

F. C. & A. SCHOLLER & J. C. DEMPSEY.
 DEVICE FOR REMOVING CREASES FROM STOCKINGS AND SIMILAR ARTICLES
 PREPARATORY TO SINGEING.
 APPLICATION FILED OCT. 30, 1907.

968,497.

Patented Aug. 23, 1910.

3 SHEETS—SHEET 1.

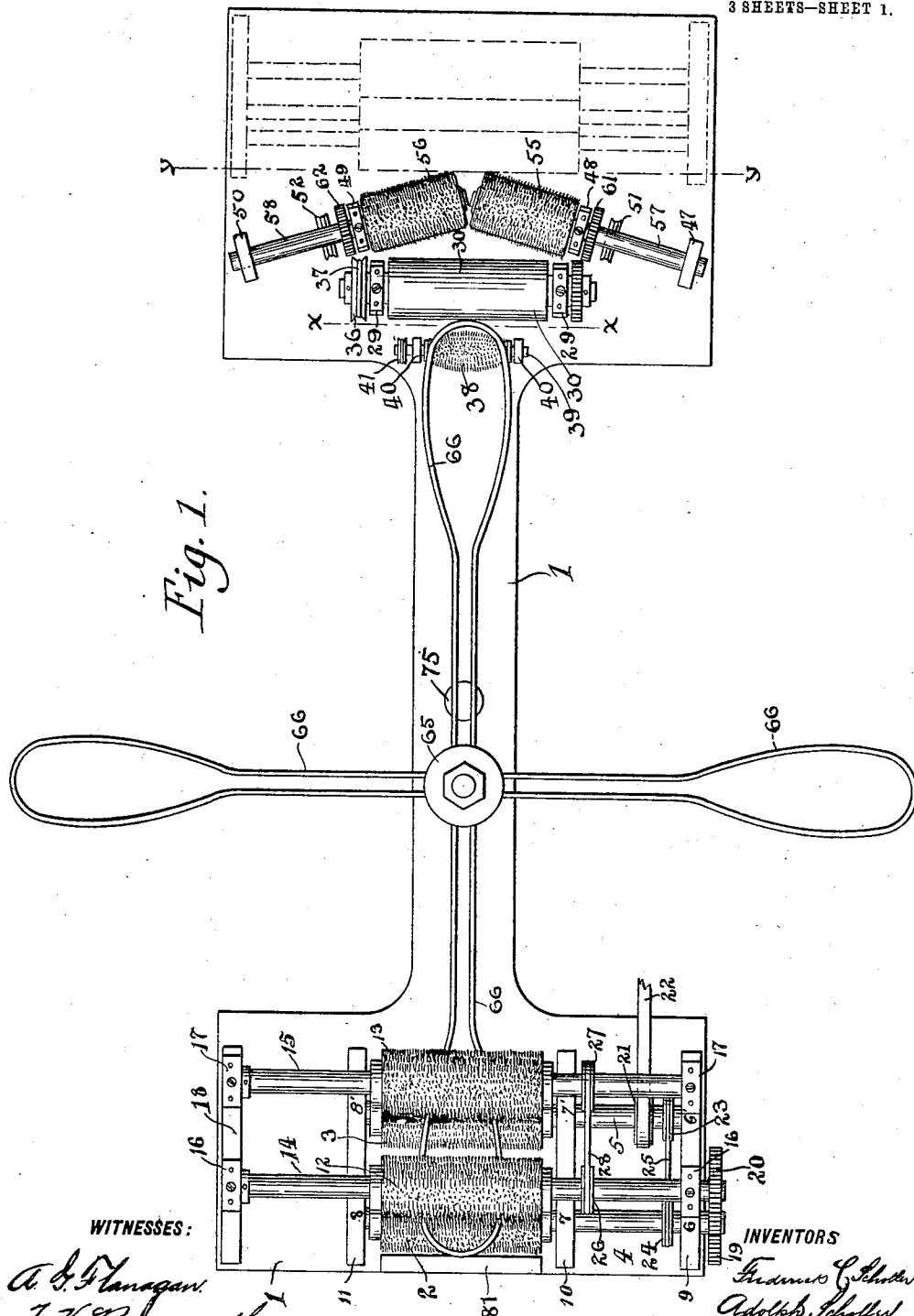


Fig. 1.

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3 SHEETS—SHEET 2.



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3 SHEETS—SHEET 3.

Fig. 4.

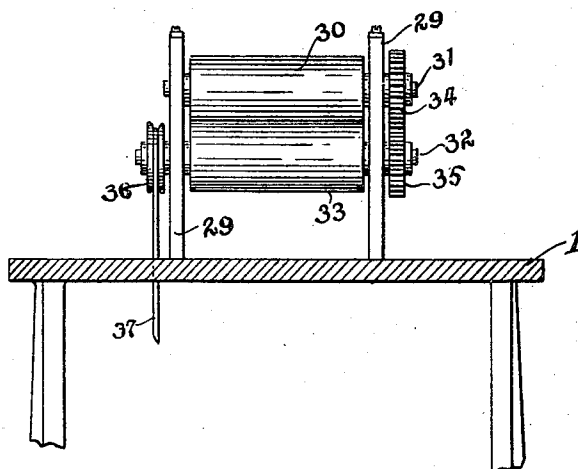
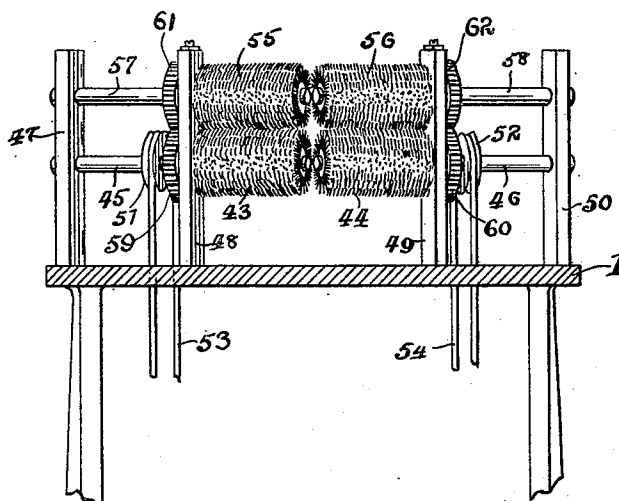


Fig. 5.



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UNITED STATES PATENT OFFICE.

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DEVICE FOR REMOVING CREASES FROM STOCKINGS AND SIMILAR ARTICLES PREPARATORY TO SINGEING.

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Specification of Letters Patent.

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To all whom it may concern:

Be it known that we, FREDERICK C. SCHOLLER, ADOLPH SCHOLLER, and JOHN C. DEMPSEY, citizens of the United States, residing in Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented certain new and useful Improvements in Devices for Removing Creases from Stockings and Similar Articles Preparatory to Singeing, of which the following is a specification.

This invention relates to a device for removing creases from stockings and similar articles preparatory to singeing, and it consists of mechanism for automatically removing the creases by smoothing and stretching the articles and delivering them in a smooth and even condition for singeing. In the singeing of stockings and similar articles it is highly desirable that when they are presented to the singeing flames they shall be smooth and entirely free from creases and wrinkles, in order that every portion of the surface of such articles may be uniformly singed. To accomplish this it is necessary that the creases and wrinkles be removed before they are fed into the singeing machine, and the object of this invention is to accomplish this end automatically, expeditiously and positively.

To this end the invention consists in the novel construction, arrangement and combination of the several parts of the device as hereinafter described, illustrated in the drawing, and more particularly pointed out in the claims hereunto appended.

In the drawings: Figure 1 is a top plan view of the device, a portion of singeing machine to which it may be attached being shown in dotted lines. Fig. 2 is a side elevation of the device shown in Fig. 1. Fig. 3 is a detail view of the smoothing-frame operating and locking mechanism. Fig. 4 is a vertical sectional view taken as on line X—X of Fig. 1. Fig. 5 is a vertical sectional view taken as one line Y—Y of Fig. 1, and looking toward the front of the machine.

Referring to the drawing by numerals, 1 indicates the frame on which the operative parts of the device are carried.

The numerals 2 and 3 indicate two rotary brushes mounted at one end of the frame 1,

in the same horizontal plane, on shafts 4 and 5, respectively, which shafts are each mounted in bearings 6, 7, and 8, and 6', 7', and 8' respectively, in the standards 9, 10, and 11, rigidly secured to said frame 1. The numerals 12 and 13 indicate two similar rotary brushes located in a plane above, and preferably, parallel with the horizontal plane of the brushes 2 and 3. These brushes are mounted on suitable shafts 14 and 15, journaled in bearings 16, 16, and 17, 17, respectively, in the standards 9 and 18, rigidly mounted on the frame 1.

19 indicates a pinion rigidly mounted on shaft 4 which meshes with a similar pinion 20 rigidly secured on the shaft 14, and serves to impart rotation from said shaft 4 to said shaft 14, whereby the brushes carried by said shafts are simultaneously rotated in opposite directions.

On the shaft 5 is secured a pulley 21 adapted to carry a belt 22, through which rotation is imparted to said shaft from a suitable source of power. On said shaft 5 is also secured a pulley 23 and on the shaft 4 a similar pulley 24, both preferably grooved, carrying a belt 25 whereby rotation is imparted to shaft 4 from shaft 5. On shafts 14 and 15 are rigidly secured pulleys 26 and 27, respectively, connected by a belt 28 for the purpose of imparting rotation from shaft 14 to shaft 15, as is evident. As shown in Fig. 2 the brushes in the upper horizontal plane do not impinge against the brushes in the lower horizontal plane, there being a horizontal space between them for a purpose hereinafter stated. It will be also observed that the brushes in the upper plane are not journaled in a vertical line above the corresponding brushes in the lower plane, but are set slightly forward, as shown in Fig. 2. The standards 9 and 18, where they are intersected by the horizontal plane between the brushes, are cut away, vertically a distance greater than that between the brushes, and horizontally to a point a little forward of the journal bearings of the shaft 14, for a purpose hereinafter stated.

On the opposite end of the frame 1 are standards 29, 29, in which is mounted a plain roll 30, on a shaft 31 in the same horizontal plane as the brushes 12 and 13, and

below said roll 30 in said standards 29, 29, on a shaft 32, is mounted a similar plain roll 33 in such position that its periphery will impinge against the periphery of the roll 30.

34 indicates a pinion mounted on the shaft 31 and engages with a pinion 35 on the shaft 32, whereby said rolls 30 and 33 are rotated in opposite directions.

36 indicates a pulley on shaft 32, and 37 a suitable belt connecting said pulley with a suitable source of power.

Slightly to the front of rolls 30 and 33 is a brush 38 mounted on a shaft 39 journaled in bearings in the standard 40, 40 as shown.

41 indicates a pulley on the end of the shaft 39, and 42 a belt connecting said pulley with a suitable source of power.

Adjacent to the rolls 30 and 33 on the side opposite to the brush 38, and in the same horizontal plane with the roll 33 are two rotary brushes 43 and 44, mounted on shafts 45, 46 journaled in the standards 47, 48 and 49, 50, respectively. These brushes 43 and 44 are set at an angle to the roll 33, as shown, and are mounted on the inner or free ends of their respective shafts, as is evident. Each of the shafts 45, 46 are provided with pulleys 51, 52, respectively, and are connected with suitable sources of power by belts 53 and 54, respectively.

Immediately above the brushes 43 and 44, are the brushes 55 and 56 mounted on shafts 57 and 58, journaled in the standards 47 and 48, and 49 and 50, respectively, and are set at the same angle to the roll 30 as the brushes 43 and 44 are set to the roll 33. On the shafts 45, 46, are pinions 59, 60, adapted to mesh with similar pinions 61, 62, on the shafts 57 and 58, respectively.

The numeral 63 indicates a truss of any suitable structure secured to the under side of the frame 1, and is for a purpose hereinafter set forth.

In the frame 1, midway between the forward edge of the brush 2, and the forward edge of the roll 33 is journaled a vertical rotary shaft 64, the lower end of which is journaled in the truss 63. Rigidly mounted on the shaft 64 above the frame 1, is a collar 65, upon which are mounted at right angles to each other stretching and smoothing frames or forms 66, formed to about the shape shown, and having their outer ends horizontal so that during their rotation they will pass in the horizontal plane between the brushes 2 and 3, and 12 and 13, and over the brush 38, as is evident. These frames are, preferably, flat, and may be either solid or skeleton in form, and instead of four, the number may be increased or diminished, as found desirable.

The numeral 67 indicates a collar on the shaft 64 for holding said shaft in proper

position. Secured on the shaft 64 below the frame 1 is a pinion 68; and also secured on the shaft 64, preferably between the pinion 68 and collar 67, is a disk 69 having a groove 70 in its periphery. In the groove 70 equidistant apart are four seats 71, said disks being so set on the shaft 64 that each of the seats 71 will be directly in a vertical line beneath one of the frames 66, for a purpose hereinafter set forth. If the number of frames 66 is increased or diminished, the number of seats 71 in the groove 70 of the disk 69, will be correspondingly increased or diminished.

The numeral 72 indicates a stud carried by the truss 63, and is preferably located to one side of the collar 67. Upon the upper end of this stud is pivoted a spring pressed pawl 73 having at one end thereof a lug 74 adapted to run in the groove 70 and engage a seat 71 to lock said shaft 64, and consequently the frames 66 against rotation.

The numeral 75 indicates a rotatable shaft journaled in suitable bearings in the frame 1 and truss 63, and is held in proper position by a collar 76. Secured on said shaft is a segmental gear 77 adapted to mesh at intervals with the pinion 68, and is of sufficient length to give said pinion, and consequently the shaft 64, and the frames 66 carried thereby, a one-quarter rotation at each engagement therewith. On the segmental gear 77 is a pin 78 adapted to engage one end of the pawl 73, at the instant of engagement with the pinion 68, to withdraw the lug 74 from the seat 71, thereby permitting said shaft 64 to rotate. At the instant that the segmental gear 77 becomes disengaged from the pinion 68, the lug 74 on the pawl 73 will again engage a seat 71 in the groove 70 and again lock the shaft 64 against further rotation until said segmental gear 77 again engages the pinion 68, as is evident. It is evident that if the number of frames 66 and seats 71 is increased or diminished, the length of the segmental gear 73 should be decreased or increased, in order to give to said frames 66 the proper intermittent rotation, as will be apparent. Secured on the shaft 75 is a suitable pulley 79, and 80 a suitable belt connecting said pulley with a suitable source of power. 81 indicates a suitable guide over which the stockings or similar articles are fed into the device.

The operation of the device is as follows: The frames 66 are set in the position shown in Fig. 1, and the device started. The operator draws the stocking over the guide 81 and starts it onto the end of the frame 66, when it is caught by the rotary brush 2 which draws it farther on the frame and passes it to the rotary brush 12 which engages it and draws it farther along on the frame to the brush 3, which engages it and pushes it still farther along on said frame to the brush 13

which draws the stocking completely on said frame. We have shown in the drawing four brushes for drawing the article on the frame or stretcher 66, and, while this construction is preferable, yet we have found that the article may be drawn on to the frame or stretcher by the use of a single brush, and we, therefore, do not wish to limit ourselves to the use of a plurality of brushes for this purpose. The stocking is prevented being lifted by the brush 13 by reason of the downward inclination of the frame which draws the leg away from said brush, as is evident. At this point the segmental gear 77, engages the pinion 68 and the pawl 73 and gives said frame 66 a one-quarter rotation, thus taking the frame on which the stocking has just been drawn out from between the brushes, through the cut-away portion of the standard 9, and places the next frame in position between the rotary brushes to receive a stocking, which it does in the same manner as did the first one. The frames are then again given a one-quarter rotation, which takes the frame just filled from between said brushes and places another one in position for filling, and at the same time places the first filled frame 66 at the opposite end of frame 1 over the rotary brush 38 which engages the stocking and pushes the end thereof to the plain rolls 30 and 33 which draw it from the frame in a stretched and smooth condition and passes it to the obliquely mounted brushes 43, 44 and 55, 56, which by reason of the angle at which they are set will further stretch and smooth the stocking, as is evident, and pass it to a suitable table. In the drawing this device is shown attached to a singeing machine, the feed rolls of which are shown in dotted lines, and instead of passing the stocking onto a table, said brushes, when the device is attached to a singeing machine, as shown pass the stocking directly to the feed rolls of the singeing machine thus saving handling and the danger of creasing and wrinkling.

Having thus fully described our invention, what we claim and desire to secure by Letters Patent of the United States is—

1. In a device for smoothing and stretching stockings preparatory to singeing, the combination with a rotatable member carrying a flat smoothing and stretching frame, of mechanism for drawing stockings on said frame for smoothing and stretching.

2. In a device for smoothing and stretching stockings preparatory to singeing, the combination with a rotatable member carrying a flat smoothing and stretching frame, means for drawing stockings on said frame for smoothing and stretching, and means for imparting a rotary movement to said frame.

3. In a device for smoothing and stretch-

ing stockings preparatory to singeing, the combination with a rotary member having a step by step movement, a series of flat skeleton smoothing and stretching frames carried thereby, means for drawing stockings on said frames for smoothing and stretching, of means for imparting a step by step rotation to said member.

4. In a device for smoothing and stretching stockings preparatory to singeing, the combination with a rotary member having a step by step movement, a series of radially disposed flat skeleton smoothing and stretching frames carried thereby, means for imparting a step by step movement to said member, of means for drawing stockings on said frames for smoothing and stretching, and means for automatically removing said stockings from said frames.

5. In a device of the character described, the combination with a rotatable member carrying a flat smoothing and stretching frame, of a brush for drawing articles on said frame for smoothing and stretching.

6. In a device of the character described, the combination with a rotatable member carrying a flat smoothing and stretching frame, of a rotary brush for drawing articles on said frame for smoothing and stretching.

7. In a device of the character described, the combination with a smoothing and stretching frame, of means for automatically withdrawing an article from said frame in a smooth and stretched condition and mechanisms located to the rear of said withdrawing means adapted to receive the article therefrom and further smooth and stretch the same as it passes from the device.

8. A device for removing the creases from stockings and similar articles preparatory to singeing, having in combination a rotary member having a step by step movement, a series of smoothing and stretching frames carried thereby, rotary devices for drawing an article on said frames, rotary devices for withdrawing an article from said frames, and rotary devices for smoothing and stretching said article when withdrawn.

9. A device for removing the creases from stockings and similar articles preparatory to singeing, having in combination a rotary member, and a series of smoothing and stretching frames carried thereby, means for imparting to said frames a step by step movement, rotary devices for drawing an article on said frames, rotary devices for withdrawing an article from said frames, and rotary devices for smoothing and stretching said articles when withdrawing and passing the same to a singeing machine.

10. A device for removing the creases from stockings and similar articles, having in combination a smoothing and stretching frame, a pair of rolls for withdrawing an

article from said frame, and rotary brushes set at an angle to said withdrawing rollers for pulling the wrinkles out of the article.

11. A device for removing the creases from stockings and similar articles, having in combination two pairs of rotary brushes set obliquely to each other and mounted in the path of the article passing through the device for removing the wrinkles therefrom and delivering it from the device.

12. In combination with a device for removing creases from stockings and similar articles, a smoothing and stretching frame, and a brush adapted to engage the forward end of said article to start the withdrawal thereof from said frame, whereby the said article when withdrawn will be in a stretched and smooth condition.

13. In combination with a device for removing creases from stockings and similar articles, a smoothing and stretching frame, and a rotary brush adapted to engage the forward end of the said article to start the withdrawal thereof from said frame, whereby the said article when withdrawn will be in a stretched and smooth condition.

14. A device for removing the creases from stockings and similar articles having in combination therewith a smoothing and stretching frame, mechanism for withdrawing an article from said frame, and means for starting the withdrawal of the article from said frame and passing the same to said withdrawing mechanism.

15. A device for removing the creases

from stockings and similar articles having in combination therewith a smoothing and stretching frame, rolls for withdrawing an article from said frame, and a brush for starting the withdrawal of the article from said frame and passing the same to said withdrawal rolls.

16. A device for removing the creases from stockings and similar articles having in combination therewith a smoothing and stretching frame, mechanism for withdrawing an article from said frame, means for starting the withdrawal of an article from said frame and passing it to said withdrawal mechanism, and brushes located to the rear of said withdrawing mechanism and placed at an angle thereto adapted to receive the article from said withdrawing mechanism and further stretch and smooth said article as it passes from the device.

17. In a device for smoothing and stretching stockings preparatory to singeing, the combination with a rotatable member carrying a flat smoothing and stretching frame, of mechanism for withdrawing stockings from said frame.

In testimony whereof we affix our signatures, in presence of two witnesses.

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