J. D. MORLEY.

TREATING KNITTED WEBS.

APPLICATION FILED FEB. 18, 1916.

1,181,789. Patented May 2, 1916.

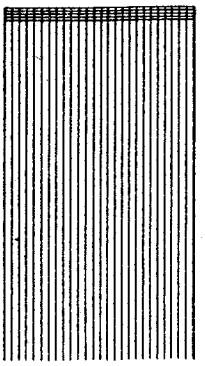


FIG. 1.

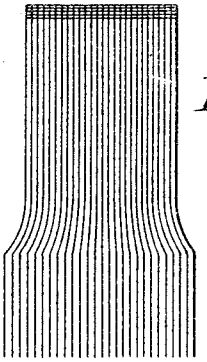


FIG. 2.

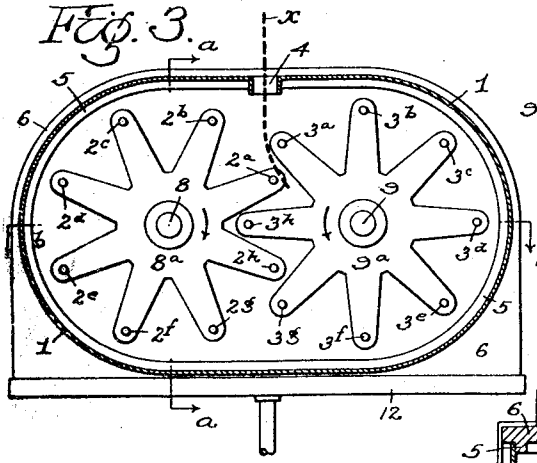


FIG. 3.

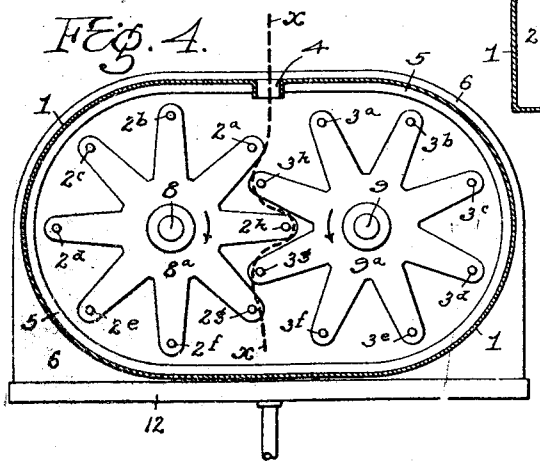


FIG. 4.

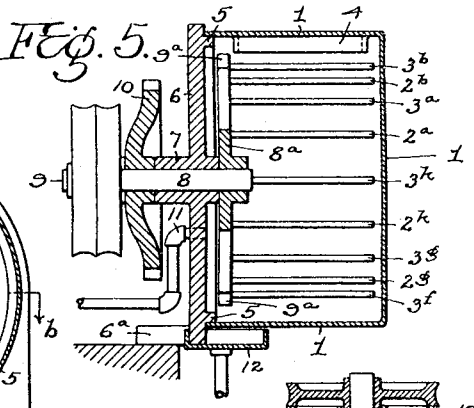


FIG. 5.

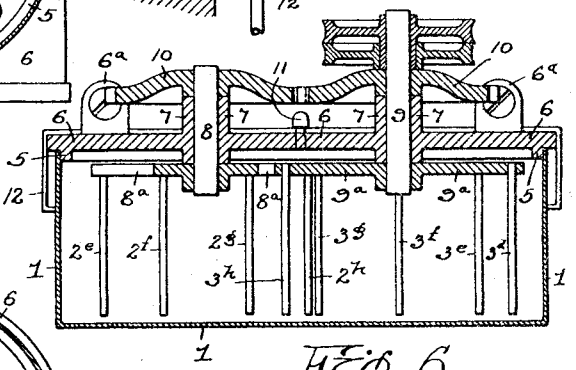


FIG. 6.

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TREATING KNITTED WEBS.

1,181,789. Specification of Letters Patent. Patented May 2, 1916.

Application filed February 18, 1916. Serial No. 79,080.

To all whom it may concern:

Be it known that I, JOSEPH D. MORLEY, a citizen of the United States, residing in New York city, New York, have invented certain Improvements in Treating Knitted Webs, of which the following is a specification.

The object of my invention is to so treat a knitted web as to effect condensation of the same by causing a closer disposition of the stitch wales, and consequent reduction in diameter if the web is tubular, a special adaptation of my invention being to effect such reduction in diameter at the top of the leg of a sock or stocking. In the latter case a further effect of the treatment is to straighten the welt or selvage terminal at the top of the leg.

My invention consists in subjecting the treated portion of the web to the action of beaters disposed transversely to the wales and moving in the direction of said wales, the treated portion of the web being preferably in a moist and heated condition during such treatment.

In the accompanying drawing Figure 1 represents a knitted web as it appears before being treated, the longitudinal lines representing the wales of the web; Fig. 2 represents the same web after a portion of the same has been treated in accordance with my invention; Fig. 3 represents a longitudinal section of apparatus which may be employed in carrying out my invention, the dotted line representing the web at the beginning of the treatment; Fig. 4 is a similar view representing the web at a more advanced stage of the treatment; Fig. 5 is a view, partly in elevation and partly in section, on the line *a*—*a*, Fig. 3, and Fig. 6 is a horizontal section on the line *b*—*b*, Fig. 3.

In Figs. 3 and 4 of the drawing, 1 represents a hood or casing containing two circularly arranged series of beaters 2^a, 2^b, etc., and 3^a, 3^b, etc., disposed transversely to the wales of the web, and traveling in the direction of said wales, one series of beaters rotating in one direction and the other series of beaters rotating in the opposite direction, said beaters being so disposed that their paths of travel intersect.

The hood 1 has therein an opening 4 through which the end of the web *x* is inserted in the direction of the wales at the point where the paths of the beaters intersect, whereby the web is first struck on one side by a beater 2^a of one set and then on the opposite side by a beater 3^a of the other set, as shown in Fig. 3, and so on by the successive beaters of each set, as shown in Fig. 4. The action of the beaters tends to draw the web forwardly, and, when the desired length of web has been subjected to the beating action, the web is retracted, consequently the beating action progresses first in one direction, as from the end of the web toward the base of the treated portion and then in the opposite direction, as from said base toward the end of the web.

The heating and moistening of the web is preferably effected simultaneously with the beating action by maintaining an atmosphere of wet steam within the casing, although such heating and moistening of the web may be effected if desired, in other ways, as, for instance, by dipping the web in hot water before subjecting it to the action of the beaters, in which case the casing 1 may be dispensed with.

In treating the upper ends of the leg webs of stockings the treatment has the further effect of straightening the welt or selvage terminal finish with which such webs are usually provided.

I have devised organized apparatus for the carrying out of my invention, the details of which are illustrated more particularly in Figs. 5 and 6 of the drawing, on reference to which it will be observed that the casing 1 is closed at one end, the opposite or open end of the casing being fitted to a flange 5 on a head 6 whereby said casing can be readily removed from said head when it is desired to gain access to the beaters on the inside of the casing. The head 6 has projecting feet 6^a whereby it may be secured to the work table or bench and projecting outwardly from said head 6 are bearings 7 for shafts 8 and 9 upon which are mounted within the casing 1 star wheels 8^a and 9^a, the projecting arms of one of these wheels carrying a series of beater bars 2^a, etc., and the arms of the other wheel carrying a series of bars 3^a, etc., as shown in Figs. 3 and 4. The shafts 8 and 9 are geared together by intermeshing spur wheels 10 and power is applied to one of said shafts, in the present instance the shaft 9, in any suitable way. Passing through the head 6 is a steam pipe 11 and projecting inwardly

from said head below the bottom of the casing 1 is a drip pan 12 which receives the water of condensation leaking between the casing 1 and the flange 5 and conducts it to any suitable point of discharge.

I claim:

1. The mode herein described of effecting closer disposition of the wales of a knitted web, said mode consisting in subjecting said web to the action of beaters disposed transversely to the wales and moving in the direction of said wales.

2. The mode herein described of effecting closer disposition of the wales of a knitted web, said mode consisting in subjecting said web, alternately on opposite sides, to the action of beaters disposed transversely to the wales and moving in the direction of said wales.

3. The mode herein described of effecting closer disposition of the wales of a knitted web, said mode consisting in subjecting said web, while the same is moist, to the action of beaters disposed transversely to the wales and moving in the direction of said wales.

4. The mode herein described of effecting closer disposition of the wales of a knitted web, said mode consisting in subjecting said web, while in a moist and heated condition, to the action of beaters disposed transversely to the wales and moving in the direction of said wales.

5. The mode herein described, of effecting closer disposition of the wales of a knitted web, said mode consisting in subjecting said web, while the same is in an atmosphere of wet steam, to the action of beaters disposed transversely to the wales of the web and moving in the direction of said wales.

6. The mode herein described of effecting closer disposition of the wales of a knitted web, said mode consisting in subjecting said web to the action of beaters disposed transversely to the wales of the web and moving in the direction of said wales, and causing said beating action to move progressively along the wales of the web.

7. The mode herein described of effecting closer disposition of the wales of a knitted web, said mode consisting in subjecting said web to the action of beaters disposed transversely to the wales of the web and moving in the direction of said wales, and causing said beating action to move progressively along the wales of the web first in one direction and then in the opposite direction.

In testimony whereof, I have signed my name to this specification, in the presence of two subscribing witnesses.

JOSEPH D. MORLEY.

Witnesses:
MARIE C. CURRY,
W. H. THORNTON.