

[54] DRESSING AID

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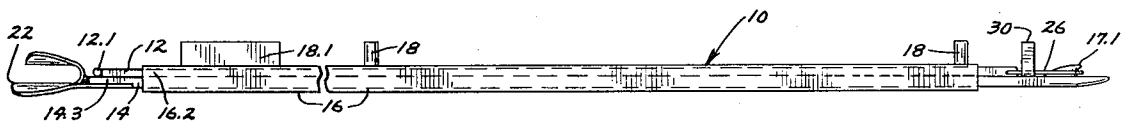
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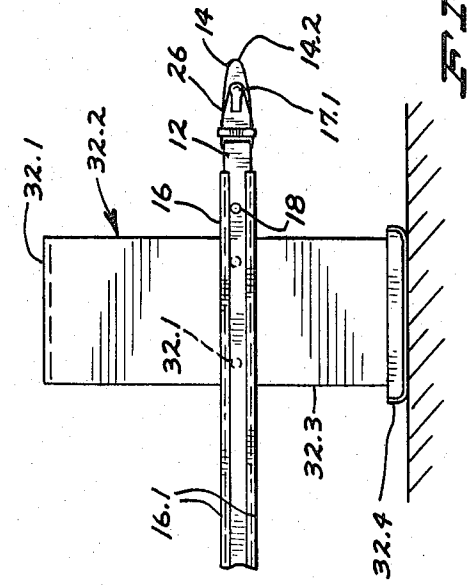
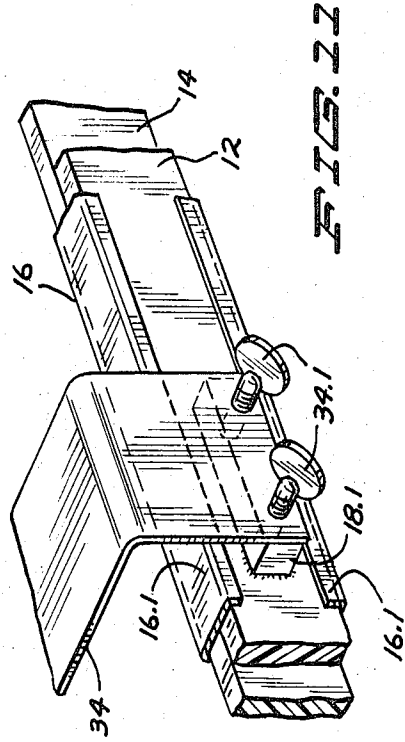
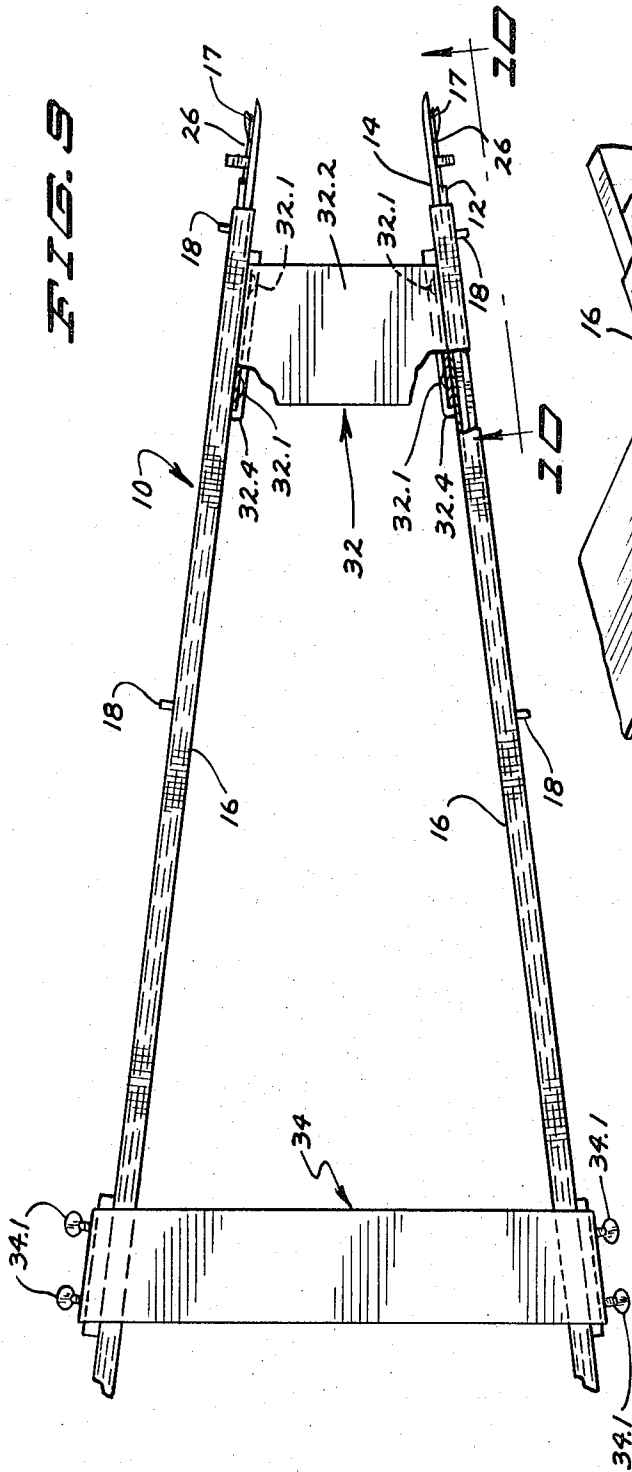
[57] ABSTRACT

A device particularly adapted for aiding handicapped persons in putting on stockings. The device includes a pair of mutually slidably elongated supports having lower ends provided respectively with a lug and a lug-receiving hook, the lug and hook having camming surfaces engageable to swing the hook away from the lug when the hook is moved in a downwardly direction with respect to the lug. The lug may be provided with a head and a neck, the latter forming an upwardly extending ramp between the head and the lug-bearing support, the ramp serving as the camming surface of the lug and also providing a sliding surface permitting the stocking to slide easily off the lug when the hook, is swung away from the lug.

10 Claims, 11 Drawing Figures







**DRESSING AID****BACKGROUND OF THE INVENTION**

Because of various physical problems, handicapped people and particularly the elderly handicapped often are unable to bend their bodies sufficiently to put stockings on their feet. Other items of clothing can ordinarily be put on and taken off with comparative ease, but stockings are particularly aggravating in that a stocking must be somehow held open at foot level while the foot is inserted.

Several mechanical devices have been proposed to hold a stocking open for insertion of one's foot without requiring the person to unduly bend or stoop. Such devices are commonly rather cumbersome and unwieldy, and I am aware of none that have met with any appreciable degree of popularity or commercial success. To appeal to the physically handicapped, such a device should be inexpensive, reliable, easily operated, and should be capable of not only grasping a stocking securely while one's foot is being inserted, but also of thereafter positively releasing the stocking. A device with these characteristics is much to be desired.

**SUMMARY OF THE INVENTION**

The present convention relates to an easily manipulated dressing aid for releasably grasping a stocking so as to enable it to be pulled over one's foot and thereafter to be positively released from the aid. The dressing aid includes a pair of elongated supports having generally opposed and adjacent proximal and distal ends. A transverse lug is provided at the distal end of one of the supports, and a lug-fitting hook having proximally diverging arms is hinged to the distal end of the other support. The lug and hook have camming surfaces positioned to coact and hingedly swing the hook away from the lug as the hook-bearing elongated support is moved distally, that is, normally downwardly with respect to the lug-bearing support. Desirably, the lug includes a head and a neck joining the head to the one support, the neck forming a proximally (that is, generally upwardly) extending ramp between the lug head and the support. The ramp permits a stocking to escape easily over the lug when the hook has been swung away from the lug.

**BRIEF DESCRIPTION OF THE DRAWING**

FIGS. 1 and 2 are partially broken away front and side views, respectively, of a dressing aid of the invention;

FIG. 3 is an enlarged, broken away view of the upper, or proximal, end of a dressing aid of the invention;

FIG. 4 is an enlarged, broken away view of the lower, or distal, end of a dressing aid of the invention with the edge of a stocking shown escaping from the aid;

FIG. 5 is a front view shown partially broken away and in partial cross section, of the lower, or distal, end of a dressing aid of the invention;

FIG. 6 is a broken away side view of the distal end of the dressing aid of FIG. 5, but shown with stocking attached;

FIGS. 7 and 8 are cross-sectional views taken respectively along lines 7—7 and 8—8 of FIG. 6;

FIG. 9 is a front view of a form of a dressing aid of the invention, shown partially broken away and in partial cross section;

FIG. 10 is a side view taken along line 10—10 of FIG. 9; and

FIG. 11 is a perspective view of a proximal portion of the device of FIG. 9.

**DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT**

With reference to the drawing, the dressing aid of the invention is designated generally as 10, and includes a pair of elongated supports 12, 14. The elongated supports may be of rigid plastic and may be on the order of a meter or slightly less in length, two centimeters, in width, and 0.5 centimeters in thickness. The elongated supports 12 and 14 are designed to slide against one another, and are desirably manufactured from a slippery plastic material, such as polyethylene or the like. For ease of description, I will refer to the left hand ends of the dressing aid depicted in FIGS. 1 and 2 as the "proximal," or generally upper, ends, and I will refer to the right hand ends of the aid in FIGS. 1 and 2 as the "distal," or lower, ends. Because the dressing aid of my invention will be often used by persons while seated, it will be understood from the following description that the left hand portions of the device depicted in FIGS. 1 and 2 will generally be somewhat elevated (by being held in the hands) with respect to the right hand portions thereof when the device is being used to pull on a stocking.

The elongated supports 12 and 14 are held together in sliding relationship by an elongated channel 16 which is generally C-shaped in cross section, as can be seen best in FIGS. 7 and 8. The channel 16 may be formed of aluminum or other suitable material. Other ways of maintaining these supports 12 and 14 in slidable relationship to one another will be apparent to the skilled artisan and are within the scope of the present convention. In the embodiment depicted in the drawing, one of the supports 14 is cemented or otherwise rigidly mounted within the C-shaped channel 16. The other support, 12, rides on the adjacent surface of the one support 14, and is retained within the C-shaped channel 16 by the inwardly directed, confronting flanges 16.1 of the channel which, in cross section, form the ends of the arms of the C-shaped configuration of the channel. The longitudinal gap or space between the flanges 16.1 of the channel provide access to the exposed surface of the support 12; outwardly extending knobs 18 may be provided on this exposed surface of the support 12 so that the slidable support can be slid back and forth with ease. It will be understood that handicapped persons having need of the dressing aid of my invention often may also suffer from conditions effecting the hands, rendering manual manipulation of various devices difficult and often painful. As depicted in the drawing, I provided my dressing aid with easily graspable handle holds to facilitate manipulation of my device. The knob which is located adjacent the proximal end of the slidable support 12 may be in the form of an elongated block 18.1 if desired, the particular features of which will be described below in connection with the FIGS. 9 and 11.

As shown best in FIGS. 4 and 5, the one elongated support 14 is provided at its distal end with a lug designated generally as 17, the lug arising from the surface of the one support 14 upon which the other support 12 rides proximally of the lug. The lug includes a head 17.1 and a neck 17.2 joining the head to the support

14. As seen best in FIG. 4, the neck 17.2 at the side and distally of the head is somewhat narrower than the head, and forms a distally-facing, semi-circular groove or channel 17.3. The neck also provides a proximally extending sloping ramp 17.4 joining the head to the support 14, and it is desired that the upper surface 14.1 of the support 14 merge smoothly into the ramp 17.4. For best results, the lug 17, including particularly the ramp 17.4, should be very smooth and non-snagging to stocking material. As will be understood from FIG. 4 without further explanation, a stocking 20 or the like will be able to easily slide over and escape from the lug 17. Specifically, it will be understood that the semi-circular groove 17.3 does not extend proximally of the lug 17; there is thus no proximal groove to catch on to or bind against the stocking 20 when the stocking is removed. The elongated support 14 terminates distally of the lug 17 in a tapered, smooth end 14.2.

At its proximal end 14.3, the elongated support 14 is provided with a shoe horn 22, the distally extending end 22.1 of which is cemented into the recessed end 14.3 of the support 14. The proximally extending shoe horn 22 is provided with the customary concave shape for easing one's heel into a shoe. Arising from the convex surface 22.2 (FIG. 3) of the shoe horn is a generally hook-shaped sock remover 24 having a proximally-facing hook portion 24.1 and a proximally extending end 24.2 having flared edges and an outwardly concave surface configured to bear against one's lower calf and heel for removal of a stocking. A filler such as hardened adhesive 24.3 is employed to smoothen the joint between the stocking remover 24 and the end 14.3 of the elongated support 14, and also to lend rigidity to the stocking remover.

As will be noted from the drawing, the one elongated support 14 is somewhat longer than the other support 12; the latter has at its proximal end a transverse dowel having end projections 12.1 which extend outwardly slightly beyond the side walls 16.2 of the C-shaped channel 16, the projections abutting the ends of the side wall 16.2 and thus serving to limit the distance which the support 12 may move distally of the support 14. In similar fashion, the distance which the support 12 may move proximally with respect to the support 14 is also limited by engagement of the transverse dowel with the hooked section 24.1 of the stocking remover 24.

At its distal end, the elongated support 12 may terminate in a blunt end 12.2; the length of the support 12 being such that when the support has been moved distally as far as possible (the transverse projections 12.1 of the dowel engaging the ends of the side wall 16.2 of the channel), the end 12.2 of the support 12 will yet be spaced a short distance from the ramp 17.4 associated with the knob 17. In this manner, the ramp cannot be scraped or otherwise injured through contact with the end 12.2 of the support 12.

A wire hook 26 may be fashioned from a single length of wire, the ends 26.1 of which (FIG. 5) are journaled into small, aligned holes, 12.3, formed in the edges of the support 12 so that the hook 26 pivots freely about its connection to the support 12. The arms 26.2 of the hook converge distally and terminate in a narrow loop 26.3 which is configured to engage and snugly fit within the semi-circular groove 17.3 formed in the lug 17 when the elongated support 12 is moved proximally with respect to the support 14. With refer-

ence to FIG. 5, it will be understood that as the elongated support 12 is moved distally with respect to the one support 14, is narrow loop 26.3 of the wire hook is moved out of engagement with the lug, and the more widely spaced arms of the hook are eventually able to escape away from the lug as the hook is swung away about its hinged attachment to the support 12.

In the drawing, FIGS. 1, 2, 5 and 6 show the narrow loop 26.3 of the hook in contact with the semi-circular groove of the lug; FIG. 4 shows the hook 26 in a distally removed position permitting the hook to be swung away from the lug.

A connector pin 30.1 joins the divergent arms 26.2 of the wire hook 26 so as to prevent the inwardly directed ends 26.1 of the hook from spreading apart. The connector pin 30.1 also functions as a cam which bears distally against the ramp 17.4 of the lug 17, as shown perhaps best in FIG. 4. As the elongated support 12 is moved distally with respect to the support 14, the connector pin 30.1 moves from its proximal position (as shown in FIG. 6) distally into contact with the ramp 17.4. The divergent shape of the hook arms 26.2 is such that when the connector pin 30.1 begins to be cammed outwardly as shown in FIG. 4, the arms 26.2 of the hook which are adjacent the lug 26 easily clear the lug so that the hook may swing outwardly with ease.

Desirably, the connector pin 30.1 is but one side of a generally rectangular retaining ring 30 which is best shown in FIG. 7. The outwardly extending position of the retaining ring 30 functions as a convenient handle for grasping the hook and swinging the same away from and towards the lugs 17.

The dressing aid unit of the invention as depicted in FIGS. 1 and 2 is desirably used in pairs, one dressing aid unit being employed on either side of the stocking. Two such units are depicted in FIG. 9, the dressing aid units being oriented with respect to one another so that the hooks 26 swing away from each other when the hooks are released from the lugs 17. Adjacent their distal ends, the two dressing aid units are joined by a generally U-shaped bracket 32, the bracket being attached to confronting surfaces of the C-shaped channel by means of recessed screws 32.1. The upper surface 32.2 is spaced above the mutual plane of the dressing aid units a distance of about 14 cm., and the downwardly depending legs 32.3 of the bracket extend in the neighborhood of 13-14 cm. below the mutual plane of the dressing aids and terminate in ground-gripping feet 32.4, which may be of rubber or other nonskid material. The configuration of the bracket 32 is hence that of an inverted U; and the bracket separates the distal ends of the dressing aids by a distance of about 11-12 cm. The height and width of the inverted, U-shaped channel provided by the bracket 32 is such as to comfortably permit one's foot to pass through the channel between the distal, opposed ends of the dressing aids. It may be desirable in some instances to make the bracket 32 out of somewhat flexible material so that the configurations between the ends of the dressing aids may be changed to some extent.

A second bracket 34 is provided adjacent the proximal ends of the dressing aids in FIGS. 9 and 11, the latter bracket being generally U-shaped in cross section and attached by means of thumb screws 34.1 to the block-shaped knobs 18.1 which were previously described with reference to FIGS. 1 and 2.

Movement of the proximal bracket 34 towards the distal bracket 32 carries the elongated supports 12 in the distal direction, causing the hooks 26 to disengage and swing away from the lugs 17. It will be understood that the bracket 34 may, if desired, be attached to the confronting surfaces of the C-shaped channels 16, in the same manner as bracket 32, the latter assembly requiring the sliding elongated supports 12 of each dressing aid unit to be independently manipulated by hand, as by grasping of the block-like knobs 18.1.

As thus described, the dressing aid of the invention may be employed as a single unit (FIGS. 1 and 2) or as a dual unit (FIG. 9-11). The brackets may easily be attached to or detached from the dressing aid units so that easy conversion between single units and dual units is facilitated.

To use my invention in pulling a stocking over one's foot, the stocking is first attached to the dressing aid by placing the cuff of the stocking over the lug 17 and then clamping the stocking in place by swinging the hook 26 down onto the surface 14.1 and then moving the hook proximally so that the loop 26.3 moves within the semi-circular groove 17.3 in the lug, clamping the stocking material between the hook and lug as shown in FIG. 6. This operation may be done conveniently in one's lap, and requires no bending or other particular contortion. A single dressing aid unit may be thus connected to either side of the stocking, or the dual unit depicted in FIGS. 9-11 may be employed. The dressing aid units are then grasped at their proximal ends and the stocking is lowered to foot level; the secure attachment between the distal ends of the dressing aid units and the stocking permits considerable force to be used in pulling the stocking up around the foot. When the stocking is in place, the sliding longitudinal support 12 is moved distally, or downwardly, the operator grasping the block-shaped knobs 18.1, or the bracket 34 in the case of the dual-mounted units, to facilitate relative sliding movement between the sliding longitudinal supports 12 and 14. Distal movement of the support 12 not only frees the wire hook 26 from the lug 17, but also causes the wire hook to be cammed upwardly as shown in FIG. 4. By pulling the dressing aid units away from the stocking, the stocking material is caused to slip smoothly off the distal end of the dressing aid unit, and the smooth ramp at the proximal side of the lug 17 prevents any hang up, or snagging, of the stocking by the lug as the stocking escapes from the dressing aid. When knee- or thigh-length stockings are donned, the wearer may find it convenient to operate the slidable longitudinal supports 12 by grasping those knobs 18 which are near the middle of the length of the dressing aid units, or which are nearer the distal ends thereof.

With respect to the dual aid shown in FIGS. 9-11, it will be understood that the forward or distal end of the aid may be placed upon the floor as shown in FIG. 10, the proximal bracket 34 riding over the user's thigh, and user's foot extending through the U-shaped bracket 32 and between the distal ends of the dressing aid units. All of the inner surfaces of the dual dressing aid are smoothed so as to avoid abrasion of the skin when the dressing aid is used. The heads of the screws 32.1, for example, will be recessed. The brackets 32 and 34 may be fabricated from aluminum sheeting and are of sufficient width and thickness to hold the associated dressing aid units in proper orientation with respect to one another so that their distal ends may prop-

erly grasp opposed sides of a stocking in the manner described above; yet the brackets preferably have some flexibility to permit, for example, the distal ends of the dressing aid unit to be urged apart an additional small distance when necessary to accommodate various foot and leg sizes. As an example, the distal bracket 32 may be approximately 4 inches in width, whereas the proximal bracket 34 may be 3 inches in width. To accommodate the user's thigh, the proximal ends of the dressing aid units may be separated by at least twice the distance separating the distal ends, and preferably by a distance of 40-45 centimeters. If desired, the proximal bracket 34 may be omitted, the distal bracket 32 being made of sufficient strength to properly orient the dressing units with respect to one another at their distal ends.

While I have described a preferred embodiment of the present invention, it should be understood that various changes, adaptations, and modifications may be made therein without departing from the spirit of the invention and the scope of the appended claims.

What is claimed is:

1. An easily manipulated dressing aid for releasably grasping a stocking to enable the stocking to be pulled over one's foot, the aid comprising a pair of elongated supports having generally opposed, adjacent proximal and distal ends, a transverse lug at the distal end of one support, and a lug-fitting hook having proximally divergent arms hinged to the distal end of the other support, the lug and hook having coacting camming surfaces positioned to mutually engage and hingedly swing the hook away from the lug as the hook-bearing support is moved distally with respect to the lug-bearing support.
2. The dressing aid of claim 1 wherein the lug comprises a head and a neck joining the head to the distal end of the one support, the neck forming a proximally extending ramp between the lug head and the one support and also forming a semi-circular, distally facing groove in which the hook seats when the hook-bearing support is moved proximally with respect to the lug-bearing support, the outer surface of the ramp forming the camming surface of the lug.
3. The dressing aid of claim 2 including a connector pin joining proximal ends of the hook arms adjacent their attachment to the distal end of the one support, the pin having a camming surface engagable with the camming surface of the lug ramp upon distal movement of the hook-bearing support with respect to the lug-bearing support.
4. The dressing aid of claim 3 wherein the connector pin includes an outwardly extending, easily-graspable handle facilitating movement of the hinged hook away from and towards the lug.
5. An easily manipulated dressing aid for releasably grasping a stocking to enable the stocking to be readily pulled over one's foot, the dressing aid comprising a pair of coacting, longitudinally slidable, elongated supports having distal and proximal ends, a lug extending transversely of the distal end of one support and having a head and a neck joining the head to the one support, the neck forming a proximally extending ramp from the head to the one support and also forming a distally-facing semi-circular channel between the head and one support, a lug-engaging hook hingably attached to the distal end of the other support, the hook having distally converging arms forming a terminal loop configured to fit snugly in the semi-circular channel of the lug and movable distally to disengage and swing away from the

lug, the hook having a camming surface positioned to engage and bear against the ramp of the lug as the hook is moved distally of the lug, the ramp urging the hook to swing outwardly from the lug.

6. The dressing aid of claim 5 including an elongated mounting channel of generally C-shaped cross section and longitudinally partially enclosing the pair of supports, one support being rigidly attached within the channel and the other support being slidably retained within the channel for movement longitudinally of the one support, the movable support being accessible along its length through a longitudinal gap between flanges forming inwardly directed arms of the C-shaped channel.

7. The dressing aid of claim 6 including a proximally extending shoe horn mounted to the proximal end of the one support, and a stocking removal hook, the latter having a centrally curved, proximally-opening hook portion having one end arising from the convex surface of the shoe horn and having a flaring, proximally extending, outwardly concave second end terminating short of the shoe horn.

8. The dressing aid of claim 6 including a second, substantially identical pair of channel-mounted, coacting supports with lugs and hooks, and a U-shaped bracket spacedly joining the C-shaped channels adjacent their distal ends with longitudinal gaps of the channels directed outwardly from each other and the U-shaped bracket providing room for one's foot to extend between distal ends of the support pairs, the bracket including floor-encountering legs supporting distal ends of the support pairs above the floor surface to facilitate use of the dressing aid.

9. The dressing aid of claim 8 including a second bracket proximal of the U-shaped bracket and spacedly connecting proximal ends of the support pairs, the latter spacing being at least twice that of the distal ends

of the support pairs.

10. An easily manipulated dressing aid for releasably grasping a stocking to enable the stocking to be readily pulled over one's foot, the dressing aid comprising a pair of coacting elongated supports having distal and proximal ends, an elongated mounting channel of generally C-shaped cross section longitudinally partially enclosing the pair of supports, one support being rigidly retained within the channel and the other support being slidably retained within the channel by spaced flanges forming, in cross section, arms of the C-shaped channel, the flanges having a longitudinal gap therebetween, a lug extending transversely of the distal end of the one support and having a head and a neck joining the head to the one support, the neck forming a proximally extending ramp having an outward camming surface from the head to the one support and also forming a distally oriented semi-circular channel between the head and one support, a hook hingably attached to the distal end of the other support, the hook having distally converging arms forming a terminal loop configured to fit snugly in the semi-circular channel of the lug and movable distally thereof to disengage and swing away from the lug, a connector pin joining proximal ends of the hook arms adjacent the hinged attachment thereof to the distal end of the other support, the pin having a camming surface engageable with the lug ramp upon distal movement of the hook-bearing support with respect to the lug-bearing support to cause the hook to swing away from the lug, and the connector pin including an outwardly-extending, easily graspable handle facilitating ready movement of the hinged hook away from and towards the lug, as when the upper portion of a stocking is to be connected between the lug and hook.

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