July 1, 1969 W. MacLAUCHLAN 3,452,907

DEVICE FOR DONNING STOCKINGS WITHOUT KNEE FLEXURE

Original Filed March 24, 1964 Sheet 1 of 2

Fig. 2

Fig. 1.

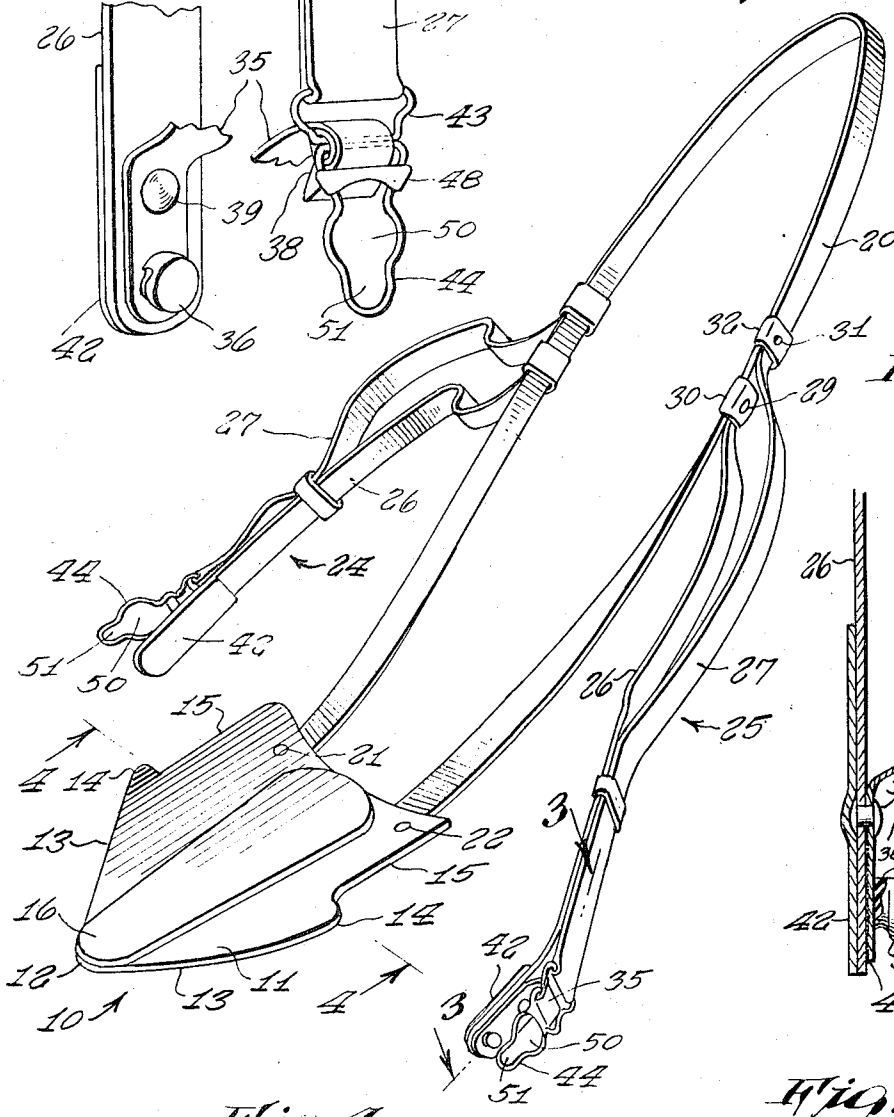

Fig. 3

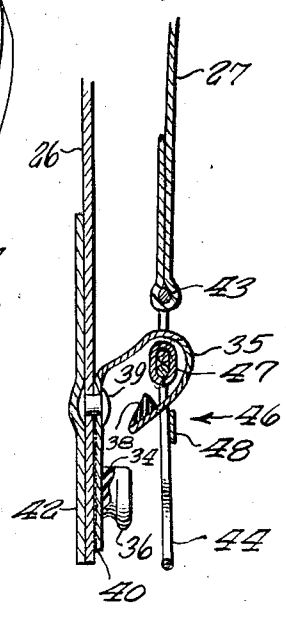

Fig. 4

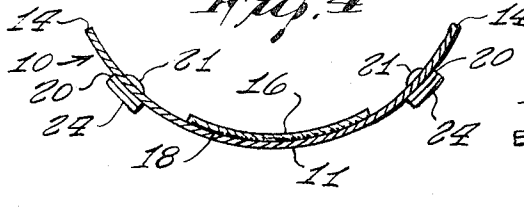

Fig. 5

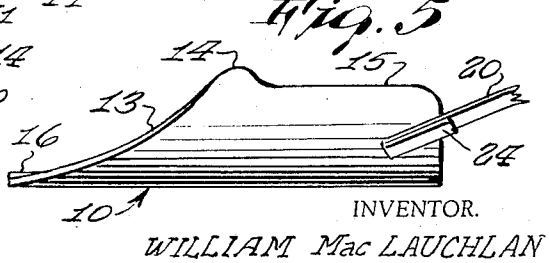

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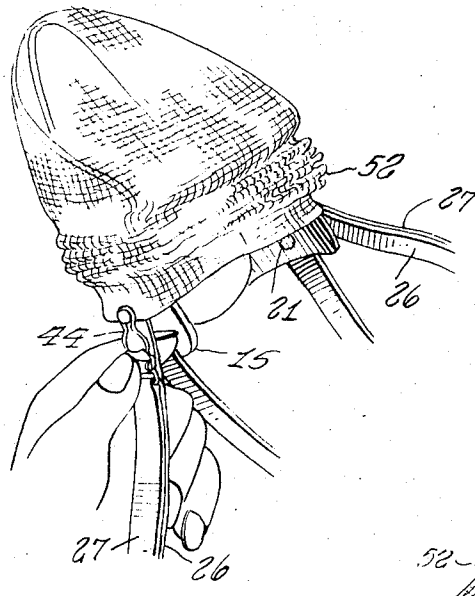
Fig. 6



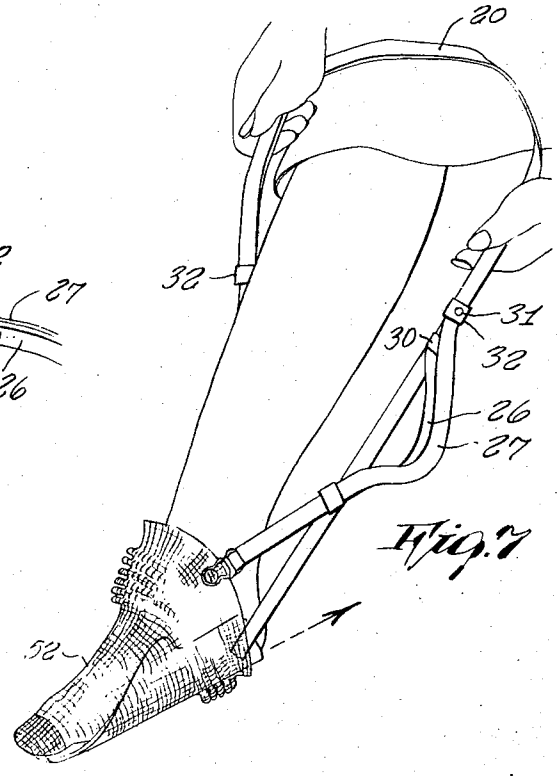
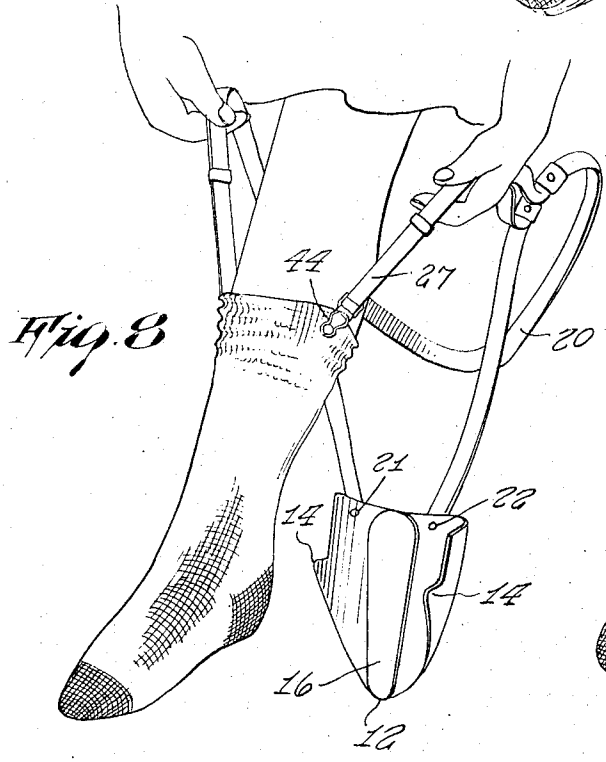


Fig. 7

Fig. 8



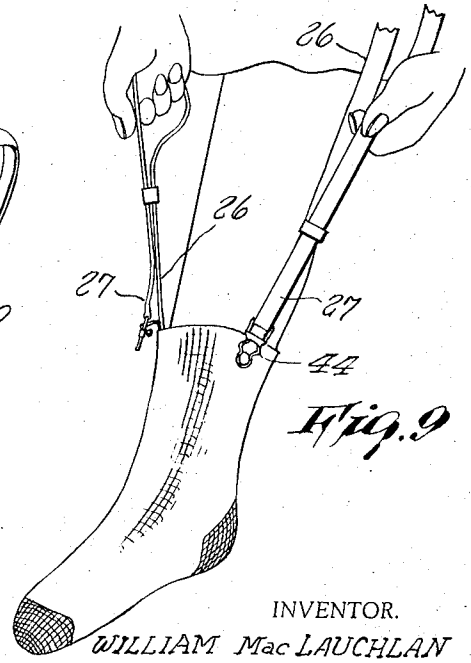


Fig. 9

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DEVICE FOR DONNING STOCKINGS WITHOUT KNEE FLEXURE

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Continuation of application Ser. No. 354,340, Mar. 24, 1964. This application Feb. 13, 1967, Ser. No. 615,847

Int. Cl. A47j *51/06*

U.S. Cl. 223—111

12 Claims

ABSTRACT OF THE DISCLOSURE

A stocking donning device for use by invalids or other persons unable to bend at least one knee or to bend the back. The device includes a foot member over which the foot portion of the stocking is positioned ready to receive the foot of the wearer. A main strap is connected to the foot member so that it can be dropped on the floor and manipulated to insert the wearer's foot into the foot portion of the stocking. Pulling straps are releasably connected to the top of the stocking. After the wearer's foot has been inserted in the foot portion of the stocking, the foot member is withdrawn by pulling on the main strap. Thereafter, the top of the stocking is drawn upwardly over the wearer's leg by pulling on the pulling straps. For use in the case of a sock or short stocking the top of which cannot be reached by the wearer, releasing straps are provided whereby the top of the stocking may be released after it has been properly positioned by pulling on the pulling straps.

This application is a continuation of application Ser. No. 354,340, Mar. 24, 1964.

The present invention relates to a device for donning stockings which permits an invalid or other disabled person to put on a sock or stocking without bending the knee or the back.

The device is both light in weight and portable and may conveniently be packed in a suitcase along with various articles of apparel for travel. The invention comprises a foot member over which the stocking is initially placed in a distended condition. Both ends of a main strap member are connected to the foot member for pulling or holding the foot member in order to insert the foot within the distended stocking. Two duplex pulling straps extend from spaced points on the main strap member to opposite points at the top of the stocking. The pulling straps are connected to the top of the stocking by fasteners which may be released by pulling on one of the duplex straps whereas the fasteners remain operative when pulling on the other duplex straps. This permits releasing the pulling straps from the top of a sock which extends only a short distance above the ankle. The foot member is made of pliable resilient material which avoids discomfort when the user's foot is sore or tender.

Various additional features, objects and advantages of the invention will appear from reading the following specification with reference to the accompanying drawing forming a part hereof.

Referring to the drawing:

FIGURE 1 is a perspective view of an embodiment of the invention.

FIGURE 2 is a fragmentary exploded perspective view of one of the fastener members shown on an enlarged scale.

FIGURE 3 is a fragmentary view in longitudinal section showing the free end of one of the duplex pulling straps with the fastener in its open position, the view being taken along the line 3—3 of FIG. 1.

FIGURE 4 is a transverse sectional view taken along the line 4—4 of FIG. 1.

FIGURE 5 is a fragmentary view on a reduced scale showing the foot member in side elevation.

FIGURE 6 is a fragmentary perspective view showing the foot member with a distended stocking positioned thereon ready for initial insertion of the foot therein.

FIGURE 7 shows the foot initially inserted in the distended stocking.

FIGURE 8 shows the foot member withdrawn from the stocking with the pulling members secured to the top of the stocking.

FIGURE 9 shows a sock in final position on the foot of a wearer, one of the fasteners having been opened.

Referring to FIG. 1, the device comprises an elongated foot member designated generally as **10**. The foot member **10** comprises a body portion **11** formed of resilient pliable sheet material such as leather, artificial leather, plastic, woven fabric, laminated paper or other suitable material suitably covered, if necessary. The body portion **11** of the foot member diverges rearwardly from its toe portion **12** along inclined sides **13** to a pair of rounded laterally projecting portions **14** and extends from the projections **14** rearwardly with straight parallel sides **15**. The foot member **10** also comprises an insole member **16** which is suitably connected to body portion **11** as by a layer of adhesive **18** (FIG. 4).

One end of an elongated pliable main strap **20** is connected to the rear of the foot member **10** by a rivet **21** and the other end of the main strap **20** is connected to the foot member **10** by a rivet **22**, the ends of the main strap member **20** being connected generally symmetrically to laterally spaced points at opposite sides of the longitudinal axis of the foot member **10**. The smooth heads of the rivets **21** and **22** are exposed on the upper surface of the foot member **10**. The outer ends of the rivets **21** and **22** are riveted over and are covered by protective strips **24** formed of suitable material adhesively secured to the outer end surfaces of the main strap **20**. The ends of the main strap **20** are connected to laterally symmetrically spaced portions of the foot member **10**.

The device further comprises right and left pulling strap units designated generally as **24** and **25**, respectively. Each pulling strap unit comprises an inner strap **26** and an outer strap **27**. The upper end of the inner strap **26** is connected to the main strap **20** by a rivet **29** which extends through a loop member **30** in addition to the straps **20** and **26**. The head of the rivet **29** is exposed and its inner end which is riveted over is covered at the inner side of main strap **20** by the loop member **30** which extends completely around the superposed main strap **20** and inner strap **26**. The outer strap **27** is similarly connected to the main strap **20** by a rivet **31** and a loop member **32** located above the rivet **29**. The main strap **20** and the inner and outer straps **26** and **27** are formed of pliable and substantially non-extensible material such as leather, fabric or plastic of suitable flexibility and tensile strength.

At its lower end, the inner strap **26** carries a button member **34** formed of resilient material molded or otherwise suitably secured to one end portion of a fabric tape **35**. The bottom **34** has an enlarged head **36** for holding the upper end of a stocking iin cooperation with a loop member as hereinafter described. A stop projection **38** is molded on or otherwise suitably secured to the other end of the fabric tape **35**. Intermediate its ends, the fabric strap **35** is secured to the inner strap **26** by a rivet **39**. Below the rivet **39**, the fabric tape **35** is secured to the inner strap **26** by a layer of adhesive. The riveted over end of the rivet **39** is covered by a strip of flexible material **42** adhered or otherwise suitably secured the inner surface of the strap **26**.

The lower end of the outer straps **27** is passed through a transverse wire loop member **43** and doubled back providing two thicknesses above the transverse loop mem-

ber 43 which are adhered or otherwise suitably secured together to form a permanent connection with the upper reach of the transverse loop member 43.

The transverse loop member 43 is connected to a depending wire loop member 44 which cooperates with the button 34 to grip the upper end portion of a stocking adjacent to its edge. The depending loop member 44 is connected to the transverse loop member 43 by a bent metal clip designated generally as 46. The clip 46 is bent to form a transversely extending tubular portion which passes freely revolubly around the lower reach of the transverse loop 43 and which also passes around the upper transversely extending reach of the depending loop member 44. The clip 46 is shaped to provide an integrally formed transversely extending bar portion 48 the end portions of which are bent around the upper generally vertically extending portions of the depending loop member 44. The fabric tape 35 passes freely through the transverse loop member 43 and through the space between the tubular and bar portions 47 and 48, respectively, of the clip 46. The free end of the fabric tape 35 is prevented by the stop projection 38 from passing outwardly through the space between the tubular portion 47 and bar portion 48 of the clip 46.

The depending loop member 44 is shaped to provide a wide aperture 50 and a narrow aperture 51, the narrow aperture 51 being closed at its lower end. The enlarged head 36 of button 34 may enter or be withdrawn through the larger aperture 50 but will not pass through the narrow aperture 51. Relative movement between the button 34 and depending loop member 44 to bring the shank of the button 34 into the narrow aperture 51 will lock the fabric of a stocking 52 (FIGS. 6–9) which passes over the button 34. Reverse relative movement will unlock the fabric by permitting passage of the enlarged head 36 through aperture 50.

In operation, foot member 10 is held in the user's hand and the stocking 52 is arranged over the foot member 10 as shown in FIG. 6, the toe portion being distended over the inclined sides 13. The upper portion of the stocking 52 is bunched over the parallel sides 15 of foot member 10 and is prevented from slipping forwardly over the inclined sides 13 by the projections 14. The resiliency of the foot member 10 retains the stocking positioned as shown in FIG. 6. The top of the stocking is then secured to the two pulling straps 24 and 25 by means of the buttons 34 and depending loop members 44. All of these operations may be performed while seated and without stooping or bending the knee.

While retaining a grasp on the main strap 20, the foot member 10 is dropped to the floor and positioned so that the foot may enter within the stocking as shown in FIG. 7. This may be done by pulling the foot member 10 under the foot or by holding the foot member 10 stationary while the foot is pushed forwardly into the stocking 52 or by a combination of both movements. Because the two ends of the main strap 20 are connected to laterally spaced points on the foot member 10, the foot member 10 may be turned about a vertical axis to facilitate entry of the user's foot into the stocking 52.

After the foot has entered the toe of the stocking 52, the foot member 10 is withdrawn from the stocking 52 by pulling rearwardly on the main strap 20. This leaves the toe portion of the stocking 52 positioned over the user's foot and the stocking is then pulled upwardly using the pulling straps 24 and 25. The pulling forces should be evenly distributed between the inner and outer straps 26 and 27 and the greater pull, if any, should be applied to the outer strap 27 to pull on the depending loop member 44 and thereby prevent upward movement of the button 34 relative to the depending loop member 44.

If the stocking 52 is a full length stocking, after the top of the stocking has been raised to a sufficient height, the pulling straps 24 and 25 may be disengaged manually by moving the button 34 from the narrow aperture 51 into the wide aperture 50 of the depending loop member 44. If the stocking is short or if a sock is involved, after the sock has been raised to its final position, a further pull is exerted on the inner strap 26 alone while tension on the outer strap 27 is released. This pulls the button 34 upwardly out of the narrow aperture 51 into the wide aperture 50 and continued pulling on the inner strap 26 will disengage the button 34 from the depending loop member 44, thereby completely freeing the pulling strap 26 or 27, as the case may be, from the top of the stocking 52.

What is claimed is:

1. A stocking donning device, comprising: an elongated foot member; an elongated pliable substantially non-extensible main strap member having its ends permanently connected, during utilization of said device, to laterally spaced portions of said foot member generally symmetrically at opposite sides of the longitudinal axis thereof; two pulling straps each having one end portion connected to a portion of said main strap member intermediate the ends thereof, said one end portions of said pulling straps being symmetrically connected to said main strap member at opposite sides of the middle thereof; and two disengageable stocking gripping means each connected to the other end portion of one of said pulling straps.

2. A stocking donning device according to claim 1, wherein each of said gripping means comprises a releasing portion, pulling on said releasing portion being effective to release said stocking from said gripping means, said device further comprising a pair of releasing straps each separate from and substantially co-extensive with one of said pulling straps, each releasing strap having one end portion connected to said main strap member adjacent to said one end portion of its associated pulling strap, the other end portion of each releasing strap being connected to said releasing portion of one of said gripping means for effecting releasing operation thereof.

3. A stocking donning device comprising: an elongated foot member formed of pliable resiilent material which permits flexure of said foot member to bring its sides toward each other for holding a stocking distended thereover whereby the user's foot may be freely inserted therein; a main strap member having its ends connected to laterally spaced portions of said foot member generally symmetrically at opposite sides of the longitudinal axis thereof; two pulling straps having end portions connected to longitudinally spaced portions of said main strap member intermediate the ends thereof at opposite sides of the middle thereof; and disengageable stocking gripping means connected to the other end portions of said pulling straps.

4. A stocking donning device according to claim 3, wherein the front portion of said foot member has rearwardly divergent inclined sides and the rear portion of said foot member has straight parallel sides, said foot member having laterally extending projections formed intermediate said inclined and parallel sides.

5. A stocking donning device, comprising: an elongated foot member; an elongated main strap member having its ends connected to laterally spaced portions of said foot member generally symmetrically at opposite sides of the longitudinal axis thereof; a pair of pulling strap units having end portions connected to longitudinally spaced portions of said main strap member intermediate the ends thereof at opposite sides of the middle thereof; and a pair of disengageable stocking gripping means each connected the free end portions of said pair of units, each of said gripping means comprising two portions movable relatively to each other for selectively engaging or disengaging said stocking, each unit comprising two separate straps each connected to said two portions of said gripping means, pulling on one of said separate straps operating to disengage the gripping device to which it is connected.

6. A stocking donning device according to claim 5,

wherein said foot member is formed of pliable resilient material which permits flexure of said foot member to bring its sides toward each other for holding a stocking distended thereover whereby the user's foot may be freely inserted therein.

7. A stocking donning device according to claim 6, wherein the front portion of said foot member has rearwardly divergent inclined sides and the rear portion of said foot member has straight parallel sides, said foot member having laterally extending projections formed intermediate said inclined and parallel sides.

8. A stocking donning device, comprising: an elongated foot member; an elongated main strap member having its ends connected to laterally spaced portions of said foot member generally symmetrically at opposite sides of the longitudinal axis thereof; a pair of inner pulling straps having end portions connected to longitudinally spaced portions of said main strap member intermediate the ends thereof at opposite sides of the middle of said main strap member; a pair of outer pulling straps having end portions connected to said main strap in proximity to said end portions of said inner straps; a pair of stocking gripping means, each of said gripping means comprising two portions movable relative to each other for selectively engaging or disengaging said stocking, one of said two portions being connected to a free end portion of one of said inner pulling straps and the other of said two portions being connected to a free end portion of one of said outer pulling straps, each gripping device being disengageable by pulling separately on a particular one of said pulling straps to move the one of said portions connected thereto relative to the other.

9. A stocking donning device according to claim 8,

wherein said one of said two portions of each gripping means includes a depending loop member having wide and narrow apertures and in which the other of said two portions includes a button having an enlarged head which passes freely through said wide aperture and is retained by said narrow aperture, said particular one of said pulling straps being connected to move said button from said narrow aperture to said wide aperture by pulling on said particular pulling strap.

10. A stocking donning device according to claim 9, further comprising a flexible tension member interconnecting said button and said loop member for limiting separation therebetween.

11. A stocking donning device according to claim 9, wherein said foot member is formed of pliable resilient material which permits flexure of said foot member to bring its sides toward each other for holding a stocking distended thereover whereby the user's foot may be freely inserted therein.

12. A stocking donning device according to claim 8, wherein said foot member is formed of pliable resilient material which permits flexure of said foot member to bring its sides toward each other for holding a stocking distended thereover whereby the user's foot may be freely inserted therein.

References Cited

UNITED STATES PATENTS

2,796,207	6/1957	Young	223—111
2,828,057	3/1958	MacLauchlan	223—111

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