Oct. 20, 1931. E. J. SCHREMP 1,828,345

HOSIERY PRESS

Original Filed April 8, 1924 2 Sheets-Sheet 1

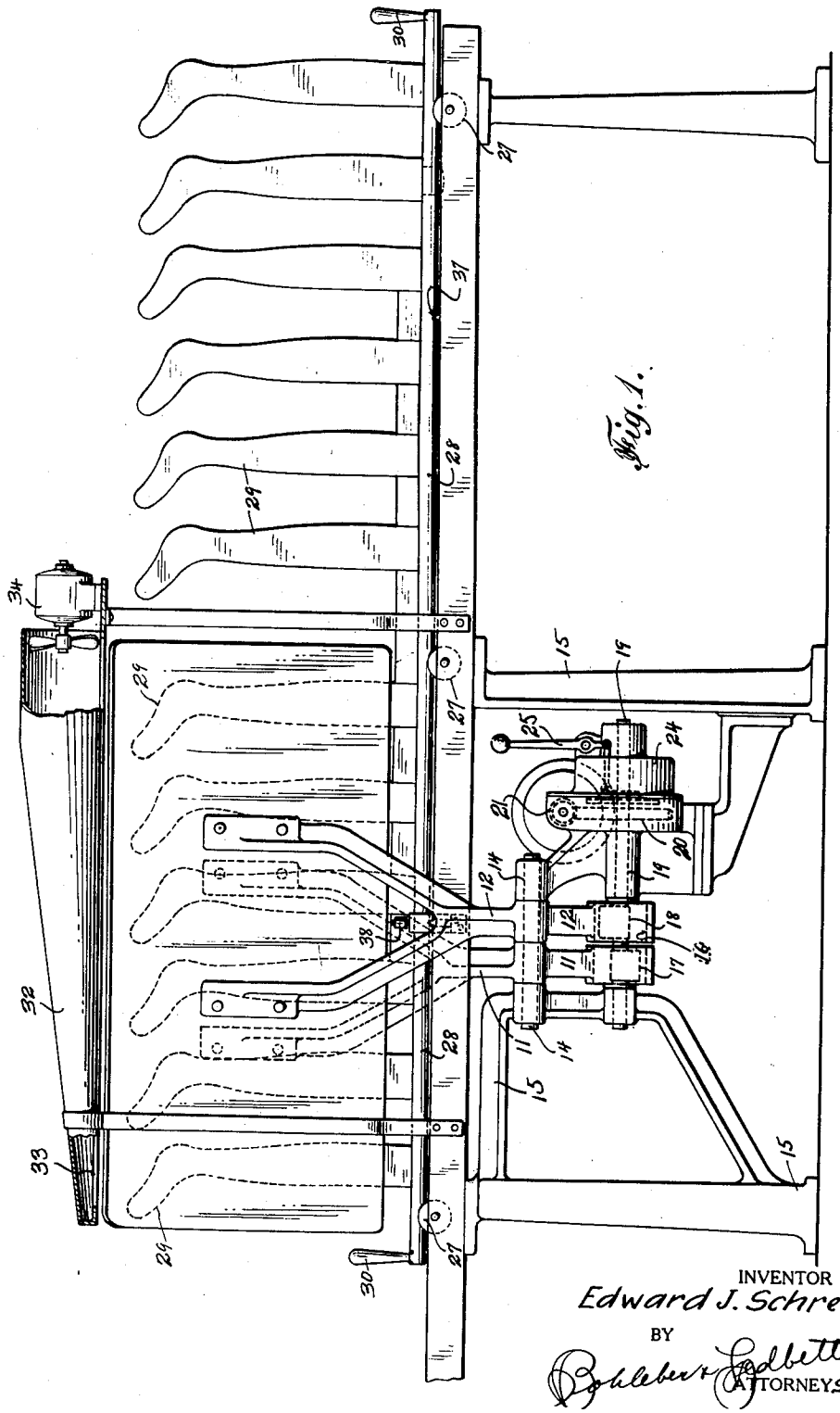


Fig. 1.

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Fig. 4.

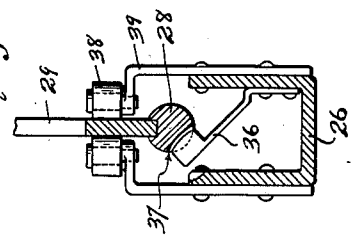


Fig. 6.

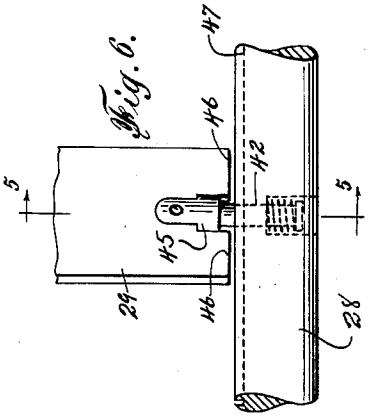


Fig. 3.

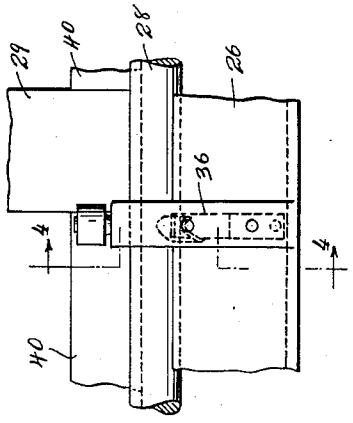


Fig. 5.

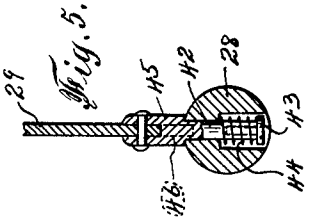
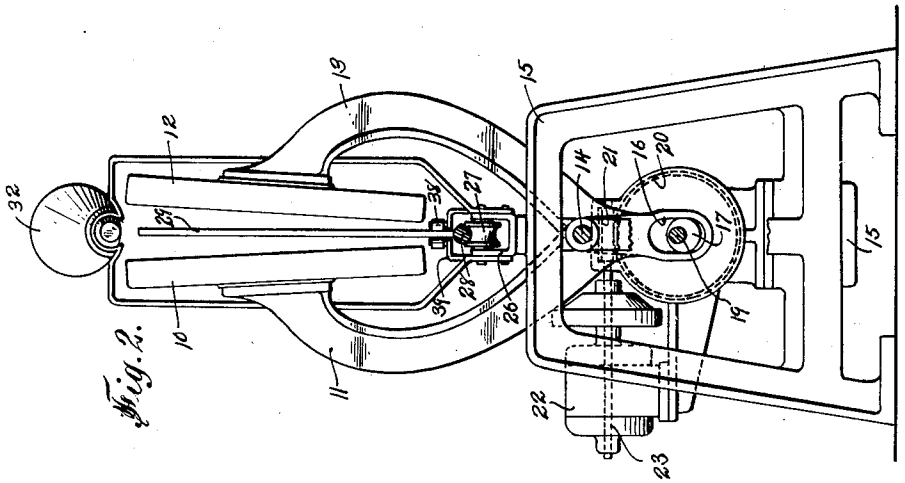


Fig. 2.



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UNITED STATES PATENT OFFICE

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HOSIERY PRESS

Application filed April 8, 1924, Serial No. 704,943. Renewed September 20, 1928.

This invention relates to pressing machinery and particularly to improvements in hosiery presses.

An object of the invention is to produce a hosiery pressing machine provided with upright pressing members and movable forms to increase the convenience in handling the hosiery and to increase the quantity output of the machine. An additional object is to produce improved cooling and drying means whereby the work, such as hosiery or other garments, may be rapidly dried and finished.

The accompanying drawings illustrate an exemplary embodiment of the invention serving to illustrate the principle thereof and it will be understood by those conversant with the art how the construction of the machine may be varied in many particulars as well as the mode of operation thereof.

Figure 1 illustrates a side view of the pressing machine; and Figure 2 illustrates an end view thereof, said press having the jaws thereof open in both views.

Figure 3 shows a side fragmentary view of a hosiery form on a stringer with guide means to hold the forms in upright position; and Figure 4 is a view on the line 4—4. Figures 5 and 6 show detailed fragmentary views of improved means for attachably swiveling a garment form on the stringer means.

Referring now more in particular to the drawings for a detailed description of the invention there is shown a pair of movable cooperating press jaws 10 and 12 which are supported by upright yokes or press levers 11 and 13 respectively. The lower ends of the yokes are pivotally supported on a shaft 14 supported in a press frame 15. The lower end of each press lever or yoke 11 and 13 are provided with a cam-way 16 and are mounted in closely related parallel position upon the fulcrum shaft 14.

Cams 17 and 18 are rotatably confined in the camway 16 of each lever and are fixed to a motor driven shaft 19 which is driven by a worm wheel 20. The worm wheel 20 engages a worm 21 and a motor 22 drives the worm 21 through a shaft 23. A clutch housing 24 is provided with any approved form of clutching mechanism for stopping and starting the motor driven shaft 19 and a clutch or gear shift handle 25 is mounted on the clutch and gear housing 24 for controlling the stopping and starting operations of the shaft 19. The motor 22 may preferably be continuously driven and the operator actuates the lever 25 to stop and start the cams 17 and 18 for opening and closing the pressing members or jaws 10 and 12. As the shaft 19 turns, the cams 17 and 18 drive outwardly on the lower end of the press levers causing the jaws to close.

The frame 15 supports a longitudinal channel beam 26 which is arranged directly beneath and in alignment with the meeting plane of the press jaws. This channel beam 26 is fitted with several free rollers 27 carrying a stringer rod or shaft 28 adapted to roll in and be supported by the rollers 27. The shaft 28 has fixed thereto a plurality of garment forms 29, as in this instance stocking forms, which are placed in alignment with the hosiery press jaws. Each end of the shaft 28 is fitted with a handle 30 by which the operator rolls the hosiery form unit back and forth through the press jaws, for it will be understood that half of the hosiery forms are usually within the press jaws for the purpose of treating the hosiery while the other end of the hosiery form unit is outside of the press for the purpose of removing the pressed and dried hosiery therefrom and replacing the same with new goods preparatory to treatment thereof in the press.

Improved cooling and drying facilities are employed for rapidly removing the moisture from the hosiery between the press jaws and for this purpose an air blast nozzle 32 is placed above the press jaws arranged in parallel alignment therewith and having an air slit or discharge slot 33 running the entire length of the nozzle directly above the open space of the press jaws. It is understood how the press jaws 10 and 12 close lightly upon the hosiery forms to dry and press the work which leaves clearance spaces in between each hosiery form and the air is projected with considerable force directly downwardly through the spaces between the hosiery forms 29 and discharges from the bot-

tom of the press jaws. A motor and fan set 34 is located at the large end of the tapered nozzle 32 and is adapted to deliver a substantial blast of air through the nozzle and out of the discharge slot 33 thereof to cool the work and to carry the moisture from the goods and press. It is observed how the air blast is projected straight from the nozzle 32 without impediment, for in the present improvements I have arranged to deliver the air downwardly in parallel relation between the upstanding hosiery forms which provides an efficiently operating air blowing system inasmuch as the air is blown along a straight path of travel.

The press jaws or plates 10 and 12 are heated by any suitable means for the purpose of rapidly drying the work and the working faces of the pressing members may be polished to impart a sheen to the hosiery if desired. The hosiery forms 29 are held in upright position and one-half of the forms are always exposed either on one end of the machine or the other and easily accessible to the operator of the machine for removing and refilling the forms with new goods. A pressing and ironing period equivalent to the time required for an operator to remove the treated hosiery and replace the same with new goods is usually sufficient for the drying treatment of the hosiery for other work in the drying zone between the heated press plates and immediately the new goods are placed upon the forms, the operator actuates the clutch handle 25 thereby causing the jaws to open which permits the hosiery form unit 28—29 to be rolled through the press for the purpose of repeating the operation whereupon the goods just treated is removed from the forms at the other end of the machine.

A stop device is arranged to stop and hold the garment form unit 28—29 in place in the position shown in Figure 1 so that the form and garments thereon will be caused to remain in fixed operative position while one-half of the work is being treated and while the other half thereof is being removed from the forms and replaced by new hosiery. This stop device may comprise a spring pressed ratchet or detent 36 which springs into a notch 37 made in the stringer shaft 28. The outer free end of the spring 36 may be fitted with a roller if desired to roll along the surface of the stringer shaft 28 and snap into the notch 37 to hold the garment form unit in place.

Guide means are employed to hold the forms in vertical position. In the present instance I have shown a pair of rollers 38 carried on the upper end of brackets 39 and the rollers bear against either side of the garment form unit to hold the same in upright position. Runners or track plates 40 are disposed between each hosiery form 29 to provide a smooth unbroken track against which the rollers 38 may bear during the back and forth travel of the garment form unit into and out of the press.

In Figures 5 and 6 I have illustrated a modified and improved form of connecting means for movably or rotatably supporting the hosiery forms 29 on the stringer shaft 28. To this end, the shaft 28 is fitted with a rotatable pin 42 having a head 43 on the lower end thereof with a spring 44 confined on the pin underneath the head 43 for the purpose of holding and seating the enlarged forked head 45 against a shaft 28. The forked head 45 holds a hosiery form as shown and the form is preferably made with the lower end 46 thereof extending below the shouldered head 45 in order that the said end 46 may rest within a longitudinal groove or key-way 47 in the shaft 28. The form 29 is normally held downwardly in interlocked position as shown in Figure 5 but the operator may readily pick up the form 29 and lift it out of the key-way 47 for the purpose of rotating the said stocking form and examining both sides of the work.

The member 28, carried on guide means represented by rollers 27, provides a work conveyor movable beneath and parallel to the pressing jaw members 10 and 12 by which the work forms 29 are carried back and forth through the press. Any suitable form of operating means cooperates with the lower ends of the press lever or levers to swing one or both thereof to close the press.

What I claim is:

1. A pressing machine comprising upright cooperating pressing jaws, means for opening and closing the jaws, a plurality of garment forms arranged in parallel spaced relation between the jaws leaving air clearance spaces thru the jaws between the parallel forms, and an air nozzle extending the length of the pressing jaw having a discharge slot opening toward the meeting plane of the jaws to deliver air thru the air spaces.

2. A pressing machine comprising upright cooperating pressing jaws, means for opening and closing the jaws, a plurality of garment forms arranged in parallel spaced relation between the jaws leaving air clearance spaces thru the jaws between the parallel forms, and an air nozzle extending lengthwise along the edge of the jaws, and said nozzle being provided with a discharge air slot opening in registry with the aforesaid air spaces leading thru the closed jaws between the garment forms, and operator operated means for controlling the jaw opening and closing means.

3. A pressing machine comprising upright cooperating pressing jaws, means for opening and closing the jaws, a plurality of garment forms arranged in parallel spaced relation between the jaws leaving air clearance spaces thru the jaws between the parallel

forms, and an air nozzle extending the length of the pressing jaw having a discharge slot opening toward the meeting plane of the jaws to deliver air thru the air spaces, a stringer rod on which the forms are fixed, and supporting means for the stringer rod by which the forms and stringer rod are moved in and out of the press.

4. A pressing machine comprising upright cooperating pressing jaws, means for opening and closing the jaws, a plurality of garment forms arranged in parallel spaced relation between the jaws leaving air clearance spaces thru the jaws between the parallel forms, and an air nozzle extending the length of the pressing jaw having a discharge slot opening toward the meeting plane of the jaws to deliver air thru the air spaces, stringer means upon which the garment forms are fixed, rollers to support the stringer and forms, and guide means to hold the forms upright during movement.

5. A pressing machine comprising upright cooperating pressing jaws, means for opening and closing the jaws, a plurality of garment forms arranged in parallel spaced relation between the jaws leaving air clearance spaces thru the jaws between the parallel forms, and an air nozzle extending the length of the pressing jaw having a discharge slot opening toward the meeting plane of the jaws to deliver air thru the air spaces, means arranged to permit the forms to travel in and out the jaws, and a stop arranged to catch and hold the forms in a predetermined position.

6. A pressing machine comprising upright cooperating pressing jaws, means for opening and closing the jaws, a plurality of garment forms arranged in parallel spaced relation between the jaws leaving air clearance spaces thru the jaws between the parallel forms, means arranged to permit the forms to run in and out the press, a guide to hold the forms in vertical position during the travel thereof, and air circulating means arranged to blow air thru the air clearance spaces.

7. A pressing machine comprising cooperating upright pressing members, a pair of press levers anchored to the members, a frame on which the levers are fulcrumed, motor means connected with the levers for operation thereof, operator operated means for controlling the motor means for opening and closing the press, a stringer rod supported alongside one of the opening edges of the pressing members, means arranged to permit the rod to run along the edge of the members, and a plurality of garment forms fixed to the stringer rod and projecting up into the pressing members.

8. A pressing machine comprising cooperating upright pressing members, a pair of press levers anchored to the members, a frame on which the levers are fulcrumed, motor means connected with the levers for operation thereof, operator operated means for controlling the motor means for opening and closing the press, a stringer rod supported alongside one of the opening edges of the pressing members, means arranged to permit the rod to run along the edge of the members, and a plurality of garment forms fixed to the stringer rod and projecting up into the pressing members, and air blowing means to force air thru the pressing members.

9. A pressing machine comprising cooperating upright pressing members, a pair of press levers anchored to the members, a frame on which the levers are fulcrumed, motor means connected with the levers for operation thereof, operator operated means for contrcl1ing the motor means for opening and closing the press, a stringer rod supported alongside one of the opening edges of the pressing members, means arranged to permit the rod to run along the edge of the members, and a plurality of garment forms fixed to the stringer rod and projecting up into the pressing members, a long tapered air nozzle arranged along the upper edge of the pressing members and provided with an air discharge slit placed in alignment with the meeting plane of the pressing members to deliver air through the closed press jaws, and means for supplying air to the nozzle.

10. A pressing machine comprising cooperating upright pressing members, a pair of press levers anchored to the members, a frame on which the levers are fulcrumed, motor means connected with the levers for operation thereof, operator operated means for controlling the motor means for opening and closing the press, a stringer rod supported alongside one of the opening edges of the pressing members, means arranged to permit the rod to run along the edge of the members, and a plurality of garment forms fixed to the stringer rod and projecting up into the pressing members, a long tapered air nozzle arranged along the upper edge of the pressing members and provided with an air discharge slit placed in alignment with the meeting plane of the pressing members to deliver air through the closed jaws, and a fan and motor set arranged at one end of the nozzle to blow air therethrough for the purposes described.

11. A pressing machine comprising cooperating pressing members adapted to open and close on the work, a frame, a set of levers pivoted on the frame and holding the pressing members in upright position, motor means attached to the levers and adapted to actuate both levers and close the pressing members, a lengthwise frame part arranged parallel and beneath the upright pressing members and extending beyond the ends of the members a length substantially equal thereto, and a garment holding form sup-

ported on runners on the lengthwise frame part and adapted to travel in and out the press jaws.

12. A pressing machine comprising cooperating pressing members adapted to open and close on the work, a frame, a set of levers pivoted on the frame and holding the pressing members in upright position, motor means attached to the levers and adapted to actuate both levers and close the pressing members, a lengthwise frame part arranged parallel and beneath the upright pressing members and extending beyond the ends of the members a length substantially equal thereto, and a garment holding form supported on runners on the lengthwise frame part and adapted to travel in and out the press jaws, and means to hold the garment form in upright position and stop the same at a predetermined point.

13. A pressing machine comprising in combination, a frame, a pair of press levers fulcrumed in a frame, a press jaw carried by each lever and adapted to close one against the other, each lever being provided with a cam-way, a cam confined in each cam-way, a shaft upon which the cams are mounted, and motor means for driving the shaft.

14. A pressing machine comprising in combination, a frame, a pair of press levers fulcrumed in the frame, a press jaw carried by each lever and adapted to close one against the other, each lever being provided with a cam-way, a cam confined in each cam-way, a shaft upon which the cams are mounted, and motor means for driving the shaft, garment forms, a stringer to which the forms are anchored and which hold the forms in the press, said stringer being disposed outside the press at one side thereof, and an air nozzle arranged at the other side of the press to deliver air thru the press between the forms.

15. A hosiery and garment pressing device comprising in combination, a stringer shaft, a plurality of forms carried on the shaft, an attaching means for holding the forms in rotatable relation to the shaft, locking means for securing the forms in fixed position against rotation, and pressing jaws to close upon the forms.

16. A garment handling device comprising a stringer rod, a plurality of forms mounted thereon, and pivot means supporting the forms rotatable about an axis parallel to the longitudinal axis of the forms.

17. A garment handling device comprising a stringer rod provided with a longitudinal groove, a plurality of garment forms seated in the groove, a device for each form projecting into the rod and securing the form in the groove, and spring means cooperating with the device to seat the form in the groove yet permit the form to be lifted out of the groove for rotation and inspection of both sides of the form.

18. A garment or ironing press comprising cooperating press jaws, a frame, a set of press levers each of which is pivoted on the frame and attached at one end to a press jaw to operatively mount said levers and the jaws in the frame and simultaneously swing the jaws open and closed, and operating means cooperating with the other ends of the press levers to actuate the jaws, and including a cam way in each lever, a cam rotatably mounted therein, and means to drive the cams to swing the press levers.

19. A garment or ironing press comprising cooperating vertically mounted press jaws, a frame, a set of vertically disposed press levers pivoted on the frame and attached at their upper ends to the press jaws to mount said levers and jaws in upright position and simultaneously swing the jaws open and closed, operating means cooperating with the lower ends of the vertical press levers to actuate the jaws, a rod disposed in the plane passing between the jaws and said rod being located outside of the jaws and parallel thereto, garment-holding forms on the rod, and roller means on which the rod is carried for movement in the plane and parallel to the jaws to move the forms in and out of the jaws.

20. A pressing machine comprising cooperating press jaws, a frame, a set of press levers pivoted on the frame and attached at one end to a press jaw to operatively mount said levers and the jaws in the frame and simultaneously swing the jaws open and closed, operating means cooperating with the other ends of the press levers to actuate the pressing jaws, a work conveyor proximate one edge of the press jaws adapted to travel into the press and reverse its direction and move out of the press, guide means supporting the conveyor for back and forth travel parallel to the press jaws, and work receiving forms attached to the conveyor and carried through the pressing jaws by movement of said conveyor.

21. Apparatus for drying hosiery comprising, in combination, a drying chamber formed between a pair of parallel internally heated plates, one of which is movable laterally, a horizontally extending slidable member, two sets of vertically extending hosiery forms mounted in line on said member, the sets of forms being respectively so mounted that one of the sets of forms will be positioned within said drying chamber while the other is without the chamber, and means to reciprocate said member to withdraw the forms within said chamber from one end and enter the forms without said chamber from the opposite end.

22. Drying apparatus comprising a drying chamber, a carrier, means for imparting

reciprocating movement to the carrier, and a plurality of hosiery forms extending in the same direction relative to each other and arranged in line in a single plane on said carrier, one of said forms being arranged to enter said chamber when another is withdrawn therefrom by movement of the carrier in one direction, and the second mentioned form being arranged to enter said chamber when the first mentioned form is withdrawn therefrom by an opposite movement of the carrier.

23. Drying apparatus comprising a drying chamber, a carrier, means for imparting reciprocating movement to the carrier, and a plurality of sets of hosiery forms, said hosiery forms extending in the same direction relative to each other and arranged in line in a single plane on said carrier, one of said sets being arranged to enter said chamber when another is withdrawn therefrom by movement of the carrier in one direction, and the second mentioned set being arranged to enter said chamber when the first mentioned set is withdrawn therefrom by an opposite movement of the carrier.

24. Drying apparatus comprising a drying chamber formed between a pair of relatively movable parallel plates, a carrier, means for imparting reciprocating movement to the carrier, and a plurality of hosiery forms extending in the same direction relative to each other and arranged in line in a single plane on said carrier, one of said forms being arranged to enter said chamber when another is withdrawn therefrom by a movement of the carrier in one direction, and the second mentioned form being arranged to enter said chamber when the first mentioned form is withdrawn therefrom by an opposite movement of the carrier.

25. Drying apparatus comprising a drying chamber formed between a pair of relatively movable parallel plates, a carrier, means for imparting reciprocating movement to the carrier, and a plurality of sets of hosiery forms, said hosiery forms extending in the same direction relative to each other and arranged to lie in a single plane on said carrier, one of said sets being arranged to enter said chamber when another is withdrawn therefrom by movement of the carrier in one direction, and the second mentioned set being arranged to enter said chamber when the first mentioned set is withdrawn therefrom by an opposite movement of the carrier.

In testimony whereof I affix my signature.

EDWARD J. SCHREMP.