J. F. ROBERTS.

STOCKING WELT FORMER.

APPLICATION FILED SEPT. 19, 1910.

1,001,983. Patented Aug. 29, 1911.

Fig. 1.

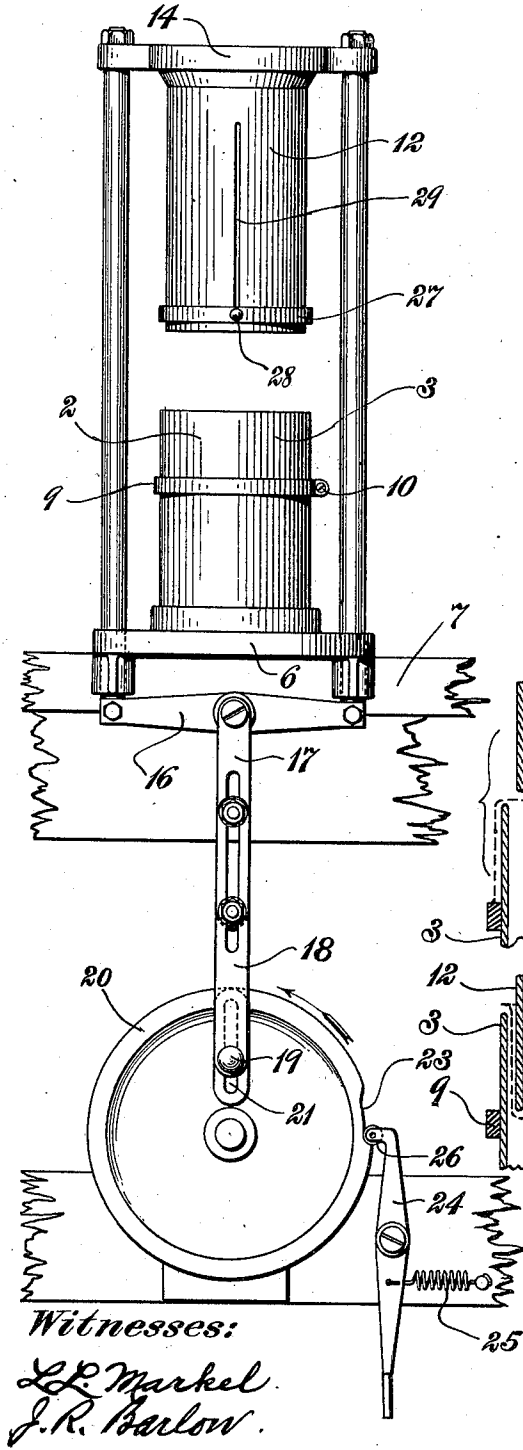


Fig. 2.

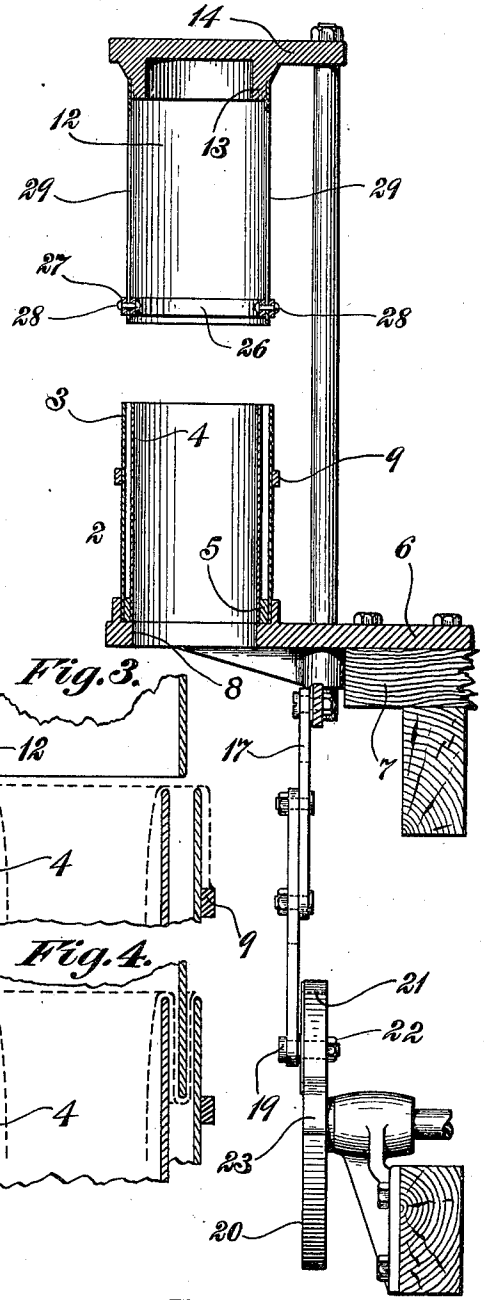


Fig. 3.

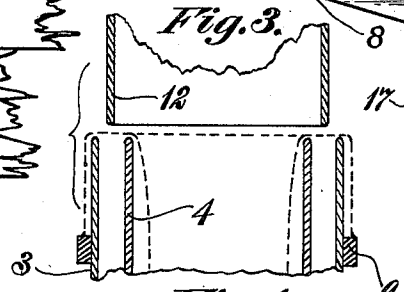
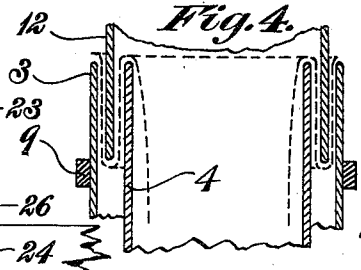


Fig. 4.



Witnesses:

L. L. Markel.

J. R. Barlow.

Inventor:

J. F. Roberts

By his Attorneys,

Sutherland & Anderson.

COLUMBIA PLANOGRAPH CO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

JOHN F. ROBERTS, OF HARTFORD, CONNECTICUT.

STOCKING-WELT FORMER.

1,001,983. Specification of Letters Patent. Patented Aug. 29, 1911.

Application filed September 19, 1910. Serial No. 582,632.

To all whom it may concern:

Be it known that I, JOHN F. ROBERTS, a citizen of the United States, residing at Hartford, in the county of Hartford and State of Connecticut, have invented certain new and useful Improvements in Stocking-Welt Formers, of which the following is a specification.

This invention relates to a stocking-welt-former the object of the invention being to provide a simple and effective device of this character by which stocking-welts can be accurately and quickly formed.

In the drawings accompanying and forming part of the present specification I have shown in detail one form of embodiment of the invention which to enable those skilled in the art to practice the invention will be set forth fully in the following description, the novelty of the invention being included in the claims succeeding said description. From this it will be evident that I do not restrict myself to the disclosure made by said drawings and description; I may depart therefrom in several respects within the scope of my invention as covered in said claims.

Referring to said drawings: Figure 1 is a front elevation of a machine including my invention. Fig. 2 is a vertical sectional side elevation of the same, and, Figs. 3 and 4 are sectional diagrams indicating the manner of using the welting mechanism.

Like characters refer to like parts throughout the several figures of the drawings.

The machine in its broadest aspect involves two tubes adapted to telescope, and this telescopic relation is what is utilized to form the welt or fold in or on the stocking or similar article. The two tubular members, as will be apparent, are relatively movable, and it is not a matter of consequence how they be operated; they may be both moved or one alone may move. In the present case, however, what might be considered the base or stocking supporting tube is stationary or practically so, the upper member being given the necessary movement. This base tube is preferably made of spaced sections, the companion tube being projectable into the space or interval between the sections of the sectional tube to form a double fold on the stocking.

Referring now more particularly to the drawings the numeral 2 denotes a tube such as answers satisfactorily my purposes, and it consists of an outer section as 3 and an inner section as 4 spaced a suitable distance from each other by the ring 5, the three parts being rigidly united. The tube 2 may be, if desired, rigidly supported by the plate 6 connected by bolts or otherwise with a table or bench 7, said plate or analogous tube carrier having an opening 8 in register with the opening of the inner tubular section 4. The stocking extends through this opening 8, while suspended from or by the tube 2, the upper marginal portion of the stocking overlying the top of the tube 2 and extending across or bridging the space or interval between the two sections 3 and 4.

The tube 2 is preferably provided with a suitable gage by which the operator of the machine can determine the amount of welt to be made, and this gage may consist of a divided or split ring 9 surrounding the tube 2 and vertically slidable thereon, the gage or ring 9 being maintained in an adjusted position by a screw 10. The stocking to be welted is passed with its upper end up from the lower end of the tube 2 being inserted through the opening 8 and said upper stocking end is carried upward and is folded over the upper end of the top of the tube 2 and then brought down outside the same until the upper edge of the stocking is in contact with the gage 9 which has been previously adjusted. With the stocking in this position it is in readiness for welting, and this operation will be hereinafter described.

The upper or movable tube is denoted by 12, and it is fitted around the pendant annular portion or flange 13 of a head 14 rigidly connected with the vertically reciprocatory parallel rods which have a sliding motion through perforations in the plate 6 and which are connected at their lower extremities by a cross piece 16. The tube 12, as will be clear, is projectable into the space between the sections 3 and 4, and as it moves into said space, the upper portion of the stocking is folded or doubled on itself to produce the welt, and as will hereinafter be described, the said upper tube is so related as to form the welt in one complete stroke thereof, provision being made for adjustment of the said upper tube to adapt it to welts which vary in depth. When, however, the machine is set to any one adjustment, the welts formed during such adjustment never vary and I might state at

this point that while the welts can be precisely and accurately formed, no skilled operator is necessary in this connection.

To the cross bar or connecting member 16 approximately centrally thereof I have shown pivoted the rod 17 adjustably connected as by a longitudinal slot and double pin connection to a second and substantially similar rod 18 and the purpose for this adjustable connection will be hereinafter described, although it might be indicated that the two rods comprise together practically a longitudinally adjustable pitman. The lower rod 18 has a pivotal connection with a crank pin 19 which is adjustable radially of the wheel or disk 20 in a slot 21 in said wheel, the adjustment of the pin 19 being obtained by a nut 22 which is adapted to engage said wheel.

By adjusting the crank or wrist pin 19 the stroke or amount of movement of the upper tube can be regulated to adapt the same to the disposition of the gage 9. In any event, however, the welt is formed on one complete or full reciprocation of the upper tube 12, it being evident that as the wheel 20 turns in the direction of the arrow, the said tube 12 through the intermediate connections is lowered and then elevated. It will be obvious, of course, that when the crank or wrist pin 19 is adjusted, the rods 17 and 18 have to be correspondingly adjusted so as to secure the proper length of pitman or connection between the wheel 20 and the cross bar 16. The wheel 20 is shown as having a peripheral notch 23 to receive the stop portion of a lever 24 fulcrumed between its ends to the table or other support 7 of the frame, a spring 25 being connected with the lower branch of said lever 24 so as to normally hold the active or operative end of the lever which, it will be understood, acts as a stop in the notch 23. The active end of the lever may be provided with an anti-friction wheel 26 to engage the unnotched portion of the wheel 20 when the latter turns. The wheel 20 may be intermittently operated by means of a clutch, although I have not deemed it necessary to illustrate such a device. As a matter of fact the wheel can just as well be turned directly by hand. Should a clutch, however, be utilized, I should prefer to operatively connect the lever therewith so that when the lever is thrown to release the wheel 20 such motion would also clutch said wheel to a source of power to give the same one complete turn. From what I have already stated it will be evident that the mechanism for operating the movable device of the welt mechanism is not a material matter. There may be cases where the members of the welting mechanism may be operated by hand.

From the statement already made it is believed superfluous to set forth the operation of the invention for this has been practically done. Brief reference, however, might be had to Figs. 3 and 4. In Fig. 3 the lower tube 2 is shown as supporting a stocking, the latter being in dotted lines, and a part of the upper portion of the stocking hanging down outside the said tube 2 and resting on the gage 9. In this Fig. 3 the upper tube 12 is assumed to be descending being almost to the lower tube. On the continued motion of said upper tube the same will enter the space between the sections 3 and 4 and will, as shown in dotted lines in Fig. 4, fold the upper portion of the stocking on itself. On the completion of the downward movement of the upper tube the retracted or ascending movement thereof will commence. I prefer to apply weight to the stocking on the ascending movement of the tube, so as to prevent positively the stocking being carried upward by the said upper tube. There may be instances, however, that this weighting means may be altogether omitted, and naturally this observation applies to other parts; for instance, it is not essential that the gage 9 be provided. The weighted means shown consists of inner and outer rings 26 and 27 associated with the upper tube 12 and connected by rivets 28 extending through vertically elongated slots 29 in said upper tube said slots 29, as will be clear, being diametrically opposite. The connecting rivets 28 normally bear, owing to the weight of the two rings 26 and 27 against the lower walls of the slots 29, and they are also normally located near the lower end of said tube 12. When, therefore, the tube 12 descends, as previously indicated, the rings 26 and 27 will engage the stocking and will continue to do so as the tube 12 enters the space between the sections 3 and 4. They do not affect in any way the formation of the welt, but as the tube 12 ascends, the rings or weights 26 and 27 will remain against the stocking thereby preventing the same from being pulled up as the tube 12 rises.

What I claim is:

1. A welt-forming machine comprising a pair of tubes, one of which has spaced sections, said tubes being relatively movable to cause the projection of one tube into the space between the sections of the other tube.

2. A welt-forming machine comprising a pair of tubes one of which has spaced sections, said tubes being relatively movable to cause the projection of one tube into the space between the sections of the other tube, and means for gaging the amount of welt.

3. A welt forming machine comprising a pair of tubes one of which has spaced sections, said tubes being relatively movable to cause the projection of one tube into the space between the sections of the other tube

to form a double fold in a tubular textile article, and the folding portions of the sectional tube and the folding portions of the companion tube all being rounded.

4. A welt forming machine comprising a pair of tubes, one of which has spaced sections of cylindrical form, and the other tube being also cylindrical, said tubes being relatively movable to cause the projection of one tube into the space between the sections of the other tube.

5. A welt-forming machine comprising a relatively stationary tube having spaced sections, a second tube projectable into the space between the sections of the other tube, and an annular welt gage surrounding the relatively stationary tube and adjustable thereon.

6. A welt-forming machine comprising a relatively stationary stocking supporting tube having spaced sections, a tube movable into the space between the sections of the other tube, and means for holding the article being welted against the relatively stationary tube during a portion of the movement of the companion tube.

7. A welt-forming machine comprising a relatively stationary tube having inner and outer sections spaced from each other, a movable tube projectable into the space between said sections, and weight means slidably connected with the movable tube, for engaging the article being welted during a portion of the movement of the movable tube.

In testimony whereof I affix my signature in presence of two witnesses.

JOHN F. ROBERTS.

Witnesses:
HEATH SUTHERLAND,
FREDERIC E. ANDERSON.