Sept. 11, 1951 M. HARTLINE 2,567,478

HOSIERY INSPECTION DEVICE

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FIG. 1.

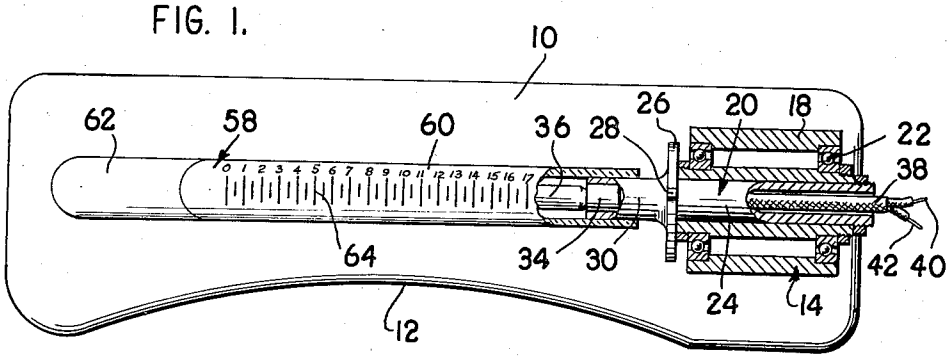


FIG. 2.

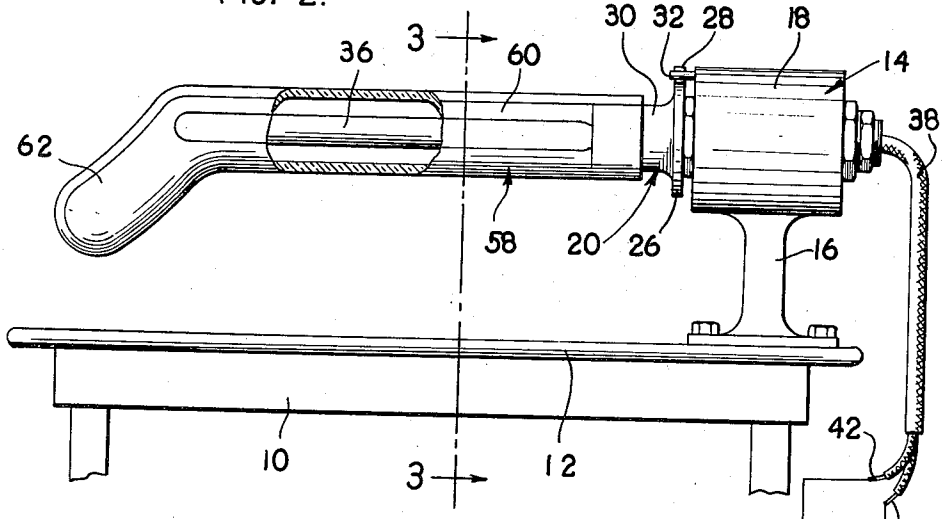
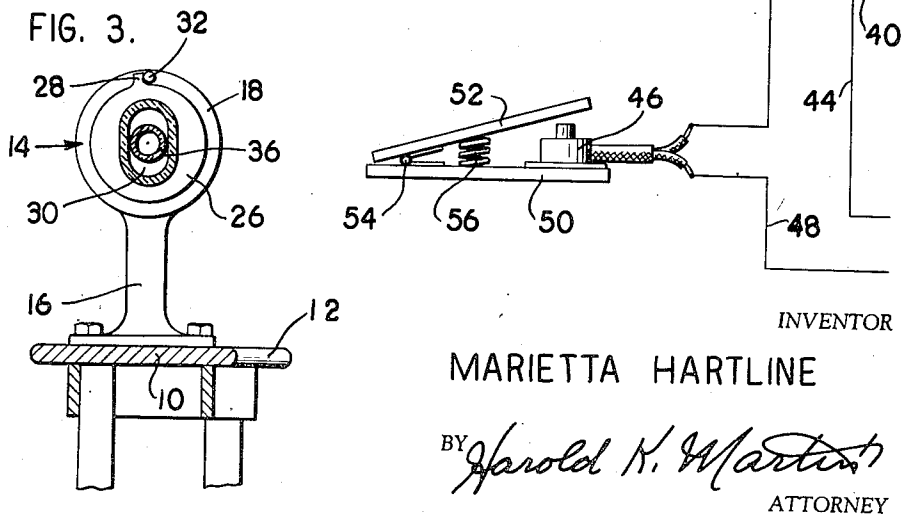


FIG. 3.



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HOSIERY INSPECTION DEVICE

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3 Claims. (Cl. 223—75)

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This invention relates to a hosiery inspection device and has for its primary object to facilitate the detection of flaws in knitted hosiery.

Another object is to detect the length of an article of hosiery during the inspection of the article for flaws.

A further object is to permit the inspection of articles of hosiery having different foot size so that a single machine may be employed to inspect hosiery of multiple size by the simple expedient of substituting one hosiery support form for another possessing a different foot size.

A still further object is to illuminate the interior of an article of hosiery so that any flaws contained therein may be easily and quickly detected and to prevent the twisting of the conductors through which energy is conducted to the illuminating means and possible breakage of such conductors.

The above and other objects may be attained by employing this invention which embodies among its features a pedestal, a carrier mounted on the pedestal to rotate about a horizontal axis and a hosiery supporting form demountably mounted on the carrier and projecting horizontally from one end thereof.

Other features include a hollow hosiery supporting form of translucent material demountably mounted on the carrier and projecting horizontally from one end thereof and a longitudinal row of graduation marks on said form by which the length of an article of hosiery mounted on the form can be determined.

Still other features include an elongated illuminating means carried by the carrier and projecting into the hosiery supporting form and means selectively to energize and deenergize the illuminating means by the movement of the foot of an inspector.

Still other features include a stop member carried by the pedestal and a stop carried by the carrier for engaging the stop member and limiting rotary movement of the carrier to less than 360°.

In the drawings—

Figure 1 is a top plan view of a hosiery inspection device embodying the features of this invention and showing portions thereof in sections more clearly to illustrate certain details of construction.

Figure 2 is a side view of the hosiery inspection device illustrated in Figure 1 showing a portion of the hosiery supporting form in section, and further illustrating diagrammatically a foot treadle and push button by which the illuminating means may be energized and deenergized, and

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Figure 3 is a vertical sectional view taken substantially along the line of 3—3 of Figure 2.

Referring to the drawings in detail this improved hosiery inspection device is mounted on a suitable bench or table 10 of any conventional construction, the top of which is preferably provided with an arcuate recess 12 opening through one longitudinal side to facilitate the approach of an inspector toward the inspection device.

The hosiery inspection device designated generally 14 comprises a pedestal 16 which is bolted or otherwise secured to the top of the table or bench 10 and is provided with an enlarged head 18 in which a carrier designated generally 20 is mounted to rotate about a horizontal axis preferably upon anti-friction bearings 22. The carrier 20 comprises a tubular body 24 which extends through the head 18 and formed intermediate the ends of the tubular body 24 is an outstanding annular flange 26 carrying a radially extending stop 28, the purpose of which will more fully hereinafter appear. The major portion of the tubular body 24 is of circular cylindrical cross section, while that portion 30 of the tubular body projecting beyond the flange 26 is of substantially elliptical form to project into the adjacent end of a hosiery supporting form to be more fully hereinafter described. A suitable stop member 32 is carried by the end of the head 18 adjacent the flange 26 and projects horizontally into the path of movement of the stop 28, as will be readily understood upon reference to the drawings.

Carried by the portion 30 of the carrier 20 and entering into the end of said portion 30 remote from the flange 26 is a conventional lamp socket 34 in which a conventional elongated electrically energized lamp 36 is supported. A conductor cable 38 containing conductors 40 and 42 is coupled at one end to the lamp socket 34 in a conventional manner and leads through the tubular body 24 beyond the end thereof remote from the socket 34. One of these conductors is connected through a conventional conductor 44 to any suitable source of electrical energy while the conductor 42 leads to one side of a conventional push button 46, the opposite side of which is connected through a medium of the conductor 48 to the side of the power source opposite to that of which the conductor 44 is connected. The push button 46 is preferably mounted on a base 50 upon which a suitable treadle 52 is pivotally coupled as at 54 and this treadle is pref-

erably urged upwardly under the influence of a spring **56** so as to hold it out of conduct with the push button until such time as pressure is applied by the foot of an inspector to depress the push button and cause energy to flow into the illuminating means **36** and thus energize the latter.

In order to properly support an article of hosiery in position to be inspected, a hosiery supporting form designated generally **58** is employed. This hosiery supporting form comprises a hollow body formed of a suitable transparent or translucent material, such as glass or a plastic composition. The form **58** comprises a leg portion **60** and a foot portion **62**, the latter being constructed to fit a given size of hosiery. In instances where the hosiery supporting form **58** is formed of a transparent material, the inside surface is preferably frosted or sand blasted to produce light defusion and prevent glare upon the illumination of the lamp **36**. Both the leg portion **60** and the foot portion **62** of the hosiery supporting form **58** are of substantially elliptical cross section, as will be readily understood upon reference to Figure 3 and formed along the upper side of the leg portion **60** and extending from a point near the junction of the leg portion **60** with the foot portion **62** is a longitudinal row of graduations **64** by which the length of an article of hosiery mounted on the hosiery supporting form **58** may be determined. The end of the leg portion **60** of the hosiery supporting form **58** remote from the foot portion **62** is fitted over the portion **30** of the carrier **20** and held thereon by frictional contact therewith. It will thus be seen that when articles of hosiery of one size are to be inspected, a hosiery supporting form **58** possessing that particular size of foot portion **62** is selected and mounted on the portion **30** merely by longitudinal movement over the illuminating means **36**. In this way the hosiery supporting forms **58** may be readily interchanged to suit the foot size of the hosiery to be inspected.

In use a hosiery supporting form of the preferred size is selected and mounted on the carrier **20** as illustrated in the drawings and the inspector then will pull an article of hosiery over the foot portion **62** thereof and onto the leg portion **60**. With the article of hosiery thus in place, pressure is applied on the treadle **52** to energize the lamp **36** and by rotating the hosiery supporting form **58** and the carrier **20** about the horizontal axis thereof flaws in the article of hosiery can be readily detected. Complete rotation of the form **58** and the carrier **20** is prevented, however, by reason of the engagement of the stop **28** with the stop member **32** so that danger of twisting and injuring the conductors in the cable **38** will be eliminated. At the same time, the form **58** may be rotated about the horizontal axis a distance sufficient to give complete inspection of the article of hosiery mounted thereon. By comparing the end of the article of hosiery with the scale or graduations **64**, it is obvious that the length of the leg portion thereof may be readily determined. Upon completion of the inspection of the article of hosiery the same is withdrawn from the hosiery supporting form **58** and another article of hosiery may be placed on the form for inspection.

While in the foregoing there has been shown

and described the preferred embodiment of this invention, it is to be understood that minor changes in the details of construction, combination and arrangement of parts may be resorted to without departing from the spirit and scope of the invention as claimed.

What is claimed is—

1. In a hosiery inspection device of the type having a pedestal and a carrier mounted thereon to rotate about a horizontal axis, means for supporting a hosiery item on said carrier comprising a hosiery form having a contour corresponding substantially to a leg and foot, said form being mounted on said carrier for rotation therewith about the longitudinal axis of the leg portion of said form, and a longitudinal row of graduation marks carried by the leg portion of the form for cooperation with the foot portion of the form in determining the length of hosiery mounted on the form during the inspection of said hosiery.

2. In a hosiery inspection device of the type having a pedestal and a carrier mounted thereon to rotate about a horizontal axis, means for supporting a hosiery item on said carrier comprising a hollow translucent hosiery form having a contour corresponding substantially to a leg and foot, said form being mounted on the carrier for rotation therewith about the longitudinal axis of the leg portion of said form, means carried by the carrier and extending into the hosiery form for illuminating said form, and a longitudinal row of graduation marks carried by the leg portion of the form for cooperation with the foot portion of said form in determining the length of hosiery mounted on the form during the inspection thereof.

3. In a hosiery inspection device of the type having a pedestal and a carrier mounted thereon to rotate about a horizontal axis, means for supporting a hosiery item on said carrier comprising a hollow translucent hosiery form having a contour corresponding substantially to a leg and foot, said form being demountably mounted on the carrier for rotation therewith about the longitudinal axis of the leg portion of said form, means carried by the carrier and extending into the hosiery form for illuminating said form, a longitudinal row of graduation marks carried by the leg portion of the form for cooperation with the foot portion of said form in determining the length of hosiery mounted on the form during the inspection thereof, and stops carried by the pedestal and by the carrier for limiting the rotation of the hosiery form about the longitudinal axis of the leg portion thereof.

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