Feb. 26, 1935. H. HEMMERICH 1,992,666

METHOD AND APPARATUS FOR INSERTING LINER IN HOSIERY

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FIG. 1.

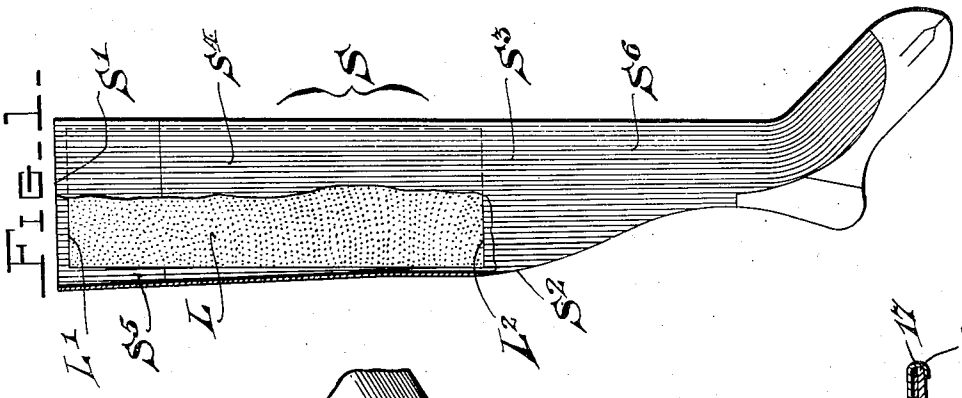


FIG. 2.

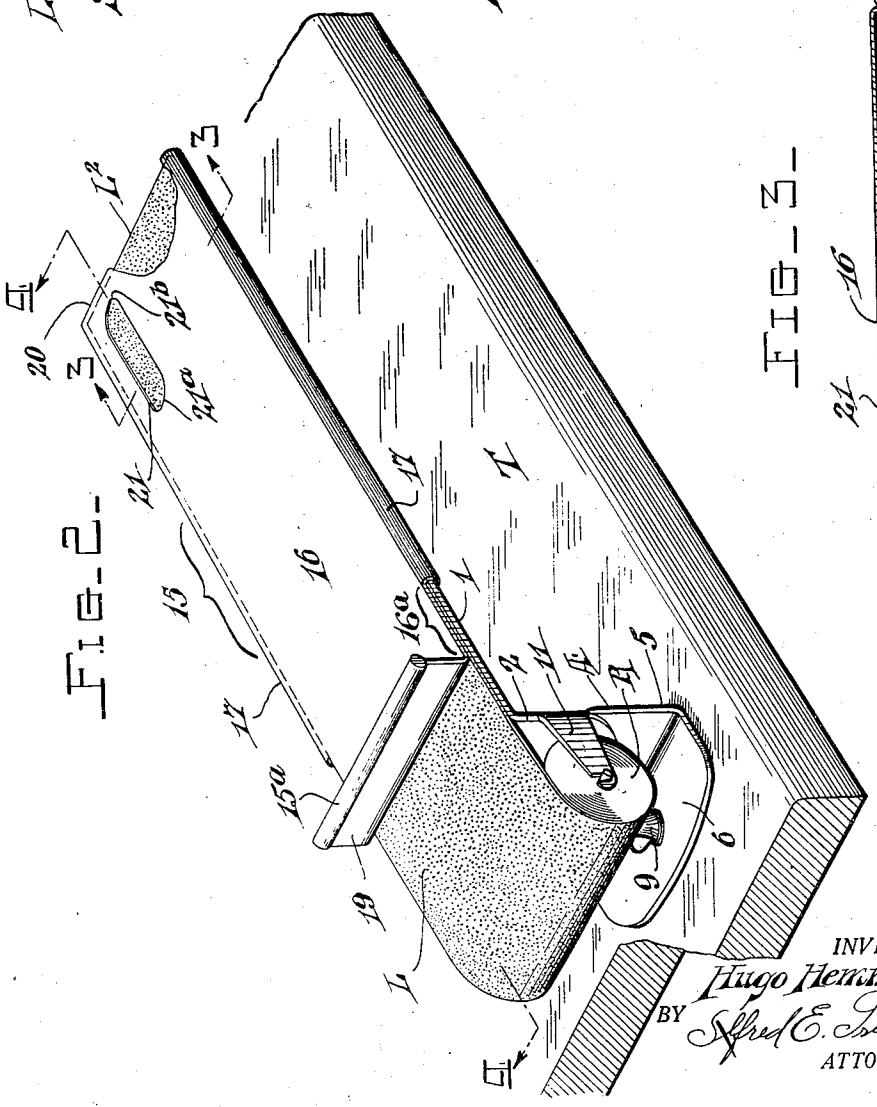


FIG. 3.

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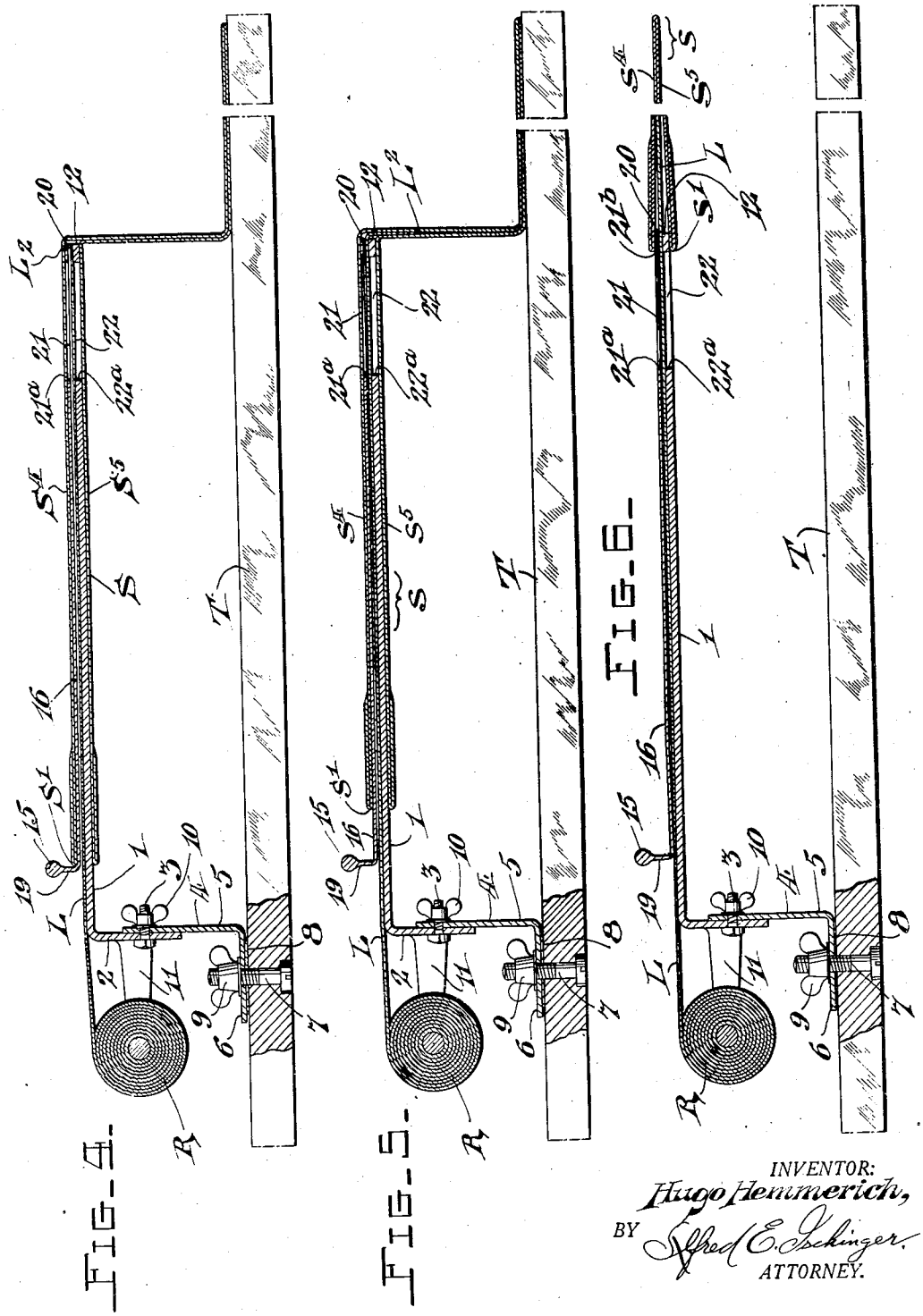


FIG. 4.

FIG. 5.

FIG. 6.

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Patented Feb. 26, 1935

1,992,666

UNITED STATES PATENT OFFICE

1,992,666

METHOD AND APPARATUS FOR INSERTING LINER IN HOSIERY

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Application March 15, 1932, Serial No. 598,967

11 Claims. (Cl. 223—59)

This invention relates to the method of, and a device for, inserting a paper or other suitable liner in hosiery and particularly in hosiery of the finer sheer grades, for the purpose of permitting a prospective purchaser to examine the fabric and to feel the texture of the fabric without running the hand into the stocking as is the common practice and which subjects the sheer fabric to possible injury by rings, finger nails or other cause of roughness on the hand inserted in the stocking.

With these and other objects in view, which will become apparent from the following detailed description of the illustrative embodiment of the invention shown in the accompanying drawings, my invention resides in the novel method, device, and combination of parts in cooperative relationship as hereinafter more particularly pointed out in the claims.

In the accompanying drawings:

Figure 1 diagrammatically illustrates a stocking having a liner inserted therein with a part of the stocking broken away to more clearly illustrate the liner;

Fig. 2 is a perspective view of the apparatus employed for inserting the liner in the stocking, part of the apparatus being broken away to more clearly illustrate the liner;

Fig. 3 is a transverse sectional view taken on the line 3—3 of Fig. 2;

Fig. 4 is a sectional elevation taken on the line 4—4, Fig. 2, and illustrating the first step in the process of inserting the liner in a stocking;

Fig. 5 is a view similar to Fig. 4, illustrating an intermediate step in the process; and

Fig. 6 is a view similar to Fig. 4, illustrating the final step of the process.

As shown in Fig. 1, the liner L comprises a strip of paper, or other suitable material, which may be of any desired color, preferably a flesh color, and of a width slightly narrower than the width of the leg portion of the stocking S, the liner extending from a line disposed a short distance inward from the upper edge L^1 at the open end of the welt portion S^1 of the stocking to a position L^2 substantially at the upper end of the fashioned portion S^2 of the leg portion S^3 of the stocking, between the one side S^4 of the stocking and the other substantially parallel side S^5 thereof, whereby the fabric of the stocking may be readily viewed without running the hand into the open end of the stocking and leaving the lower portions S^6 of the stocking free from any intermediate liner in order that the texture of the fabric may be felt between the fingers by the prospective buyer.

The apparatus for inserting the liner L into the stocking S is clearly illustrated in the remaining figures of the drawings, the apparatus comprising a flat plate element 1 in the present instance arranged in a horizontal plane above, and spaced from and substantially parallel to, a supporting table T, the plate 1 being of a width substantially equal to that of the liner L and arranged to fit freely within the open end of the leg portion of the stocking S.

The plate 1 comprises, at one end, a depending flange portion 2, which is pivoted upon a clamp bolt 3 to a vertically extending arm 4 of a bracket 5. The bracket 5 terminates at its lower end in a foot 6 which is pivotally attached to the table T by means of a clamp bolt 7, a suitable washer 8 being interposed between the upper surface of the table T and the foot 6 of the bracket 5 to permit the apparatus to be swung as a whole, in a horizontal plane about the axis of the bolt 7 and permitting the apparatus to be clamped in a substantially rigid position by means of a butterfly nut 9 threaded on to the upper end of the clamp bolt 7. In a similar manner, the plate 1 may be turned in a vertical plane about the axis of the clamp bolt 3 and may be secured in any desired position with respect to the bracket 5 by means of a butterfly nut 10 threaded on the clamp bolt 3.

Extending laterally from the opposite sides, respectively, of the depending flange 2 of the plate 1 is a pair of brackets 11, 11, between which and supported thereby is a roll R of the paper or other web material of which the liner L is composed, the web being fed from the roll R over the upper surface of the supporting plate 1 with the free end L^2 of the web L lying substantially coincident with the outer end 12 of the said plate 1, as illustrated in Figs. 2 and 4 of the drawings.

Fixedly mounted adjacent to the upper surface of the web L is a gauge 15 comprising a substantially flat guard or body portion 16 which is disposed substantially parallel to the supporting plate 1 and the web L lying intermediate the side plate 1 and the guard 16 of the gauge 15. The gauge is spaced from and, held in substantial longitudinal alignment with, the web L and the plate 1 by longitudinally extending rolled edges 17, 17 which extend around the longitudinal edges 18, 18 respectively of the plate 1 to a point below and inside the said edges 18 of the plate 1 and are secured thereto in any suitable manner, as illustrated in Figs. 2 and 3, the web L being freely slidable through the liner guide thus formed.

The gauge 15 is provided with a vertically extending flange 19 which is spaced from the opposite end 20 of the gauge 15 a distance substantially equal to the desired length of the liner L to be inserted within the stocking S, the vertical flange 19 functioning as a stop against which the upper edge S^1 of the stocking S bears when the stocking is placed over the plate 1, the liner L, and the guard 16 of the gauge 15, during the inserting process, as will be fully disclosed hereinafter.

The body portion 16 of the gauge has a resilient portion 16^a, Fig. 2, which extends a substantial distance from the ends of the rolled edges 17, 17, and is adapted to be depressed into engagement with the web L to hold the same while severing therefrom at the end of the liner guide, the liner insert deposited within the stocking, as hereinafter more fully described. The round edge 15^a of the gauge 15 provides a handle for the operator so that the portion 16^a can be conveniently held down until the severing operation on the deposited liner within the stocking is completed.

Adjacent to the end 20 of the gauge 15, and perferably adjacent one of the side edges thereof is an elongated opening 21 formed in the body portion 16 of the gauge 15, the lengthwise measurement of the opening 21 extending in a direction longitudinally of the guard 16 and substantially parallel to the said side edge thereof.

In the plate 1, and vertically aligned with the opening 21 in the gauge 15, is a corresponding elongated opening 22, as shown in Figs. 4, 5 and 6, for purposes hereinafter described.

When inserting the liner L in a stocking, the apparatus is placed in a position illustrated in Figs. 2 and 4 with the end edge 20 of the gauge 15, the end L^2 of the web L, and the end edge 12 of the plate 1 substantially coincident with one another. The stocking is then drawn over the free end of the apparatus, as illustrated in Fig. 4, until the open end S^1 of the stocking S engages the stop 19 of the gauge 15.

With the apparatus and the stocking in the position shown in Fig. 4, the opposite sides S^4 and S^5 of the stocking S are pressed tightly against the web L, through the openings 21 and 22 in the member 16 and plate 1, respectively of the liner guide, by, for example, the thumb and forefinger of the operator's right hand, adjacent to the inner ends 21*a* and 22*a* of the openings 21 and 22, respectively, and, while the two sides S^4 and S^5 of the stocking and the portion of the web L are thus gripped between the fingers, they are moved along the openings 21 and 22 toward the free ends 12 and 20 of the plate 1 and the gauge 15, respectively, from the position shown in Fig. 4 to that shown in Fig. 5, whereby the free end L^2 of the web L is moved beyond the ends 12 and 20 of the plate 1 and gauge 15, respectively.

The projecting portion of the web L and the opposite sides S^4 and S^5 of the stocking are then gripped together between the thumb and forefinger of the right hand beyond the free ends 12 and 20 of the plate and gauge. The stocking and web L are then drawn longitudinally of the gauge 15 and the plate 1 until the open end S^1 of the stocking is in line, or substantially in line, with the outer end 21*b* of the opening 21, as illustrated in Fig. 6 whereupon the stop end 19 and portion 16^a of the gauge 15 is pressed down tightly on to the web L to clamp the web securely to the plate 1, to prevent further movement of the web L relative to the plate 1 and the gauge 15.

By further movement of the hand gripping the stocking, together with the intermediate web L, in a direction substantially perpendicular to the plate 1 and gauge 15, starting at one side and progressing toward the opposite side of the web, the portion of the web within the stocking will be separated or torn from the portion of the web gripped between the gauge 15 and the plate 1, by the end 20 of the gauge 15 or by the end 12 of the plate 1, operating similarly to a knife edge to cut or tear the paper in a substantially straight line transversely of the web L from one edge to the opposite edge thereof. This section leaves the severed portion of the web L in the predetermined position within the open end of the stocking A, between the sides S^4 and S^5 thereof, as clearly illustrated in Fig. 1. The apparatus is then in the position illustrated in Figs. 2 and 4 ready to receive another stocking for a repeat of the operations above noted.

It will be seen from the foregoing that the insertion of a liner within a stocking causes the liner guide to be automatically refilled from the roll R of liner material. The construction disclosed permits the use of liner material in the form of a roll directly fed to the liner guide, and cutting of the liner material is not required prior to insertion of a liner within a stocking, whereby liners of different lengths may be obtained from the same roll. The use of liner material in the manner and form disclosed reduces the cost of the liners, and insures positive feeding into the stocking of but one liner insert at a time, so that the operator who inserts the liner need not be experienced, although it will be understood that two or more strips of liner material (which may be of different colors, or have other distinguishing characteristics) may be contained on the roll R, or on separate rolls, and may be fed simultaneously in the manner of the single strip shown.

Of course, the method and device for inserting a liner in stockings as specifically described, can be changed and modified in various ways without departing from the invention herein disclosed and hereinafter claimed.

I claim:

1. The method of loosely inserting a sheet liner in a stocking which comprises placing the liner on a relatively rigid support with the end of the liner and one end of the support substantially coincident one with the other, inserting the support and the liner partly into the open end of the stocking, simultaneously gripping the liner and the overlying portions of the stocking through an opening in the support at a point spaced inwardly from the said end of the support, moving the gripped stocking and liner toward the said end of the support to project the said end of the liner beyond the said end of the support, regripping the projected portion of the liner and the overlying portions of the stocking beyond the said end of the support and moving the said liner and stocking outwardly with respect to the support until the open end of the stocking lies adjacent to the said end of the support, holding the liner firmly to the support to prevent further relative movement therebetween, severing the portion of the liner contained within the stocking from the portion of the liner maintained by the support by effecting a shearing contact of the liner with the said end of the support, and withdrawing the support from the stocking.

2. An apparatus for inserting a liner in a stocking comprising a substantially flat support for a strip of liner material and against which one face of a portion of the strip is arranged to lie, a guard element comprising a substantially flat element arranged to lie adjacent to the opposite face of the said portion of the strip with one end of the guard element substantially aligned with one end of the supporting element, said elements being provided with substantially aligned openings adjacent the said aligned ends thereof for permitting the liner strip and the stocking to be simultaneously gripped for relative movement longitu-

dinally of and with respect to said elements, means for holding the strip against further relative movement with respect to said elements to permit the strip to be torn at, and by contact with, one of the said aligned ends of said elements, and means for supporting the strip in the form of a roll at the opposite end of said support.

3. A device for loosely depositing a sheet liner part way into a stocking comprising a base, a flat liner guide member mounted on said base for insertion into the stocking, said guide member adapted to have a strip of liner supply fed therethrough and having means, operable at the time of severing the liner deposited within the stocking from the strip of liner supply, for preventing movement of the liner supply within the guide member.

4. A device for loosely depositing a sheet liner part way into a stocking comprising a base, a flat liner guide member mounted on said base for insertion into the stocking, said guide member having means for severing the liner deposited within the stocking from a strip of liner supply fed through said guide member, and having means for preventing movement of the liner within the guide member while severing the liner deposited within the stocking.

5. A device for loosely depositing a sheet liner part way into a stocking comprising a base, a flat liner guide member mounted on said base for insertion into the stocking, a supporting base member for said guide member, and bracket structure connecting said guide and base members having means for adjusting the angle of the guide member relative to the plane of the base member and for rotating said guide member relative to said base member in a plane substantially parallel to the plane of the base member.

6. A device for loosely introducing a sheet liner part way into a stocking, comprising a base, a flat stocking insertion member mounted on said base having a liner supply inlet opening and a liner discharge opening and adapted to have a strip of liner stock pass therethrough, means formed on said insertion member for holding a roll of liner supply, said member having apertures in opposite sides thereof adjacent to said discharge opening to permit gripping a liner from above and below said member between the fingers of an operator for unwinding the liner strip from said supply during the withdrawal of a stocking from said member.

7. A device for inserting a liner into a stocking including a substantially flat support for a strip of liner material, a relatively flat guard substantially parallel to said support and secured thereto, said support and guard affording a passage therebetween for a strip of liner material, said guard and support having aligned ends and open portions adjacent to the leading edge of the liner strip for permitting said liner strip to be grasped between opposite sides of a stocking placed over the end of said device for relative movement longitudinally thereof to permit the strip to be torn at, and by contact with, one of the aligned ends of said support and guard, the end of the support distant from the end aligned with the guard being provided with a depending flange portion, said flange including brackets adapted to support the strip of liner material in roll form.

8. A device for inserting a liner into a stocking including a substantially flat support for a strip of liner material, a relatively flat guard substantially parallel to said support and secured thereto, said support and guard affording a passage therebetween for a strip of liner material, said guard and support having aligned ends and open portions adjacent to the leading edge of the liner strip for permitting said liner strip to be grasped between opposite sides of a stocking placed over the end of said device for relative movement longitudinally thereof to permit the strip to be torn at, and by contact with one of, the aligned ends of said support and guard, the end of the support distant from the end aligned with the guard being provided with a depending flange portion, a bracket having a vertical leg adjacent to said end flange, means for pivotally securing said end flange to the vertical leg of said bracket, and means for pivotally securing said bracket to a stationary support.

9. A device for inserting a liner into a stocking including a substantially flat support for a strip of liner material, a relatively flat guard substantially parallel to said support and secured thereto, said support and guard affording a passage therebetween for a strip of liner material, said guard and support having aligned ends and open portions adjacent to the leading edge of the liner strip for permitting said liner strip to be grasped between opposite sides of a stocking placed over the end of said device for relative movement longitudinally thereof to permit the strip to be torn at, and by contact with, one of the aligned ends of said support and guard, the end of the guard distant from the end aligned with the support being provided with a portion bendable to hold the liner strip against the support during the tearing off operation of the liner strip.

10. A device, for depositing a liner into a stocking, comprising a liner guide for insertion into the stocking, said guide being adapted to have a strip of liner supply fed therethrough and having means, operable at the time of severing the liner, deposited in the stocking, from the strip of liner supply, for preventing movement of the liner supply within the guide.

11. A stocking-inspecting device comprising a structure including an elongated stocking-insert plate and means adjacent to one end of the plate for supporting the same, an elongated gauge plate disposed in adjacent parallel-plane relation to the insert plate, said plates having longitudinal registering through slots adjacent to the free other end of the insert plate and one of the plates having an edge adjacent to said free end for severing a stocking liner, means for supporting a supply roll of sheet-liner material for feeding longitudinally between the insert and gauge plates in direction from said support and toward said free end by pinching the liner and the stocking from opposite sides of the plates through said slots and pulling the liner and the stocking toward said free end, and means for limiting inward placing of the stocking over the plates and holding the liner against longitudinal movement while severing the liner on said edge.

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