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U. S. DEPARTMENT OF COMMERCE
NATIONAL BUREAU OF STANDARDS
November 10, 1939

Letter
Circular
LC-572

DEVICE FOR TESTING SNAG RESISTANCE OF STOCKINGS

A device for testing the resistance of stockings to snagging has been developed at the National Bureau of Standards by E. Max Schenke and Howard E. Shearer, research associates for the National Association of Hosiery Manufacturers. The device is described briefly and its use explained in this Letter Circular. A Public Service Patent for the device, which will make it available to all without payment of royalties, has been applied for. Further information will be furnished just as soon as the machine is commercially available.

The device consists of a flat metal form of standard dimensions (see note 1) on which the stocking is mounted with the seam in a groove along one edge. The center of the form is cut out and holds a binders board insert covered with a fresh sheet of paper for each test (see note 2). A clamp attached to the welt of the stocking is arranged to hold it taut on the form with a tension of 1 pound. The snagging mechanism is essentially a point that is lowered by means of a micrometer through a hollow supporting disk to definite known distances below the base of the disk (see note 3). This mechanism rests upon the stocking and can be moved over it with the aid of a sliding carriage. The carriage permits the snagging mechanism to be moved lengthwise of the stocking over the area backed with the paper and binders board and to be shifted widthwise of the stocking.

The test is carried out with the form on a horizontal surface. The point of the snagging mechanism is adjusted until it is flush with the base of the disk. This is the zero setting. The snagging mechanism is then drawn lengthwise of the stocking for a distance of 12 inches and returned over the same path. If there is no indication of snagging, the point is lowered 0.002 inch and the movement repeated. The lowering of the point in increments of 0.002 inch and movement of it over the stocking are repeated until at least slight snagging occurs. The carriage is then shifted widthwise of the stocking 1/2 inch. The point is lowered 0.002 inch further than at its last setting, and the snagging mechanism is drawn over the stocking and back again as before. If no hole is produced in the stocking, the carriage is shifted to a third position, the point again lowered 0.002 inch, and the snagging cycle repeated. This is continued until a hole is produced in the stocking.

The number and type of snags and holes produced in the mid 10" section of each movement at each setting of the micrometer are recorded. The form with the stocking on it is then turned over and the test is repeated on this side of the stocking. The average of the results obtained for the two sides of a stocking usually gives a clear indication of its resistance to snagging.

The ease of snagging is shown by the number and type of snags produced at each setting of the micrometer. Snags may

be "light snags", where there is a mere dislocation or spreading of the stitch; "snags", where open or wide spread stitches result; "looped snags", where the stitches are pulled and yarn is looped above the surface of the fabric; "holes", where the yarn is actually broken. The depth necessary for the snagging point to penetrate the fabric to produce a hole is an indication of its resistance to destructive snagging, and is designated by the term "snag index". A numerical value can be assigned to the results for each position of the point for convenience in reporting, by calculating from all the snags, the equivalent number of the predominant type on the arbitrary basis of two light snags being the equivalent of one snag, two snags the equivalent of one looped snag, and one hole the equivalent of three looped snags. The predominant type for each position of the point, and the calculated number are given in the report. This information and the snag index seem to give a good indication of comparative snag resistance.

The test clearly differentiates between stockings known to have low and high resistances to snagging in service. It should be helpful to manufacturers in determining and controlling the factors which are of importance in manufacturing stockings as resistant to snagging as possible. The device should be a valuable adjunct in testing laboratories.

Note 1. The dimensions of the form are given on page 10 of National Bureau of Standards Circular C422 "Methods of Testing

Hosiery". This Circular can be obtained from the Superintendent of Documents, Washington, D. C., for 15 cents per copy.

Note 2. 100 percent rag white chart paper over No. 1 quality binders board 0.110 inch thick is recommended.

Note 3. The snagging mechanism is a modified form of the one described on pages 12 and 13 of Circular C422 referred to in note 1.