ASSIST DEVICE FOR DOFFING STOCKINGS

In order to ensure easy handling as well as cost-effective production of an assist device for doffing stockings, in particular compression stockings, it is proposed to configure the assist device with two rod-shaped sliding elements, where a front end of each rod-shaped sliding elements is connected to a top circular border of the stocking at diametrically opposite positions in a form-fitting and force-fitting manner, and where the stocking can be rolled off and/or slid off the leg and/or foot by sliding the sliding elements in the direction of the foot and over the foot.
Clamping with threaded plate
Clamping with quick acting clamp (Destago)
Clamping with eccentric tappet

Fig. 5
ASSIST DEVICE FOR DOFFING STOCKINGS

BACKGROUND OF THE INVENTION

[0001] The invention concerns an assist device for doffing stockings, in particular compression stockings, comprising two rod-shaped sliding elements, where a front end of each rod-shaped sliding element can be connected to an upper circular border of the stocking at diametrically opposed positions in a form-fitting and force-fitting manner.

[0002] An assist device of this type is described, for example, in DE-A-723 244. It is a manual device for individuals with a disability in the legs or hip and/or hindered in their mobility for extending the reach of arms and legs with jaw-like grasping devices for feet and leg clothing pieces, characterized in that the grasping devices for donning and doffing stockings, legwear or the like consist of clamping jaws combined to form flat pliers having approximately the width of a thumb and a half to full length of a hand, whose handle rods serve as a means for reach extension.

[0003] Said handle rods have the approximate length of an arm, ranging from 60 to 80 cm. When donning or doffing underwear, legwear, or stockings, gripping pliers of this type are used for each hand of the user, with which the legwear is seized at opposite positions of the top border, the stocking is seized folded lengthwise over the length of the clamping jaw and seized at opposite positions of its top opening and slid over the leg or foot, and/or the foot or leg is introduced into the piece of clothing that is seized and held with both gripping pliers. When doffing, the legwear or stocking is removed from the foot or leg by pressing it down with the clamping jaw and pulling it off.

[0004] Because the grasping rods are short, a stocking can in fact be folded up to the ankle, but the folded stocking has to be slid over the heel afterwards, which can be problematic, in particular with compression stockings.

[0005] A further device for donning and doffing stockings and lower-half clothing is disclosed in DE-A-1 942 671. The latter is characterized in that the device consists of a flat rod with a firm clamping jaw and an elastic clamping jaw, so that a slider sliding on the flat rod causes the clamping jaw to close, where the detachment of the slider from the rail is prevented via a clamp. This device is suitable for folding the stocking and/or the piece of clothing for the lower half of the body up to the heel and then subsequently sliding it over the heel, where hip and/or knee movements are required.

[0006] DE-A-1 967 853 describes an assist device for doffing stockings consisting of a shoehorn measuring 500 mm in length, on whose outward curved surface an actuator in the shape of a similarly curved, half open tube, which is open at the bottom, is attached horizontally with respect to the longitudinal axis at a distance of at least 50 mm from the bottom end. This device is also suitable for simply sliding a stocking up to the heel and subsequently sliding the folded stocking over the heel.

[0007] A further assist device for doffing stockings is known from the utility patent DE 20 2006 018 494 U1. This device comprises an essentially round internal element, which is configured so as to be arranged around a leg and holding the folded top end of a stocking, where the internal element encompasses an internal space. An essentially ring-shaped external element is further provided, which is adapted to the internal element, wherein the external element is configured so as to be arranged around a leg and around the internal element, in such a way that a top end of a stocking slid over the internal element can be clamped between the internal element and the external element, wherein the internal element comprises an internal space.

[0008] The assist device for doffing stockings is characterized in that the internal element is not completely closed, but extends over an angle smaller than 360°, forming an opening into the internal space between the ends of the internal element. Moreover, the external element is not completely closed, but extends over an angle smaller than 360°, forming an opening into the internal space between the ends of the external element.

[0009] The known assist device for doffing stockings has the disadvantage that it is made up of several parts and that the handling of the individual elements is difficult for older individuals. The assist device for doffing stockings is also based on the idea of sliding the stocking over the heel, which, however, can be impeded by the first and second elements.

[0010] From DE 603 03 517 T2 is known an assist device for donning and doffing a support element, for example, a support element for doffing compression stockings comprising a tongue, which is slid between the stocking and the calf, and handles for operating the device with the forward motion toward the end of the stocking and when the stocking is slid over the heel. The device is characterized in that it has a movable bottom section comprising a sliding plate carrying a bottom tongue, wherein the bottom tongue is attached vertically to the sliding plate, which acts as a support, and to detachable lateral, longitudinal handles, which are attached to each side of the sliding plate in a lateral position. This embodiment is also relatively complex.

[0011] Finally, German application DE 197 30 225 A1 discloses a hand tool for partially disabled individuals with a handling element, which consists of a tube provided with a firm handle and shaped as an offset bend. A force transmitting device formed by a control cable is arranged coaxially in the tube between a grasping lever and a movable, spring-loaded pliers section, which is swivel-mounted on the pliers head, where the movable pliers section as well as the firm pliers section is at least arranged in the manner of a blade in the area of the pliers jaws. The description mentions that handling elements of this type can be used as handling assist devices. Indications that stockings, in particular support stockings, can be doffed with handling elements of this type do not arise from DE 197 30 225 A1. Incidentally, the handling elements described in DE 197 30 225 A1 would not be suitable for an application of this type because they have a length which is inadequate for completely removing support stockings from a leg.

[0012] Assist devices for dressing to be used by the physically disabled are further known, for example, such as those disclosed in DE-A-34 23 150, which have a telescope-like cane, which has at least two tube-shaped telescoping parts that can be slid one into another. Said telescope-shaped parts can be slid one into another when the device is not used and the assist device for dressing can be comfortably carried along in a handbag or coat pocket or the like, for example. Further assist devices for dressing are disclosed, for example, in U.S. Pat. No. 3,993,228 and/or U.S. Pat. No. 3,604,604.

SUMMARY OF THE INVENTION

[0013] Taking the above mentioned as a point of departure, it is an object of the invention to further develop an assist
device for donning stockings of the type mentioned above in such a way that completely sliding the stocking over the foot is simplified.

[0014] The object is attained according to the invention in that the sliding elements have a length that corresponds to at least the length of a leg plus the length of the stocking, and in that the stocking can be rolled off and/or slid off the leg and/or foot by sliding the circular border connected to the front end of the sliding elements up to and over the foot.

[0015] The sliding elements have a length that corresponds at least to the length of a leg plus the length of the stocking, which ensures that the stocking can be completely slid off the leg.

[0016] In a preferred embodiment, the stocking has diametrically opposite slots on the top border, such as loops or eyelets, for accommodating hooking elements arranged at the ends of the sliding elements.

[0017] In order to further simplify the handling of the sliding elements, these can be configured as telescoping rods. In this way, the sliding elements can be adjusted to different leg lengths as well as to stocking lengths. Transportation and storage are also simplified.

[0018] In order to further simplify the handling, the sliding elements are each mounted and/or guided in a guiding means.

[0019] The guiding means can be arranged on the body of the person using the sliding elements and/or on a chair. The guiding means is preferably configured as a loop, inside of which the sliding element is guided. The loops can be attached to the person and/or the chair on which the person is sitting, for example, by means of a belt.

[0020] In order to accommodate the hooking elements arranged at the front end of the sliding elements, means shaped as eyelets or loops are attached to the circular end of the stocking, into which holding elements can engage.

[0021] Moreover, the sliding element can be connected to the upper circular border of the stocking by means of a clamping fixture. Clamping can then alternatively be achieved with a threaded plate, a quick acting clamp, like a DESTAGO clamp, or an eccentric tappet.

BRIEF DESCRIPTION OF THE DRAWINGS

[0022] Further details, advantages and features of the invention are not only apparent from the claims, the features described therein—indeed independently and/or combined—with also from the preferred exemplary embodiments disclosed in the following description of the drawings.

[0023] In the drawings:

[0024] FIG. 1a) shows a schematic representation of a person using assist devices for donning a support stocking;

[0025] FIG. 1b) shows a device for holding and/or guiding the assist devices;

[0026] FIG. 2 shows a plan view of a person using assist devices for donning a support stocking;

[0027] FIG. 3a) shows a lateral view of the device with holding belts according to FIG. 1b) being used by a person;

[0028] FIG. 3b) shows a frontal view of the device with holding belts according to FIG. 1b) being used by a person;

[0029] FIG. 4 shows a lateral view and a plan view of the top end of an assist device for donning a support stocking; and

[0030] FIG. 5 shows a cross sectional view of an assist device with a clamping fixture for accommodating the top end of the support stocking.

DESCRIPTION OF THE PREFERRED EMBODIMENTS

[0031] FIGS. 1a) and 2 show assist devices 10, 12 for donning a support stocking 14. The assist devices 10, 12 are configured as rod-shaped sliding elements having a hook-shaped element 20, 22 at their front end, each of which engage in a loop 24, 26, which is arranged diametrically opposite to the internal side of a top circular border 28 of the stocking 14, preferably on an inner side of the leg and on an outer side of the leg.

[0032] For easy handling, the assist devices are guided in holding means, such as holding belts 30, 32, which can be attached to the back of the chair 36, as depicted by way of example in FIG. 1b), so that the rod-shaped assist devices 10, 12 are guided in the holding belts 30, 32.

[0033] In order to use the assist devices 10, 12, the top border 28 of the support stocking 14 is first folded over, and the hooking elements 20, 22 are introduced into the loops arranged inside the border. The support stocking 14 is subsequently slid off the leg by sliding the assist devices 10, 12 in the direction of the arrow 38.

[0034] The sliding off action is carried out in the manner of a “skinning,” where already slid off stocking material slides on the surface of the stocking material still remaining on the leg.

[0035] The assist devices 10, 12 have a length corresponding to at least the length of the leg plus the length of the stocking. Once the front ends 16, 18 of the assist devices 10, 12 of the foot 40 have been reached, half of the stocking 14 will have been slid off, so that further sliding in the direction of arrow 38 is required in order to slide off the remaining length. This is easy to accomplish, because the assist devices 10, 12 are guided in the holding belts 30, 32. The heel region, which is difficult to get over, can be easily passed without undesired jamming in this area by means of the assist devices 10, 12 shaped like rod-shaped sliding elements.

[0036] FIGS. 3a) and 3b) show an alternative attachment of the belt 34 to the body of the person using the assist devices 10, 12, wherein the belt 34 is arranged in the hip region. The holding belts 30, 32 are arranged on the side of the belt, of which each holds one of the rod-shaped sliding elements 10, 12.

[0037] FIG. 4 shows the end 16, 18 of a sliding element 10, 12, on which the hooking element 20, 22 is arranged, which can engage in the loop 24, 26. A preferred embodiment is the sliding element configured as a telescoping rod, which comprises at least one internal tube element 44, which can be coaxially displaced within an external tube element 46 and can be secured at a desired length by means of a compression fitting 48.

[0038] FIG. 5 shows an alternative fastening type between the sliding elements 10, 12 and stocking 14. For this purpose, a clamping fixture 50 is provided, which is configured as a U-shaped clamp. The folded over border 28 of the support stocking is then clamped into the U-shaped clamps 50, wherein the U-shaped clamps 50 are connected to the ends 16, 18 of the sliding elements 10, 12. The clamping fixture can be connected to the circular border 28 of the stocking by means of a threaded plate, a quick acting clamp (DESTAGO), or eccentric tappet.
The invention offers the advantage that stockings, such as support stockings, but also trousers, can be donned on their own, preferably in sitting position, by means of the sliding elements 10, 12 by individuals wearing the stocking and/or trousers.

What is claimed is:

1. An assist device (10, 12) for donning stockings (14), in particular compression stockings, comprising two rod-shaped sliding elements, where a front end (16, 18) of each rod-shaped sliding element (10, 12) can be connected to a top circular border (28) of the stocking (14) at diametrically opposite positions in a form-fitting and force-fitting manner, characterized in that the sliding elements (10, 12) have a length that corresponds at least to the length of a leg plus the length of the stocking, and in that the stocking (14) can be rolled off and/or slid off the leg and/or foot (40) by sliding the circular border (28) connected to the front ends (16, 18) of the sliding elements (10, 12) up to the foot (40) and over the foot over its full length.

2. The assist device according to claim 1, wherein the stocking has diametrically opposite means (24, 26), such as loops or eyelets for accommodating hooking elements (20, 22) arranged at the ends (16, 18) of the sliding elements at the top border (18) inside the stocking (14).

3. The assist device according to claim 1, wherein the sliding elements (10, 12) are configured as telescoping rods.

4. The assist device according to claim 1, wherein the sliding elements (10, 12) are each mounted and/or guided in a guiding means (30, 32).

5. The assist device according to claim 4, wherein the guiding means (30, 32) can be arranged on the body of the person by using the sliding elements (10, 12) and/or at a chair.

6. The assist device according to claim 4, wherein the guiding elements (30, 32) are configured as loops, into which the sliding elements are introduced.

7. The assist device according to claim 4, wherein the guiding means, such as loops (30, 32), are attached to a belt (34), which can optionally be worn by the person, and/or to a chair, on which the person is sitting.

8. The assist device according to claim 1, wherein the hooking elements (20, 22) and/or clamping elements are arranged at the front end (16, 18) of the sliding element.

9. The assist device according to claim 1, wherein the connection between the sliding element (10, 12) and the top circular border of the stocking (14) is accomplished by means of a clamping fixture (50).

10. The assist device according to claim 9, wherein the clamping fixture (50) is configured as a threaded plate and/or quick acting clamp and/or eccentric tappet.

11. The assist device according to claim 1, wherein the stocking (14) can be donned on their own by means of the sliding elements (10, 12) by individuals wearing the stocking (14), preferably in sitting position.

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