Dec. 8, 1936. H. A. JOHNSTON 2,063,683

SLEEVE STRETCHER

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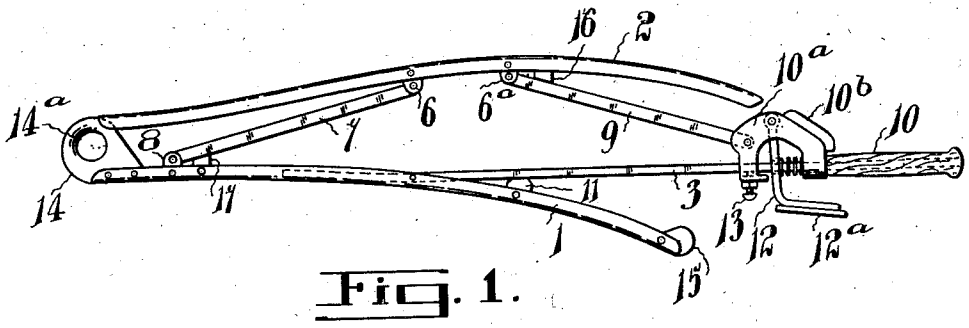

Fig. 1.

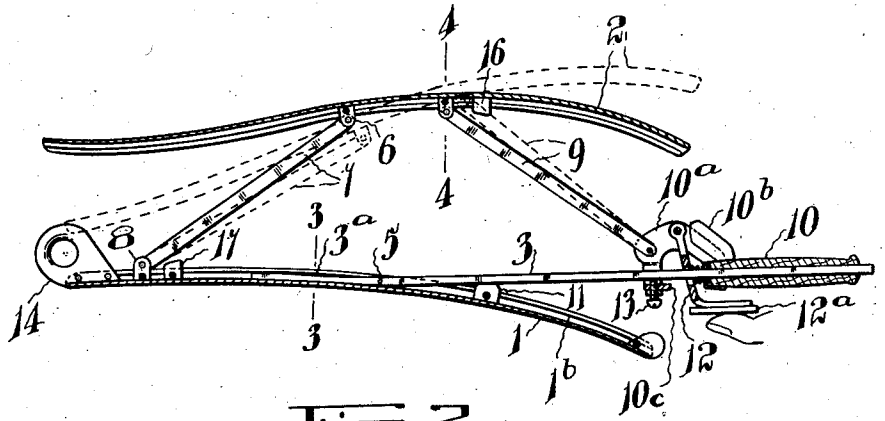

Fig. 2.

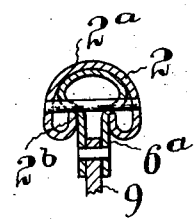

Fig. 4.

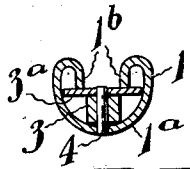

Fig. 3.

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SLEEVE STRETCHER

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14 Claims. (Cl. 223—63)

This invention relates to devices for stretching and re-shaping sleeves of garments particularly while they are being steamed or after they have been washed, cleaned or dyed and during the drying thereof, and my object is to device an expansible device which may be easily inserted in the sleeve of a garment, which may be readily expanded to stretch the sleeve, and which will automatically adjust itself to the general contours of sleeves of various shapes and sizes and will apply resilient pressure thereto.

I attain my object by providing inner and outer sleeve bars, each of which is concavo-convex in form longitudinally thereof. To the inner bar is secured a rod of springy material which extends intermediate of the bars and has a slide mounted thereon. Midway between the ends of the outer bar are pivoted the extremities of two links, the pivot points being spaced apart and the links being converged towards these points. The other end of one link is pivoted adjacent the end of the inner bar remote from the rod and the other end of the other link is pivotally connected with the slide. The latter carries a spring actuated cramping device for cramping the rod to releasably lock the slide from movement which would result in the bars being drawn towards one another. The said device is formed on a trigger readily accessible to the operator.

The constructions are hereinafter more fully described and are illustrated in the accompanying drawing in which

Fig. 1 is a side elevation of my sleeve stretcher in its contracted position;

Fig. 2 a longitudinal section of the same in its expanded position, the outer bar being shown in dotted lines after it has been rocked on its pivotal connections;

Fig. 3 a cross-section, on an enlarged scale, on the line 3—3 in Fig. 2; and

Fig. 4 a cross-section on an enlarged scale, on the line 4—4 in Fig. 2.

In the drawing like numerals of reference indicate corresponding parts in the different figures.

The sleeve stretcher comprises an inner sleeve bar 1 and an outer sleeve bar 2, the said bars being concavo-convex in form longitudinally with the convex side of the inner bar facing the concave side of the outer bar. Each of these bars is preferably formed of a strip of aluminum which is rolled, as shown in Figs. 3 and 4, to produce channel shaped bars having curved surfaces 1^a, 2^a for contact with the sleeve of the garment to be stretched. The edges 1^b, 2^b of each strip are also turned inwardly to prevent their contacting with the sleeve and to stiffen the bars.

A rod 3, formed of springy material, is secured at one end by rivets 4 and 5 to the inner bar 1 intermediate its ends. The secured end of the rod 3 is received in the channel of the bar 1 and the rivet 4 passes through a washer 3^a which engages the upper surface of the rod 2 and the under surfaces of the turned-in edges 1^b whereby the latter are utilized to take any upward stress of the rod. The latter passes out of the channel and extends rearwardly intermediate the bars 1 and 2.

Intermediate the ends of the outer bar 2 are secured two lugs 6 and 6^a which project from the channel of this bar and are spaced apart. A link 7 has one end pivotally connected with the lug 6 and the other end with a lug 8 projecting from the channel of the inner bar 1 adjacent the end remote from the rod 3. A link 9 is pivotally connected with the lug 6^a and with a slide 10 mounted on the rod 3. The links converge towards the lugs 6 and 6^a so that as the slide is moved to the left, in Fig. 1, the bar 2 will be moved away from the bar 1 as shown in Fig. 2.

Another feature of this linkage arrangement is that the bar 2 is free to rock on the pivot connections of the links 7 and 9 so that the stretcher will automatically adjust itself to the general contours of sleeves having various shapes and sizes. That is to say, as the bars 1 and 2 are moved away from one another when positioned in a sleeve, the first slight pressure exerted on the sleeve will cause the bars to rock on their pivots until the pressure is evenly applied throughout the length of the sleeve.

Inward pressure on the bars 1 and 2 is resisted by the resiliency of the rod 3 which is bowed slightly during the stretching of the sleeve. A block 11 secured in the channel of the bar 1 in spaced relationship to the rivet 5 engages the rod and serves as a fulcrum on which the rod bends to apply resilient pressure to the bars so that the latter will be constantly engaged with the sleeve even if the latter should stretch slightly after the slide 10 has been set in its final position.

To releasably lock the slide 10 on the rod 3, I provide a spring actuated trigger 12 for cramping the rod. The trigger is provided with a slot through which the rod freely passes when the slide is moved to expand the stretcher. Movement of the slide in the opposite direction is resisted by the cramping engagement of the inclined upper side of the slot with the adjacent

surface of the rod 2 which is preferably square in cross-section. The intensity of the cramping engagement may be varied by an adjusting screw 13 bearing against the underside of the rod 3 and threaded in a metallic extension 10a of the slide which is formed as a heat insulated hand grip. The extension 10a is provided with a shoulder or stop 10c adapted to engage the trigger 12 to prevent it from being swung past its position for effectively cramping the rod 3. The trigger is provided with a thumb engaging portion 12a of heat insulating material and the extension 10a is provided with a finger engaging portion 10b also of heat insulating material.

The opposite ends of the bar 1 are also provided with heat insulating blocks 14, 15, the block 14 being shaped at its forward end to readily slide through the sleeve and to protect the latter from contact with the forward ends of the bars 1 and 2. An opening 14a in the block 14 is adapted to receive a thumb or finger of the operator to facilitate the contraction of the stretcher to enable it to be withdrawn from a sleeve. The rocking movement of the forward ends of the bars 1 and 2 away from one another is limited by a block 16 carried by the bar 2 for engagement with the link 9. The block 16 and another block 17 also serve to prevent the sleeve from being caught between the link 9 and bar 2 and between the link 7 and bar 1 during the withdrawal of the stretcher from the sleeve.

It will be noted that the engagement of the end of the bar 2 with the block 14 prevents rocking movement of the bar 2 in one direction, and that the engagement of the block 16 and link 9 prevents rocking movement of the bar 2 in the other direction. The stretcher, when contracted to bring the above mentioned parts into engagement, will thus form a rigid or immobilized device which will facilitate its entry into or withdrawal from a sleeve.

What I claim as my invention is:

1. A sleeve stretcher including two sleeve bars; a member having a sliding connection longitudinally of one of the bars; and two links, each link having one end thereof pivoted on the second bar, the other end of one of the links being pivoted on the first mentioned bar and the other end of the second link being pivoted on the member so that as the member is moved in one direction the bars will be moved away from one another.

2. A sleeve stretcher including two sleeve bars; a member having a sliding connection longitudinally of one of the bars; two links, each link having one end thereof pivoted on the second bar, the other end of one of the links being pivoted on the first mentioned bar and the other end of the second link being pivoted on the member so that as the member is moved in one direction the bars will be moved away from one another; and means for releasably locking the member from movement in the opposite direction.

3. A sleeve stretcher including two sleeve bars; a member having a sliding connection longitudinally of one of the bars; and two links pivoted on the second bar at points spaced from one another but adjacent the middle of the bar, one of the links also being pivoted on the first mentioned bar, and the second link also being pivoted on the member so that as the member is moved in one direction the bars will be moved away from one another.

4. A sleeve stretcher including two sleeve bars; a rod formed of springy material directly secured to one of said bars and arranged to diverge therefrom to extend intermediate of the bars; and means including a member slidable on the rod for moving the bars away from and towards one another.

5. A sleeve stretcher including two sleeve bars; a rod directly secured to the inner side of one of the bars and extended intermediate of the bars and longitudinally thereof; a member slidable on the rod; and linkage between both bars and between the other of said bars and the member for moving the bars away from one another when the member is moved in one direction.

6. A sleeve stretcher including two sleeve bars; a rod directly secured to the inner side of one of the bars at a point substantially midway between the ends of the bar and arranged to diverge therefrom to extend intermediate of the bars and longitudinally thereof; a member slidable on the rod; and linkage between both bars and between the other of said bars and the member for moving the bars away from one another when the member is moved in one direction.

7. A sleeve stretcher including two sleeve bars; a rod secured to the inner side of one of the bars and extended intermediate of the bars; a member slidable on the rod; and two links, each link having one end thereof pivoted on the second bar, the other end of one of the links being pivoted on the first mentioned bar and the other end of the second link being pivoted on the member so that the bars will be moved away from one another when the member is moved in one direction along the rod.

8. A sleeve stretcher including two sleeve bars; a member having a sliding connection longitudinally of one of the bars; and two converging links having their extremities pivoted on the second bar, the other extremity of one link being pivoted on the first mentioned bar, the other extremity of the second link being pivoted on the member so that the bars will be moved away from and towards one another according to the direction of movement of the member.

9. A sleeve stretcher including two sleeve bars; a rod of springy material secured to the inner side of one of the bars at a point substantially midway between the ends of the bar and diverging therefrom to extend intermediate of the bars; a block carried between the bar and rod at a point spaced from the first mentioned point so that the block serves as a fulcrum for the rod; a member slidable on the rod; and linkage between the bars and member for moving the bars away from one another when the member is moved in one direction.

10. A sleeve stretcher including inner and outer concavo-convex sleeve bars; a rod formed of springy material secured to the convexed side of the inner bar at a point substantially midway between its ends, the rod extending intermediate of the bars; a fulcrum block carried by the inner bar at a point spaced from the first mentioned point for engagement by the rod; a slide on the rod; and two converging links having their extremities pivotally connected with the outer bar at points spaced from one another but adjacent the middle of the said bar, the other extremity of one link being pivotally connected with the inner bar at a point adjacent the end remote from the rod, the other extremity of the other link being pivotally connected with the slide so that the bars will be moved away from and towards one another according to the direction of movement of the slide.

11. A sleeve stretcher including two sleeve bars; a rod secured to the inner side of one of the bars and extended intermediate of the bars; a slide on the rod; linkage between the bars and slide for moving the bars away from one another when the slide is moved in one direction; and trigger controlled means carried by the slide for releasably engaging the rod to lock the slide from movement in the opposite direction.

12. A sleeve stretcher including two sleeve bars; a member having a sliding connection longitudinally of one of the bars; two links pivoted on the second bar at points spaced from one another but adjacent the middle of the bar, one of the links also being pivoted on the first mentioned bar, and the second link also being pivoted on the member so that as the member is moved in one direction the bars will be moved away from one another; means carried by one of the bars for engaging the other bar to limit the movement of the bars towards one another at one end thereof; and means carried by the second bar for engaging the link remote from the first mentioned means to limit the movement of the bars towards one another adjacent the other end thereof, the said means being adapted to prevent the second bar from rocking in either direction on the links when the stretcher is contracted.

13. A sleeve stretcher including two sleeve bars; a rod secured to the inner side of one of the bars and extended intermediate of the bars; a slide on the rod; linkage between the bars and slide for moving the bars away from one another when the slide is moved in one direction; and means carried by the slide for releasably engaging the rod to lock the slide from movement in the opposite direction.

14. A sleeve stretcher including two sleeve bars; a rod secured to the inner side of one of the bars and extended intermediate of the bars; a slide on the rod; linkage between the bars and slide for moving the bars away from one another when the slide is moved in one direction; and a spring actuated lock carried by the slide for releasably engaging the rod to lock the slide from movement in the opposite direction, the said lock including a manually operable part for releasing the lock.

HOWARD ADDISON JOHNSTON.