DEVICE FOR IRONING SHIRTS OR SIMILAR ARTICLES OF CLOTHING

A shirt collar pressing apparatus has a plurality of telescopically nested, generally oval pressing elements 62, 63, 64 selectively movable into a working position to thereby accommodate different size collars. A heat source 65 is centrally disposed within the nest, and a single, padded pressing shoe 60, 61 is movable to and from the selected element to press a shirt collar 10i disposed therebetween.

7 Claims, 7 Drawing Figures
DEVICE FOR IRONING SHIRTS OR SIMILAR ARTICLES OF CLOTHING

BACKGROUND OF THE INVENTION

1. Field of the Invention

The present invention relates to a pressing device for pressing shirts or similar articles of clothing for packing comprising collar pressing devices capable of processing a plurality of different collar sizes and consisting of a pressing shoe and pressing elements.

2. Description of the Prior Art

The pressing device of the aforementioned type described in West German GM No. 1,934,623 comprises five collar pressing devices which are arranged on a turnstile mounted for rotation about a horizontal axis. Each of the five collar pressing devices consists of a pressing shoe and a pressing element and is suitable for pressing the collars of shirts which all have the same size collar. However, it is common practice to design each of the five collar pressing devices in such a way that not only collars of the same size can be pressed by these devices but also collars one size smaller and one size larger.

Further details of a collar pressing device are provided in German GM No. 1,921,023. In this Gebrauchstücher, it is also stated that the pressing element of the device is provided with a heating element and the pressing shoe is padded.

It is further known to construct the pressing element from material having good heat conducting properties.

The disadvantage of the known collar pressing devices is the manner in which they are constructed and arranged in relation to the folding devices. They are particularly disadvantageous because their structure and more particularly their arrangement on a turnstile requires a large amount of space, necessitates high production costs and unfavorably affects the weight of the folding device. These disadvantages are particularly noticeable when a plurality of folding devices are mounted for rotation in a synchronized manner, for example, as in the case of the embodiment described in German OS No. 1,760,429 which relates to a device for effecting a process wherein the operation of folding a shirt for packing is divided into a plurality of folding and preparation steps, preferably of equal duration, and each folding and preparation step is effected at a specific station.

A further disadvantage of the known folding devices is that the collar pressing devices of the same must be manually moved into the working position, more particularly by turning the turnstile by hand. As this must be effected fairly often, for example, in the case of customer-related preparation of shirts, much time is lost thereby.

SUMMARY OF THE INVENTION

The object of the present invention is to provide a folding device of the type mentioned initially in which the device for pressing the collars of shirts or similar articles of clothing is not subject to the disadvantages of the known devices. Hence, it does not take up a great deal of space, does not involve high production costs and is relatively lightweight. Furthermore, the collar pressing devices can be mechanically moved into the working position in an advantageous manner.

The device according to the invention is characterized in that only one pressing shoe is provided for a plurality of pressing elements suitable for different collar sizes and each pressing element is adapted to be moved into the working position with respect to the pressing shoe.

By virtue of this arrangement of the device for pressing the collars of shirts or similar articles of clothing, that is, by providing only one pressing shoe for a plurality of pressing elements, the production costs of this device are especially low and it is less susceptible to breakdowns than the known devices.

The working position in this case is the position in which one of the plurality of pressing elements is arranged with respect to the pressing shoe in such a way that when the pressing shoe and/or the pressing element are activated and the pressing shoe and pressing element are pressed towards each other, possibly with the collar of a shirt inserted between them, the pressing shoe and pressing element come into contact with each other.

A particularly advantageous embodiment of the invention consists in that the pressing elements suitable for the larger collar sizes are nested inside one another on the pressing element suitable for the smallest collar sizes. This is particularly advantageous because it eliminates the need for a turnstile or the like for holding the pressing elements. This further reduces the production costs of the device for pressing the collars of shirts or similar articles of clothing. This device also requires very little space and is relatively lightweight.

It is also advantageous for the pressing elements to be displaceably nested within one another on the first pressing element. This is an advantage because it eliminates the need for additional elements to guide the pressing elements and this form of guide provides for an advantageous development of the invention which will be described hereafter.

It is also an advantage to provide rods to slide the pressing elements with respect to one another. These rods are adapted to be activated by means of elements known per se, for example, working cylinders. This is an advantage because it enables the pressing elements to be mechanically pushed or moved into the working position at no great expense.

It is also an advantage if, firstly a heating element is arranged in a known manner in the pressing element designed for the smallest collar size and if, secondly, the pressing element is made of a material having good heat conducting properties and thirdly, if the longitudinal parts of the pressing element designed for the larger collar sizes have a wall thickness of approximately 0.2 – 1 mm.

This feature of the invention is an advantage because combined with the feature "pressing elements displaceably nested inside one another" it constitutes an inexpensive and reliable way of heating the pressing element and it does not require a great deal of space.

The pressing device comprising the above-mentioned features is thus particularly advantageously employed in apparatus in which a plurality of folding tables are mounted to rotate in synchronism. It is particularly advantageous because it enables the production costs of these devices and their susceptibility to breakdowns to be considerably reduced. The output of these devices is also increased owing to the fact that the pressing elements can be mechanically moved into the working position.
Other objects, features and advantages of the present invention will be made apparent from the following detailed description of the preferred embodiment thereof provided in reference to the accompanying drawings.

**BRIEF DESCRIPTION OF THE DRAWINGS**

FIG. 1 is a sectional view through a pressing shoe and a pressing element along the line A—A in FIG. 2 and it also shows a folding table and a shirt.

FIG. 2 is a plan view of a pressing shoe and a pressing element (3 pieces).

FIG. 3 is a side view of the pressing element in a position according to FIG. 1.

FIG. 4 is a side view of the pressing element but in a different position to the one shown in FIG. 3.

FIG. 5 is a side view of the pressing element but in a different position to those shown in FIGS. 3 and 4.

FIG. 6 is a top view of a folding table apparatus showing the pressing device according to the invention associated therewith.

FIG. 7 is a side view of a folding table apparatus showing the pressing device according to the present invention associated therewith.

The reference numerals in the drawings designate the following:

10 = shirt
10/ = collar of 10
32 = table of a folding device
42 = collar pressing device
60 = pressing shoe
61 = padding of 60
62 = pressing element (for the smallest collar size)
63 = pressing element
64 = pressing element
65 = heating element of 62
66 = rod
67 = rod
68 = base plate
69 - 72 = longitudinal parts of 63 and 64
73 = arrow
74 = arrow
75 = hinge
76 = hinge
77 = hole in 68
78 = hole in 68

**DESCRIPTION OF THE PREFERRED EMBODIMENTS**

The most essential parts of the device for pressing the collars of shirts or similar articles of clothing represented in FIGS. 1 - 5 are the pressing elements 63, 64, and the pressing shoe 60 with the padding 61 arranged in a recess in the folding table 32.

The pressing element 63, 64, which are intended for the larger collar sizes are displacably nested within one another and on the pressing element 62 which is intended for the smallest collar size. The pressing elements 63, 64, may be displaced in the direction of the arrow 73 (FIG. 1) and back to their starting position.

The pressing element 62 intended for the smallest collar size is arranged on a base plate 68. The base plate 68 is attached to the frame of a folding device which is not shown in the figures. The above-mentioned folding table 32 is also secured to this frame. The folding device may be that shown in U.S. patent application Ser. No. 440,610 to Martin Kannegiesser, filed on Feb. 7, 1974.

A heating element 65 is provided inside the pressing element 62 to heat the same.

The pressing elements 63, 64, are heated by the heat radiated from the element 62. To this end, the pressing elements 62, 63, 64 are made of material having good heat conducting properties, such as aluminum or copper alloy. Other materials possessing similar qualities may also be used. They are displacably nested within one another and the longitudinal parts 69 - 72 of the pressing elements 63, 64, are provided with thin walls, more particularly, their wall thickness is only approximately 0.2 - 1 mm.

This nested arrangement of guiding the ironing elements 62, 63, 64, within one another also has the advantage of eliminating the need for any additional guide elements.

The rods 66, 67, are provided to slide the pressing elements 63, 64, in one another and to slide them on the pressing element 62. These rods 66, 67, are adapted to be reciprocated by elements known per se, for example, hydraulic cylinders. These elements, per se, form no part of applicant's invention since any means may be utilized to achieve the requisite motions. The rods 66, 67, are joined to the pressing elements 63, 64, by means of hinges 75, 76, and are passed through holes 77, 78, provided in the base plate 68.

The mode of operation of the pressing device according to the invention — as far as can be illustrated by means of the drawings — is as follows:

The operator of the device places the collar 10/ of the shirt 10 in the opened collar pressing device 42 (FIG. 1). The pressing shoe 60, provided with the padding 61 is then moved in the direction of the arrow 74 until it rests on the pressing element 62 with the collar 10/ inserted therebetween. Any mechanism well known in the art, such as a hydraulic cylinder connected to the ironing shoe, may be utilized to achieve this movement. Such mechanism, per se, forms no part of this invention. When the pressing process is over, the pressing shoe 60 comprising the padding 61 is returned to its starting position, that is, it is displaced in the opposite direction to the arrow 74 and the collar 10/ of the shirt 10 is removed from the collar pressing device 42.

If the collars of shirts having larger sized collars are to be pressed, the appropriate pressing element 63 or 64 is mechanically moved into the working position, that is, inter alia, by means of the rods 66 or 67. The mechanical movement of one of the pressing elements 63, 64, into the working position is initiated by the operator of the device Thus, the operator does not have to perform a manual action to effect the pressing and can thus simultaneously carry out other operations. This constitutes a considerable advantage.

What is claimed is:

1. A device for pressing shirts or similar articles of clothing comprising:
   a. a first collar pressing element (62);
   b. a plurality of movable collar pressing elements (63, 64) disposed coaxially about said first collar pressing element (62), each movable collar pressing element being movable with respect to the first collar pressing element and with respect to the other movable collar pressing elements;
   c. means to selectively move said movable collar pressing elements;
   d. a pressing shoe (60) movable between a first position away from said pressing elements and a second
position in contact with one of said pressing elements; and
c. means to move said pressing shoe between said first and second positions.

2. A device according to claim 1, wherein the movable pressing elements (63,64) intended for the larger collar sizes are nested within one another on the first pressing element (62) designed for the smallest collar size.

3. A device according to claim 2, wherein the pressing elements (62,63,64) are telescopically nested in and on one another.

4. A device according to claim 3, wherein rods (66,67) connect said pressing elements (63,64) intended for the larger collar sizes with said means to move said pressing elements.

5. A device according to claim 3 wherein a heating element (65) is affixed inside the first pressing element (62) intended for the smallest collar size.

6. A device according to claim 3, wherein the pressing elements (62, 63, 64) are constructed of material having good heat conducting properties.

7. A device according to claim 3, wherein the longitudinal walls (69-72) of the movable pressing elements (63,64) designed for the larger collar sizes, have a thickness in the range of 0.2-1 mm.

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