

F. POPE & J. ROGGINGER.
HOSIERY DRYING FRAME.
APPLICATION FILED JULY 23, 1906.

961,644.

Patented June 14, 1910.

2 SHEETS—SHEET 1.

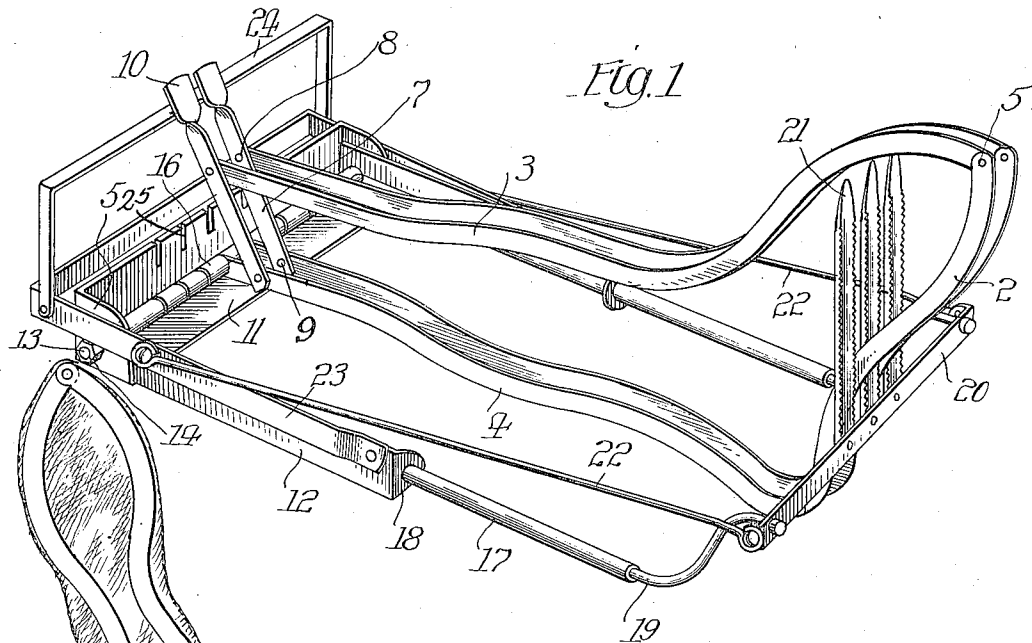
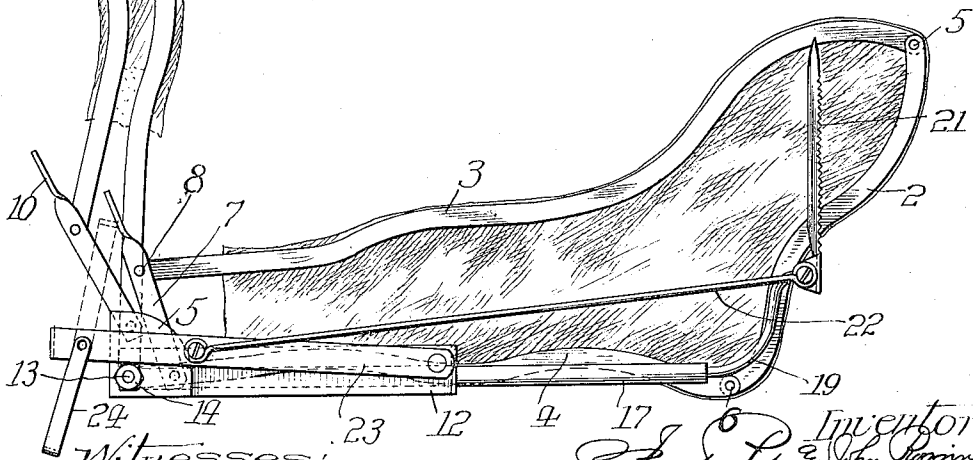


Fig. 2



Witnesses:
H. E. Barnett.
Louis B. Gruen

Inventors:
F. Pope & J. Rogginger
by R. H. Hudson & Davis
their Attys

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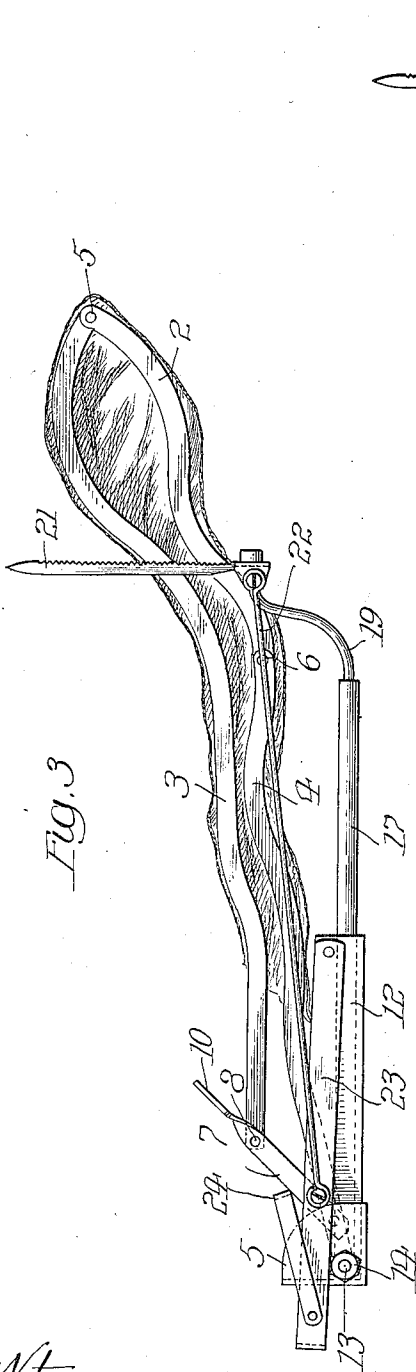


Fig. 3

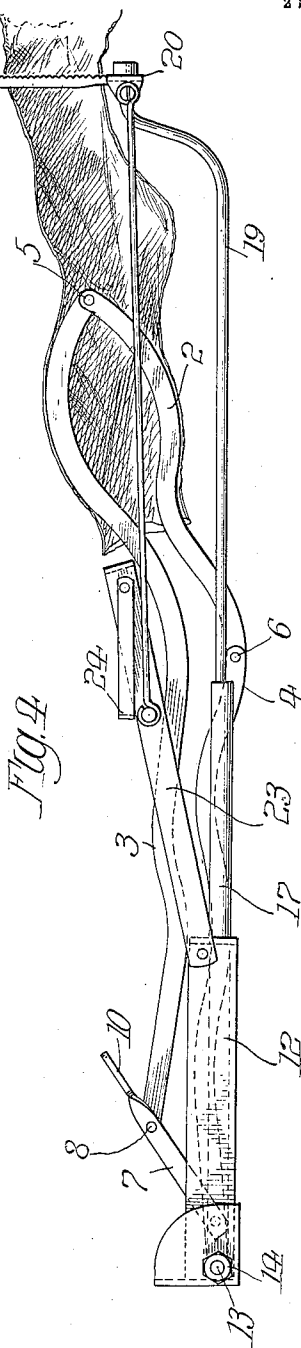


Fig. 4

Witnesses:
H. G. Barnett
Louis B. Erwin

Inventors:
Frank Pope & John Rogginger
by Hector Hibbert Davis
their Att'ys

UNITED STATES PATENT OFFICE.

FRANK POPE AND JOHN ROGGINGER, OF KANKAKEE, ILLINOIS; SAID ROGGINGER
ASSIGNOR TO PARAMOUNT KNITTING COMPANY, OF CHICAGO, ILLINOIS, A CORPO-
RATION OF ILLINOIS.

HOSIERY-DRYING FRAME.

961,644.

Specification of Letters Patent. Patented June 14, 1910.

Application filed July 23, 1906. Serial No. 327,348.

To all whom it may concern:

Be it known that we, FRANK POPE and JOHN ROGGINGER, citizens of the United States, residing at Kankakee, in the county of Kankakee and State of Illinois, have invented certain new and useful Improvements in Hosiery-Drying Apparatus, of which the following is a specification.

The general object of the present invention is to facilitate the handling of hosiery after the same has been dyed and when it is to be stretched on forms and dried. The usual process consisting in stretching the hose in a dampened condition over one-piece wooden forms and placing the same one by one in the drier entails considerable loss of time on account of the difficulty in drawing the damp material over the rigid forms, besides subjecting the hosiery to excessive stretching both in placing the same on the forms and in removing the hosiery therefrom. Furthermore, the forms are hot to handle when the drying process is concluded and the removal of the stretched and dried hosiery from the forms is attended with considerable wrinkling of the hosiery which is inclined to spoil its shape and appearance.

By the present invention it is proposed to employ collapsible forms over which the hosiery can be placed without any fitting and stretching, the mere expansion of the forms doing this work and their contraction after the drying process permitting the hosiery to be drawn off without any stretching or wrinkling.

It is furthermore proposed to provide for mounting a gang of such forms on a suitable support so that they can be brought one by one in collapsed state to an upright position and a piece of hosiery conveniently placed over the upright form, the same being then expanded and dropped to a horizontal position. In this manner a large number of forms can be placed in the drier at once and so removed when the drying process is completed, to give way to another gang of similar forms.

The invention further aims to provide convenient means for simultaneously collapsing such a gang of forms when the drying process has been completed and they are removed from the drier, thus providing for ready removal of the hosiery from the forms.

A still further object in view is to provide for mechanically drawing off or stripping the dried hosiery from the collapsed forms.

With these and incidental objects in view the invention consists in certain novel features of construction and combinations of parts the essential elements whereof are recited in the appended claims and a preferred form of embodiment of which is illustrated in the accompanying drawings and fully described hereinafter.

Of said drawings Figure 1 represents in perspective apparatus embodying the invention, some of the forms composing a gang being omitted for the sake of clearness; Fig. 2 represents said apparatus in side elevation as the same would appear during the process of placing the damp hosiery thereon; Fig. 3 represents the apparatus in side elevation as it would appear when the several forms have been collapsed preparatory to removal of the dried hosiery therefrom; and Fig. 4 is a similar view showing the apparatus as it would appear when the mechanical stripper has been operated.

In the present instance an apparatus is shown designed for the handling of men's socks but it is to be understood that the invention is not confined to apparatus for use in this particular connection but may be availed of in the handling of various kinds of hosiery.

Each of the collapsible forms, two only of which are shown complete in the accompanying drawings though a greater number will of course be employed to constitute a gang, may comprise a sole-piece 2 whose end portions constitute parts of the toe and heel of the form; a leg and instep piece 3, one end of which constitutes part of the toe of the form; and another leg-piece 4, one end of which constitutes part of the heel of the form. These three pieces as here shown are in the form of comparatively narrow bars preferably of metal and are hinged together, the bars 2 and 3 being united by a pintle 5 at the point of the toe of the form and the bars 2 and 4 being similarly united by a pintle 6 at the point of the heel of the form. It will be seen that this construction provides not only for contracting the form throughout the forepart of the foot portion but also for contracting it between the heel portion

and the instep portion. This latter is of course the widest part of the hosiery form and it is the projection of the heel portion which gives the most trouble in the use of the wooden form. The above described construction entirely obviates any difficulty in this regard because as clearly shown in Figs. 2, 3 and 4 the form may be collapsed throughout its length including this troublesome heel portion so that the sock or stocking can be slipped over the same without any stretching whatever and of course removed with as great ease when the form is collapsed. Hence there need be no stretching of the ribbed top of a sock as necessarily takes place in the use of the wooden form in getting this ribbed top past the heel portion of the form. Neither need there be any wrinkling of the hosiery in its removal from the collapsed form. Furthermore, the removal of the hosiery from the forms can be very quickly accomplished so that no prolonged handling of hot forms is required. According to the present invention no handling at all is necessary because mechanical appliances are provided for stripping the hosiery from the collapsed forms.

The leg bars 3 and 4 of each form are united at their outer portions by top bars 7 hinged to the bars 3 and 4 by pintles 8 and 9 and this top bar is extended beyond the bar 3 and given a quarter-turn to form a convenient handle 10 by which to expand the form, this being accomplished by simply pressing down on said handle when the collapsed form is in an upright position as illustrated in Fig. 2. The several forms employed are pivotally mounted side by side in a supporting frame here shown as comprising an angular cross-bar 11 and two side arms 12 projecting horizontally therefrom. The pivoting of the forms in this frame is effected by means of a rod 13 lying in the angle of the cross-bar 11 and extending through pivot holes in projecting ends of the leg bars 4 of the forms, the said rod being secured in place by a nut 14 on each end outside ears or flanges 15 of the cross-bar 11, and suitable spacing collars 16 being strung on the rod to properly separate the forms. The said cross-bar 11 and the side arms 12 support tubes 17 which project through inturned ears 18 of said side arms and extend somewhat beyond the same. These tubes constitute guideways for sliding rods 19 constituting parts of a reciprocating stripper frame. Said rods are bent upwardly at their outer ends and fastened to a cross-bar 20 from which rise a series of stripper fingers 21 each consisting of a channel bar with toothed or serrated side edges and a tapered upper end. These stripper fingers are spaced apart sufficiently to receive between them the forms with the hosi-

ery thereon and the teeth of the serrated edges point outwardly at an angle so as to take hold of the hosiery when the stripper frame is moved outwardly. This frame is connected by pitman rods 22 with an operating bail 23 pivoted to the forward portions of the supporting side arms 12. This bail is adapted to swing from a position where it rests upon the nuts 14 and encompasses the supporting frame as shown in Figs. 1, 2 and 3, to a position where it rests upon the collapsed forms as shown in Fig. 4. The swinging of the bail in this manner will have the effect of thrusting the stripper frame outwardly to the position shown in Fig. 4 and the forms having previously been collapsed in the manner presently to be described and the socks hanging limply thereon, the teeth of the stripper fingers 21 will draw them partly off said forms so that those portions lying between the ends of the forms and the stripper fingers can be grasped and the socks readily removed without any handling of the heated parts of the apparatus.

The simultaneous collapsing of the forms is effected through the medium of a bail 24 which is here shown as pivoted to the side arms of the bail 23. This bail 24 is arranged to act against the top bars 7 of the forms in the manner illustrated in Fig. 3. It will be obvious that by pressing this bail forward with its cross-bar in contact with said top bars of the forms the latter will be collapsed by reason of the turning of their component parts upon the hinges hereinbefore described. When the bail 24 has brought about the collapsing of the forms it may be thrown back to an inoperative position such as that illustrated in Fig. 4 while the other bail 23 is operated to project the stripper frame. It will of course be understood that the above described operations of mechanically collapsing the forms and stripping the socks therefrom are performed after the drying process, the entire apparatus having previously been placed bodily in the interior of the drier. The socks having been removed the bail 23 is thrown back to its normal position and then the forms are brought to upright positions one at a time and another lot of dyed hosiery placed thereon, the forms expanded one by one and lowered to a horizontal position resting between the stripper fingers 21.

The cross-bar 11 of the supporting frame is preferably notched in its upper edge as shown at 25 to receive the top bars 7 of the forms and thus steady the latter in their upright position. The cross-bar of the stripper bail 23 is utilized as a stop to limit the expansion of the forms, the top bars 7 of the latter coming down upon this cross-bar of the bail when pressure is applied upon han-

dles 10 after hosiery has been placed upon the forms in their collapsed condition and upright position as shown in Fig. 2. The expansion of the forms in the manner described of course results in filling out the socks placed upon them and holding them to the proper shape. When the expanded forms with the socks upon them are lowered they rest upon the cross-bar 20 of the stripper frame between the stripper fingers 21 and the apparatus is then placed bodily into the drier. With the form expanded and the sock stretched the latter passes freely between the fingers, but of course the sock collapses when the form contracts and thus it is brought into contact with the teeth of the serrated edges so that the latter may take hold in the stripping operation.

It will be seen that the above described construction is well adapted to thoroughly accomplish all of the objects primarily stated. At the same time it is to be understood that this construction is susceptible of considerable modification without departing from the spirit and scope of the invention.

What is claimed is:

1. A collapsible hosiery form comprising a combined toe, sole and heel piece; a combined leg, instep and toe piece hinged thereto at the toe end of the same; a combined leg and heel piece hinged to the heel end of the first named piece; and a top piece hinged to the leg ends of the other two pieces and projecting beyond one of them to constitute a handle by which to expand the form.

2. The combination of a suitable support, a gang of collapsible hosiery forms mounted thereon, and a member mounted on said support and operating to simultaneously collapse said forms.

3. The combination of a suitable support, a collapsible hosiery form mounted thereon, a member mounted on said support and operating to collapse said form, and means mounted on said support for stripping the hosiery from the collapsed form.

4. The combination with a collapsible hosiery form, of a reciprocating frame having stripper fingers standing on opposite sides of the form.

5. The combination with a supporting frame, of one or more collapsible hosiery forms pivotally mounted therein, and a reciprocating frame having stripper fingers standing on opposite sides of the forms.

6. The combination with a supporting frame, of one or more collapsible hosiery forms pivotally mounted therein, a reciprocating frame having stripper fingers and a swinging bail operatively connected with said stripper frame.

7. The combination with a supporting frame, of one or more collapsible hosiery forms pivotally mounted therein, a reciprocating frame having stripper fingers stand-

ing on opposite sides of the forms, a swinging bail, and pitman rods connecting the same with the stripper frame.

8. The combination with a supporting frame, of one or more collapsible hosiery forms pivotally mounted therein, a reciprocating frame having stripper fingers, a swinging bail operatively connected with said stripper frame and a second bail for collapsing the forms.

9. The combination with a supporting frame, of one or more collapsible hosiery forms pivotally mounted therein, a reciprocating frame having stripper fingers, a swinging bail operatively connected with said stripper frame and a second bail carried by said first named bail and operating to collapse the forms.

10. The combination with a suitable base support, of a gang of collapsible hosiery forms separately hinged thereto and movable from an upstanding position to a horizontal position.

11. The combination with a suitable base support, of a gang of collapsible hosiery forms separately hinged thereto and movable from an upstanding position to a horizontal position and a stop to limit expansion of the form when upright.

12. The combination with a suitable support, of a gang of collapsible hosiery forms separately hinged thereto and movable from an upstanding position to a horizontal position and a reciprocating stripper mounted in said support.

13. The combination with a suitable support, of a gang of collapsible hosiery forms separately hinged thereto and movable from an upstanding position to a horizontal position and means carried by said support for simultaneously collapsing said forms.

14. The combination with a suitable support, of a gang of collapsible hosiery forms separately hinged thereto and movable from an upstanding position to a horizontal position, means carried by said support for simultaneously collapsing said forms and a reciprocating stripper also carried by said support.

15. The combination with a suitable support, of a gang of collapsible hosiery forms separately hinged thereto and movable from an upstanding position to a horizontal position, a swinging bail for simultaneously collapsing said forms, a reciprocating stripper, and a bail for operating the latter to simultaneously draw the hosiery off the collapsed forms.

16. The combination of a supporting frame, a gang of collapsible hosiery forms pivotally mounted therein to move from an upright to a horizontal position and vice versa, each form having a handle-top-bar,

and a stop bar for the latter to abut when the forms are expanded.

17. The combination of a suitable supporting frame having a notched portion, and a
5 gang of collapsible hosiery forms pivotally mounted in said frame to move from a horizontal to an upright position and to engage the said notches when in the latter position,

substantially as and for the purpose described.

FRANK POPE.
JOHN ROGGINGER.

Witnesses:

F. P. DAVIS,
LOUIS B. ERWIN.