectional elevation on the line 7—7, Fig. 3.

The stretching and drying mechanism of the present invention may be housed in any suitable form of cabinet, and arranged either singly or in groups located either side by side or distributed and rotatable about a central vertical axis. The one shown includes a casing 10 provided with an upper drying chamber 11 and a lower base chamber 12 between which is a floor 13 having a central opening 14. Chamber 11 is closed by a door 15 hinged at 16 and provided with handle 17.

Within the base chamber are mounted a fan or blower 18 driven by motor 19 and discharging into a heating chamber 20 provided with a suitable air heater, such as steam coils 21, said chamber communicating with the drying chamber by way of opening 14.

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22 indicates the air discharge opening from the drying chamber and 23 a deflector or guide for the air stream in said chamber.

Within the drying chamber, the floor 13 is provided with two bearing blocks 24 on which is pivotally mounted the stretching device or mechanism. This comprises a suitable frame, marked generally 25, provided with stub shafts 26 entering openings in said bearing blocks and welded or otherwise secured to a cross brace plate 27 attached to frame 25. In the frame are rigidly mounted upper and lower track rods 28, 29.

Upon the track rods is mounted a traveling carriage, later described in detail. Frame 25 and this carriage separately support two pairs or sets of work stretching posts, one pair spaced or separated from each other longitudinally with respect to the direction of carriage movement and the other laterally thereof. Either pair may be mounted for movement with the carriage, while the other pair is relatively fixed against such movement, but in the form shown the longitudinally spaced pair is movable.

As shown, a cross piece 30 secured to the front of the frame is provided with two end brackets 31 each supporting one of the two upstanding relatively fixed transversely spaced stretcher rods or posts 32 connected at their upper ends by a bridging member 33 having arched end portions 34, as in said prior patent. However, an additional cross member 35 also connects posts 32 to assist in proper dressing of the front neckline of the shirt and to also serve as a handle for manipulating the stretching devices.

In addition to the pivoted frame and relatively fixed transversely spaced stretcher rods, the stretching devices include a movable stretcher member. This includes two strong parallel upstanding tubes or posts 36, similar to posts 32, spaced fore and aft and mounted on the aforesaid carriage, marked generally 37. This carriage is formed of a heavy plate flanged over along its upper edge, as at 38, to support said posts, and upon which plate are mounted four shouldered bolts 39 each serving as a support for a grooved roller 40. The bolts for the two upper rollers are adjustable vertically in plate slots 41 to take up wear or lost motion.

Frame 25 is provided at its rear end with an abutment bar 42 which rests on a bumper spring 43 when the device is in drying position and which engages a stop 44 when the unit is tipped forwardly, as in Fig. 3. Another bumper spring 45 on frame 25 is engaged by abutment 46 on the carriage 37, when the latter moves forwardly.

The operation is as follows:

Assuming the fan and heater in operation, the operator opens the door **15** and tips the stretcher unit forward to the position shown in Fig. 3 where the bumper **44** limits the motion. In this position the track rods **28**, which are inclined rearwardly and downwardly on the carriage, Fig. 1, now tilt the other way, and the carriage rolls forwardly by gravity to the dressing position, bumper spring **45** taking up any shock or jar. The four stretcher rods **32**, **36** now stand in the position shown in Fig. 5.

A shirt is dressed upon these rods in the manner shown in dotted lines, Fig. 3. Then the unit is tipped back to an upright position, moving into the drying chamber, and the carriage rolls by gravity to its original position, the tracks now sloping rearwardly. Usually a 30° swing of the tilting frame is enough, providing 15° inclination of the tracks in both extreme positions of the unit. This angle also gives sufficient stretch to the shirt, which of course is stretched by movement of the rods **36** to the position shown in Fig. 4.

The air stream heated by pipes **21** is discharged upwardly through and around the garment, is deflected by deflector **23**, and passes out by way of outlet **22**.

It should be noted that as the carriage rolls forwardly or rearwardly, its center of gravity passes across the pivotal axis at **26** each time. Thus it is always biased toward one or the other of its positions, with a definite tendency to stay there until the operator again tilts the unit.

Other advantages of the invention will be apparent to those skilled in the art.

What I claim is:

1. Stretching mechanism, comprising a support, a frame mounted to tilt thereon from drying to loading position about a transverse horizontal axis and carrying a pair of fixed stretching posts, a carriage mounted upon said frame for fore and aft movement in a direction transverse to said axis, and a pair of stretching posts mounted upon said carriage for movement therewith, the posts of one pair being spaced apart longitudinally and of the other pair transversely with respect to the direction of carriage movement.

2. Stretching mechanism, comprising a support, a frame mounted to tilt thereon from drying to loading position about a transverse horizontal axis and carrying a pair of fixed stretching posts, a carriage mounted upon said frame for fore and aft movement in a direction transverse to said axis, and a pair of stretching posts mounted upon said carriage for movement therewith, said frame being provided with tracks along which the carriage travels, said tracks extending fore and aft and in loading position of the frame sloping downwardly toward the front end of the frame.

3. Stretching mechanism, comprising a support, a frame mounted to tilt thereon from drying to loading position about a transverse horizontal axis and carrying a pair of fixed stretching posts, a carriage mounted upon said frame for fore and aft movement in a direction transverse to said axis, and a pair of stretching posts mounted upon said carriage for movement therewith, said frame being provided with tracks along which the carriage travels, said tracks extending fore and aft and in drying position of the frame sloping downwardly toward the rear end of the frame.

4. Stretching mechanism, comprising a support, a frame mounted to tilt thereon from drying to loading position about a transverse horizontal axis and carrying a pair of fixed stretching posts, a carriage mounted upon said frame for fore and aft movement in a direction transverse to said axis, and a pair of stretching posts mounted upon said carriage for movement therewith, said frame being provided with tracks along which the carriage travels, said tracks extending fore and aft and in loading and drying positions of the frame sloping downwardly toward opposite ends, respectively, of the frame.

5. Stretching mechanism, comprising a chambered casing having a front opening and a bottom support, a frame pivotally mounted upon a transverse axis near the front opening and provided near its front with a pair of upright relatively fixed stretching posts, longitudinal tracks upon said frame, a carriage movable along said tracks, and a pair of stretching posts mounted upon and movable with said carriage, whereby all of said posts may be projected outwardly through said opening to a loading position by tilting the frame upon its support.

6. Stretching mechanism, comprising a chambered casing having a front opening and a bottom support, a frame pivotally mounted upon a transverse axis near the front opening and provided near its front with a pair of upright relatively fixed stretching posts, longitudinal tracks upon said frame, a carriage movable along said tracks, and a pair of stretching posts mounted upon and movable with said carriage, whereby all of said posts may be projected outwardly through said opening to a loading position by tilting the frame upon its support, said frame being provided with tracks along which the carriage travels, said tracks being so disposed that when the frame is in loading position the tracks extend through the opening and slope downwardly toward the front of the frame.

7. Stretching mechanism, comprising a chambered casing having a front opening and a bottom support, a frame pivotally mounted upon a transverse axis near the front opening and provided near its front with a pair of upright relatively fixed stretching posts, longitudinal tracks upon said frame, a carriage movable along said tracks, and a pair of stretching posts mounted upon and movable with said carriage, whereby all of said posts may be projected outwardly through said opening to a loading position by tilting the frame upon its support, said frame being provided with tracks along which the carriage travels, said tracks being so disposed that when the frame is withdrawn into the chamber the tracks lie entirely within said chamber and slope downwardly toward the rear of the frame.

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REFERENCES CITED

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

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Number	Name	Date
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