Feb. 17, 1942. M. H. HOLMES 2,273,489

STRETCHER FOR ARTICLES OF CLOTHING

Filed May 27, 1940

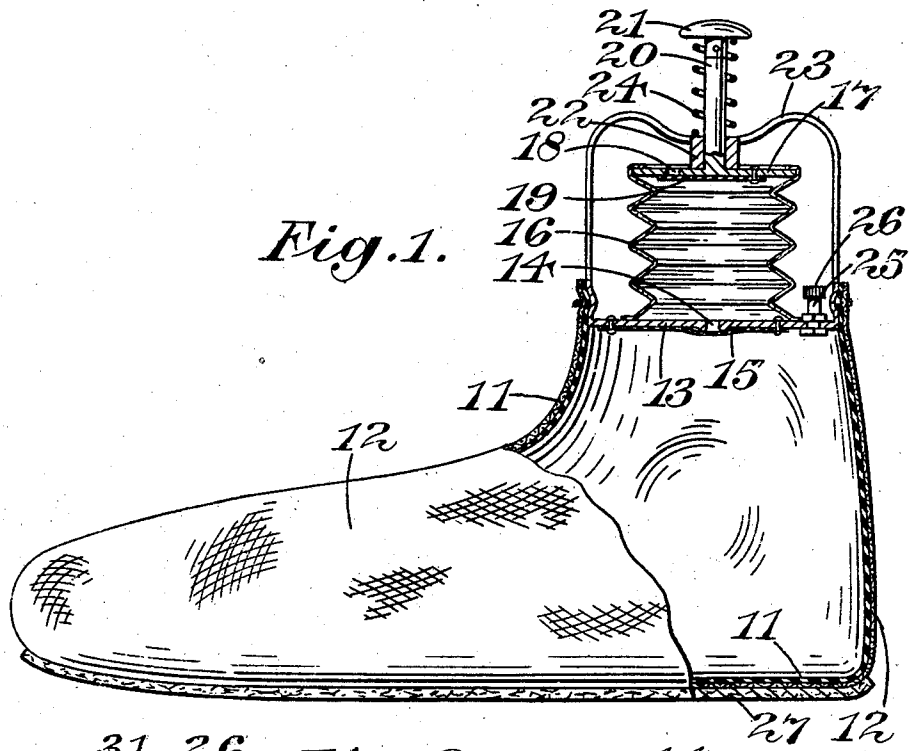


Fig. 1.

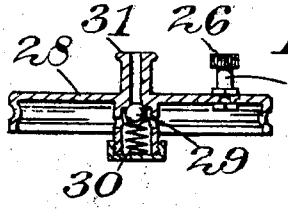


Fig. 2.

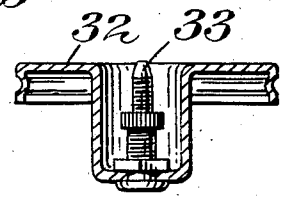


Fig. 3.

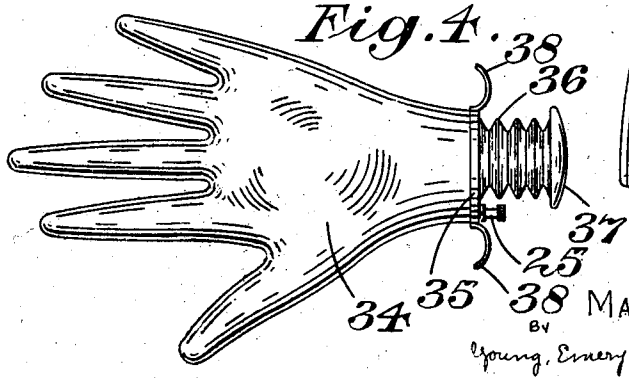


Fig. 4.

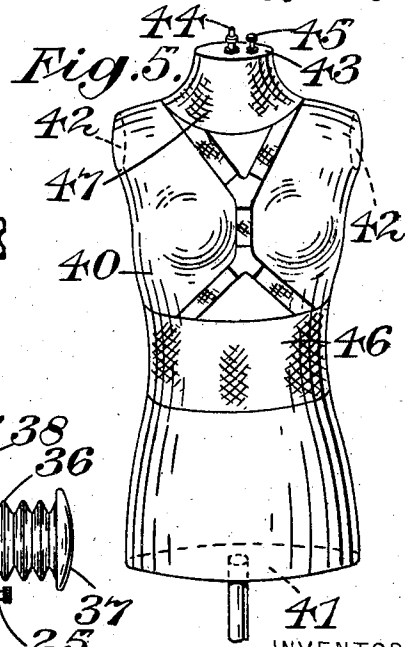


Fig. 5.

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STRETCHER FOR ARTICLES OF CLOTHING

Mary Hanby Holmes, Bexhill-on-Sea, England

Application May 27, 1940, Serial No. 337,529
In Great Britain May 30, 1939

7 Claims. (Cl. 223—67)

This invention comprises improvements in or relating to lasts, trees or stretchers for boots, shoes, gloves or the like. It is an object of the invention to provide a boot tree or a stretcher or form for gloves or other articles of clothing which is easily applied, light and can be stowed compactly when out of use.

According to the present invention such an article is made of inflatable flexible material, such as rubber, and provided with means for inflating and deflating it at will.

The means for inflation may either be a valve through which the article can be inflated by the mouth or by a pump, or some form of pumping device may be provided as a permanent part of the tree or stretcher itself.

The following is a description, by way of example, of various constructions in accordance with the invention, reference being made to the accompanying drawing, in which—

Figure 1 is a side elevation partly in section of a boot tree in accordance with the invention;

Figure 2 is a detail of an alternative means of inflation;

Figure 3 is a similar detail of a further alternative;

Figure 4 shows a glove stretcher, and

Figure 5 is a perspective view of a dressmaker's dummy.

Referring to Figure 1, the tree comprises an inflatable rubber body portion 11 which is covered by stretchable knitted fabric 12. The inflatable rubber body portion is made of a shape which corresponds in material respects with the shape of the interior of a shoe, although owing to the elasticity of the rubber, this conformity with the shoe need not be exact and the size is preferably such as will readily go into the smallest shoe or boot with which the boot tree is intended to be used. At the top just above the ankle portion there is a metallic diaphragm 13 which closes the leg opening and in the centre of the diaphragm is a valve opening 14 which is covered by a strip of rubber 15 on the underside, constituting a valve which opens inwardly.

Over the valve 15 is secured the bellows 16 by the use of which the tree can be inflated. The bellows comprises a cylindrical corrugated body portion, which may be of moulded india-rubber and is closed at the top by a diaphragm 17 provided with a suction valve opening 18 covered on the inside by a flexible rubber strip 19. The diaphragm 17 carries an operating push rod 20 provided with a press knob 21. The push rod 20 slides through a guide 22 in a stirrup 23 which is secured to the diaphragm 13 and rises on either side around the bellows 16. The stirrup 23 provides a convenient grip through which the fingers of the user's hand can be inserted and then by pressure of the palm of the hand on the knob 21 the bellows can be forced downwardly. A spring 24 provides for the return motion. By operating the bellows the tree can readily be inflated after it has been inserted in a boot or shoe. A deflating valve 25 is provided in the side of the diaphragm 13, this valve being closed by a screwed valve element which has a knurled head 26. On unscrewing the knurled head 26 the deflating valve will be opened and permit the tree to be collapsed for storage.

The sole portion of the inflatable body 11 may be covered with a sock 27 of asbestos or other absorbent material which serves the multiple functions of somewhat stiffening the sole of the tree, of protecting the rubber 11 from any nails which may be exposed in the interior of the shoe or boot and of absorbing moisture, thus facilitating the drying of the boot or shoe if wet. Further, the sock 27 may be impregnated if desired with a deodorant or disinfectant.

In use the tree, after being inserted in the boot or shoe is inflated until it fills the boot or shoe and presses out all the creases in the leather from within, thus becoming a very efficient kind of last or tree. It is an advantage of the invention that the last or tree will fit a considerable number of sizes and widths of boot or shoe without adjustment. Moreover when deflated it readily packs into a small space and the weight is less than that of the usual rigid wooden trees, while the supporting pressure inside the boot or shoe when in use is exerted over the whole of the interior, which is not the case with the usual kind of folding stretchers.

Referring to Figure 2, this shows a diaphragm 28 for use as an alternative to the diaphragm 13 of Figure 1. It comprises a ball valve 29 opening inwardly against a spring 30 and a nipple 31 which can be inflated either by fixing a rubber tube on to it from, say a football pump, or where the internal pressure is not required to be considerable it can be inflated by the mouth. As before there is a deflating valve 25 provided.

Figure 3 shows a further alternative diaphragm 32 which can be used in place of the diaphragm 13 and carries an inflating valve 33 of a similar type to that used on bicycles so that it can be inflated by an ordinary bicycle pump. Deflation can be effected by unscrewing this valve.

The invention can be employed for stretching

gloves if desired and Figure 4 shows a glove stretcher consisting of an inflatable rubber body portion **34** which has a diaphragm **35** closing the rest and a bellows **36** which can be operated to inflate it. The bellows carries a curved pressure member **37** for operating by the palm of the hand and the diaphragm **35** has two curved ears **38** which may be gripped by the fingers so that inflation can be easily performed with one hand. The spring for returning the bellows is in this case located inside them. A deflating valve **25** is provided as before.

Figure 5 shows the application of the invention to a lay figure. The figure comprises an inflatable rubber body portion **40** moulded to the shape desired and closed at the bottom by a rigid diaphragm **41**. Other diaphragms **42** are provided at the location of the arms and a diaphragm **43** at the neck. A valve **44** is provided for inflation and a valve **45** for deflation.

The lay figure can be made by different degrees of inflation to serve for different sizes. It will be understood that parts of the body **40** which are required to stretch less than others when inflation occurs can be made of thicker material or reinforced by fabric or otherwise, as indicated at **46**, **47**.

I claim:

1. A form for supporting articles of clothing comprising in combination a hollow or flexible form-member pre-shaped to yield on inflation approximately the shape of the interior of the article to be supported, a diaphragm extending across one end of the form-member, a non-return inlet valve in said diaphragm, a pumping device permanently mounted on the diaphragm to inflate said form-member through said valve, and means on the diaphragm affording a grip whereby the pumping device can be readily operated.

2. A boot tree comprising in combination an inflatable rubber tree portion adapted to fit the interior of a boot or shoe, when inflated, a diaphragm closing the same across the ankle portion, and a bellows secured to the diaphragm and provided with a spring return so that the bellows can be reciprocated by repeated application of pressure thereto.

3. A boot tree comprising in combination an inflatable rubber tree portion adapted to fit the interior of a boot or shoe, when inflated, a diaphragm closing the same across the ankle portion, a bellows secured to the diaphragm, a stirrup member is provided on the diaphragm to guide the free end of the bellows and an operating plunger is provided on the bellows which slides through the stirrup member, so that the tree can be inflated by one hand by grasping the stirrup member and plunger.

4. A form for articles of clothing as claimed in claim 1 provided with a relief valve to facilitate deflation, said valve being capable of being opened by movement of an appropriate valve member when desired.

5. A boot tree as claimed in claim 1 provided with a relief valve to facilitate deflation, said valve being capable of being opened by movement of an appropriate valve member when desired.

6. A glove stretcher having the features set forth in claim 1.

7. A form for articles of clothing as claimed in claim 1 wherein the form-member is of india-rubber covered with knitted fabric.

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