



(12) **EUROPEAN PATENT APPLICATION**

(43) Date of publication:
04.03.2009 Bulletin 2009/10

(51) Int Cl.:
D06F 71/20 (2006.01) D06F 83/00 (2006.01)

(21) Application number: **07016803.4**

(22) Date of filing: **28.08.2007**

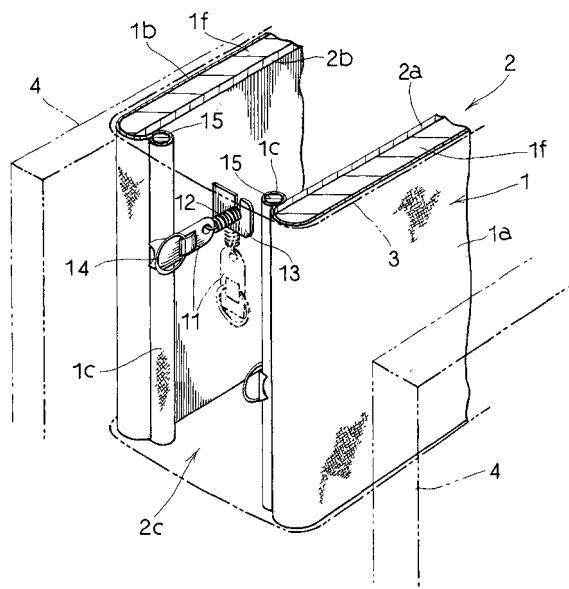
(84) Designated Contracting States:
AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HU IE IS IT LI LT LU LV MC MT NL PL PT RO SE SI SK TR
Designated Extension States:
AL BA HR MK RS
(71) Applicant: **SANKOSHA ENGINEERING CO., LTD.**
Hachioji-shi
Tokyo 193-0815 (JP)

(72) Inventor: **Uchikoshi, Mitsuyuki**
Hachioji-shi
Tokyo 193-0815 (JP)
(74) Representative: **Winkler, Andreas Fritz Ernst**
Forrester & Boehmert
Pettenkoferstrasse 20-22
80336 München (DE)

(54) **Shirt finishing machine and cover put on torso**

(57) This invention comprises the torso 2 covered by the cover 1 and the press iron 4 for pressing the front part and the rear part of the torso 2 to press finish the shirt 3 put on the torso 2. The torso 2 is set such that the side surfaces 2c are formed into an opening with plates 2a, 2b oppositely arranged at the front part and rear part. This invention is set such that the hooks 11 are hung down at both side positions of the inner surface of each of the plates 2a, 2b through the pulling members 12. The linear locations at both sides of the front part 1a and the rear part 1b of the cover 1 are formed with tubular bags 1c. This invention is set such that hard rods 15 are stored in the bag 1c. This invention is set such that the hooks 11 are engaged with the bags 1c having the rods 15 therein and both ends of the cover 1 are pulled inwardly of the torso 2. This invention can prevent the pulling wrinkles from being generated at both front and rear sides of the cover at the time of fixing the cover. Accordingly, in accordance with the present invention, it is possible to prevent this type of wrinkle from being attached to the shirt as iron spots and it is possible to finish the shirt clean. In addition, in accordance with the present invention, it is possible to perform both fixing and removing of the cover simply, perform a fast fixing or removing operation and the cover can be installed without being damaged.

Fig. 1



Description

BACKGROUND OF INVENTION

1. Field of Invention

[0001] This invention relates to a shirt finishing machine, and more particularly, a shirt finishing machine for press finishing a shirt such as a washed white shirt and the like under a state in which the shirt is put on the torso, and a cover used while the cover is being installed at the torso of this finishing machine.

2. Description of Related Art

[0002] As this type of prior art shirt finishing machine, there has been provided the machine described in the gazette of U.S. Patent No. 6,758,377, for example. This type of prior art shirt finishing machine comprises a torso covered by a cover and a pair of the front and rear parts of the press irons for press finishing the shirt put on the torso and the aforesaid torso is set such that the side surfaces are formed into an opening with plates oppositely arranged in a forward and rearward direction.

[0003] In addition, as the cover for covering the torso of this type of finishing machine, the front bodice covering the front part of the torso and the rear bodice covering the rear part of the torso are formed into a piece of sheet as described in the aforesaid document, a stripe is passed through the tubular bag part at the peripheral position and the stripe is tied or released to enable it to be installed at the torso or engaged with or disengaged from the torso.

[0004] Thus, as shown in Fig. 10A, this type of prior art finishing machine was set such that both side positions of each of the inner surfaces of a pair of front and rear plates (b) forming the torso (a) were provided with crook-shaped hooks (c), the cover (d) was bound against the torso (a) with stripes, thereafter the sides were engaged with the aforesaid hook (c) and installed there.

[0005] Accordingly, this type of prior art finishing machine was set as shown in Fig. 10B, the position of the hook (c) of the cover (d) was pulled away and so it was not avoided that both sides of the front and rear sides of the torso (a) were provided with some wrinkles (e). Due to this fact, in accordance with this prior art machine, there occurred a problem that this type of wrinkles (e) were left as the iron scars at the front and rear bodices of the shirt and a bad influence was applied to the finishing of the shirt.

[0006] In addition, this type of finishing machine is constituted such that the shirt is adsorbed against the torso and moisture contained in the shirt is absorbed through the inside part of the torso and removed. Accordingly, this type of finishing machine requires regularly a replacement of the cover because washing detergent for finishing a shirt enters into cloth or sawn portion at the cover, the cover cannot be avoided for staining. In this

case, since it is necessary to stop an operation of the finishing machine during replacement of the cover, it is desired that this type of finishing machine and the cover are formed such that the replacement of the cover can be carried out simply and rapidly.

[0007] Thus, as described above, the prior art machine had such a structure as one in which the side part of the cover was engaged with every hook arranged at the right and left sides of the torso.

[0008] Thus, this type of prior art shirt finishing machine and the cover had a problem that a replacement of the cover required a troublesome work. In addition, as described above, since the prior art machine had a structure in which the sides of the cover were pulled into the torso and engaged with the hooks, there also occurred a possibility that the sides of the cover were damaged and broken with the hooks.

[0009] The present invention has been provided in view of the prior art problems described above.

[0010] Accordingly, the technical theme to be solved by the present invention is to provide a shirt finishing machine in which the pulling wrinkles are prevented from being generated at both front and rear sides of the cover at the time of fixing the cover, the shirt finished state can be improved and at the same time the shirt finished state can be improved, the cover fixing and removal operations can be performed simply and rapidly and the cover can be installed without damaging the cover and to provide the cover put on the torso capable of attaining a similar effect attained through utilization of this finishing machine.

SUMMARY OF INVENTION

[0011] As illustrated in Fig. 1 and the like, the shirt finishing machine of the present invention comprises a torso covered by the cover and a press iron for press finishing the shirt put on the torso while pressing the front part and the rear part of the torso. The torso is set such that the side surfaces are formed to show an opening with the plates oppositely arranged at a front part and a rear part. Then, the present invention is set such that the hooks are suspended through pulling members at both side positions of the inner surface of each of the plates. In addition, the present invention is set such that the linear-shaped locations at both sides of the front part and the rear part of the cover are formed into tubular bags and the hard rods are stored in the bags. The present invention is constructed such that the aforesaid hooks are engaged with the tubular bags having the rods inserted therein and both sides of the cover are pulled into the torso.

[0012] As the pulling members, a tension coil spring or a rubber stripe or the like, for example, can be applied. It is preferable that the hooks are arranged one by one at the substantial central parts in the upward or downward direction off both side positions of each of the plates. Because, in accordance with this arrangement, it is pos-

sible to perform an efficient pulling of the entire sides of the cover by its minimum number (one) under a well-balanced and minimum troublesome work. Further, in the case of the present invention, a form of the hook is optional. In addition, in this case, a metallic round rod or a hard resin round rod can be applied as the hard rod. In the present invention, although it is appropriate that this rod is formed to have the same length as a vertical size (a length of the tubular bag) at the linear location of the cover, the present invention is not limited to this value.

[0013] In addition, the present invention is preferably set such that the hooks are provided with some ring-like handles to which a finger is engaged.

[0014] Because, in accordance with the present invention, the operation for drawing out the hooks out of the torso through the hooks and hanging them at the tubular bags can be simplified.

[0015] Thus, as the cover put on the torso used in the shirt finishing machine of the present invention, there may be provided a cover in which the linear locations at both sides of the front part and rear part are formed into tubular bags and the hard rods are stored in the bags. Meaning and length of the hard rod are similar to those described above.

[0016] In the case of the shirt finishing machine and the cover of the present invention, when the hooks are engaged with the tubular bags, the sides of the torso are drawn into the torso by the hard rods over a long range in an upward or downward direction. Thus, in accordance with the present invention, it is possible to prevent the wrinkles from being locally generated at both sides of front and rear portions of the cover put on the torso and also prevent this type of wrinkle from being left at the shirt as an iron mark.

[0017] In addition, in accordance with the present invention, since the entire sides of the cover can be drawn through once operation, the replacement work for the cover can be simplified and made fast.

[0018] Further, since the present invention has a structure in which the hooks are engaged with the bags having rods stored therein and pulled from them, it is possible to prevent an excessive force from being applied to the sides of the cover and so the cover is not damaged.

BRIEF DESCRIPTION OF DRAWINGS

[0019]

Fig. 1 is a substantial perspective view with a part being broken away for showing one preferred embodiment of a shirt finishing machine of the present invention.

Fig. 2 is a front elevational view for showing the shirt finishing machine of the present invention.

Fig. 3 is a front elevational view of a hook.

Fig. 4 is a left side elevational view of the hook.

Fig. 5 is a top plan view of the hook.

Fig. 6 is a substantial front elevational view of a shirt

finishing machine.

Fig. 7 is a substantial enlarged sectional view taken along line VII-VII of Fig. 6.

Fig. 8 is a substantial front elevational view for showing a state of use of the hook fixed to the rear side plate.

Fig. 9 is a substantial sectional view taken along line IX-IX of Fig. 8.

Fig. 10 shows a prior art example, wherein Fig. 10A is a substantial cross sectional view of a torso and Fig. 10B is a substantial perspective view.

DESCRIPTION OF PREFERRED EMBODIMENT

[0020] Referring now to the drawings, the preferred embodiment of the present invention will be described as follows.

[0021] As shown in Fig. 1 and the like, the shirt finishing machine of the present invention comprises a torso 2 covered by a cover 1, and press irons 4 depressing against the front part and rear part of the torso 2 to press finish a shirt 3 such as a white shirt or the like, for example, put on the torso 2. The aforesaid torso 2 is comprised of plates 2a, 2b oppositely arranged at the front part and rear part of the torso and its side surface 2c is formed like an opening.

[0022] As shown in Fig. 2, the press irons 4 in this preferred embodiment are arranged at the side of the torso 2 and formed at the front and rear positions of the torso 2 in such a way that they may be freely slid. Additionally, the press irons 4 are formed in such a way that steam can be supplied into them and they can be heated with the steam.

[0023] Reference numeral 5 denotes a pair of right and left supporting arms. The supporting arms 5 are formed such that they may be fallen to the side part of the torso 2 around the lower pivot shaft 7 or they may be freely raised toward a direction of the torso 2. The supporting arm 5 comprises, at its upper part, an iron buck 8 into which a sleeve extremity end of a shirt 3 is inserted and set, a heating iron 9 for press finishing both a tack and cuff of the shirt 3, and a clamp device 10 for use in holding the sleeve extremity of a semi-sleeve shirt and fixing it and the like.

[0024] Reference numeral 11 denotes a hook of which extremity end 11a is formed like a two-split claw. The hook 11 is hung at the both side position of the inner surface of each of the plates 2a, 2b through the pulling member 12. In addition, this hook 11 in this preferred embodiment is arranged one by one at a substantial central position of the side part of the torso 2 in its upward or downward direction in such a way that the hook at the front plate 2a is little bit lower than the hook 11 at the rear plate 2b and their heights are displaced to prevent their interference from each other when the hooks 11 are drawn out.

[0025] Reference numeral 13 denotes a metallic raised piece welded to the inner surface of each of the

plates 2a, 2b in order to hang the hook 11. This raised piece 13 is formed with a slit-like recess 13a in a vertical direction from the upper side. The lower end 13b of the recess 13a is bent like a hook toward an inside part of the torso 2.

[0026] The pulling member 12 in this preferred embodiment is formed by a tension coil spring. As shown in Fig. 7 or the like, the pulling member 12 is made such that an annular base end 12a is engaged with the aforesaid recess 13a and at the same time engaged with the bent lower end 13b and fixed to the raised piece 13 against its pulling off. In addition, the annular extremity end 12b of the tension coil spring acting as the pulling member 12 is hung at a hole 11b at the base end of the hook 11.

[0027] In addition, the hook 11 is provided with a ring-like handle 14 to which a finger is applied. Reference code 11c denotes a fixing part for use in connecting the handle 14 to the hook 11. This fixing part 11c is formed such that cutting lines 11d (refer to Fig. 3) are set in parallel with a longitudinal direction of the hook 11 at the plate surface of the hook 11, a portion between the cutting lines 11d is pushed out to a protruded curve shape, thereby the handle 14 can be hung there.

[0028] Thus, the cover 1 of the present invention is set such that a front part 1a and rear part 1b applied to the torso 2 to cover across the torso 2 are formed into a piece of sheet. Linear locations at both sides of the front part 1a and rear part 1b are formed into a tubular bag 1c. The bag 1c is formed by a method wherein the cloth at both sides of the front part 1a and rear part 1b is folded back into a tubular shape and their ends are sewn to each other.

[0029] Then, the cover 1 of the present invention is set such that a metallic round rod, for example, acting as a hard rod 15 is stored in a bag 1c. The aforesaid hook 11 is hung at the tubular bag 1c having the rod 15 stored therein and both ends of the cover 1 are pulled into the torso 2.

[0030] In addition, the cover 1 of the present invention is set such that waistcloth covering 1d covering the lower positions at the sides of the torso 2 are connected to both lower portions of the front part 1a. The coverings 1d are wound around the rear side of the torso 2 and their both ends are connected to the lower both sides of the rear part 1b with a fastener, for example. In addition, peripheral positions of the front part 1a and the rear part 1b are provided with a stripe (not shown) for use in fixing the front part 1a or the like to the torso 2 through onetime operation.

[0031] In addition, the cover 1 is set such that bow-shaped covering 1e for covering bow-shaped side expansion members 16 (refer to Fig. 6) for expanding the sides of the shirt 3 and applying tension to them are connected to the waistcloth covering 1d. The side expansion members 16 are usually stored in the torso 2. Further, reference code 1f (refer to Figs. 1, 7 and the like) denotes a surface-like pad member.

[0032] Then, an example of use of the present inven-

tion will be described as follows.

[0033] At first, an operator applies a finger to the handle 14 and pulls out the hook 11 hung down from inside the torso 2 against the pulling force of the pulling member 12. Then, the operator applies the hook 11 against the tubular bag 1c of the cover 1 (refer to Figs. 1, 8 and 9).

[0034] As described above, the present invention is set such that the hard rods 15 are stored in the bags 1c. Accordingly, upon pulling the cover 1 with the hook 11, its pulling force is applied uniformly to the sides of the cover 1 over an elongated range in an upward or downward direction. As a result, in accordance with the present invention, the cover 1 is attached neatly to the torso 2 without producing any local wrinkles at the sides of it.

[0035] Thus, when the cover 1 is fixed to the torso, at first, the operator applies the front part 1a and rear part 1b of the cover 1 to the torso 2, uses the stripes at the peripheral parts and binds hem against the torso 2. Then, the operator applies to cover the bow-shaped side expansion member with the bow-shaped covering 1c. Then, the operator utilizes the stripes or surface fasteners pulled out of the proper positions such as corners of the cover 1 and fixes the cover 1 to the torso 2.

[0036] Further, when the cover 1 is to be removed, at first, the operator utilizes the handle 14, pulls out the hook 11 in a slight outward direction and removes the hook 11 from the tubular bag 1c. Then, the operator removes the front part 1a or the rear part 1b and the bow-shaped covering 1e from the torso 2 and the side expansion members 16.

[0037] Accordingly, in accordance with the present invention, it is possible to fix or remove the entire sides of the cover 1 against the torso 2 simply, rapidly and neatly without damaging the cloth at all by applying the hook 11 against the bag 1c or removing the hook 11 from the bag 1c.

Claims

1. A shirt finishing machine comprising a torso covered by a cover and a press iron pressing against the forward and rearward portions of the torso to press finish a shirt put on the torso, said torso having sides formed into an opening with plates oppositely arranged at the forward and rearward portions, wherein hooks are hung at both side positions of the inner surface of each of said plates through pulling members, linear locations at both sides of the front and rear parts of said cover are formed into tubular bag portions, hard rods are stored in the bag, said hooks are engaged with the tubular bags having the rods therein and both sides of the cover are pulled inside the torso.
2. The shirt finishing machine according to claim 1, wherein the hooks are provided with handles such as rings to which an operator's finger is applied.

3. The shirt finishing machine according to claim 1, wherein the hard rods are metallic round rods.
4. A torso fitting cover used in the shirt finishing machine according to claim 1, wherein locations showing linear shapes at the front part and rear part are formed into tubular bags and hard rods are stored in the bags. 5
5. The torso fitting cover used in the shirt finishing machine according to claim 4, wherein the hard rods are metallic round rods. 10

15

20

25

30

35

40

45

50

55

Fig. 1

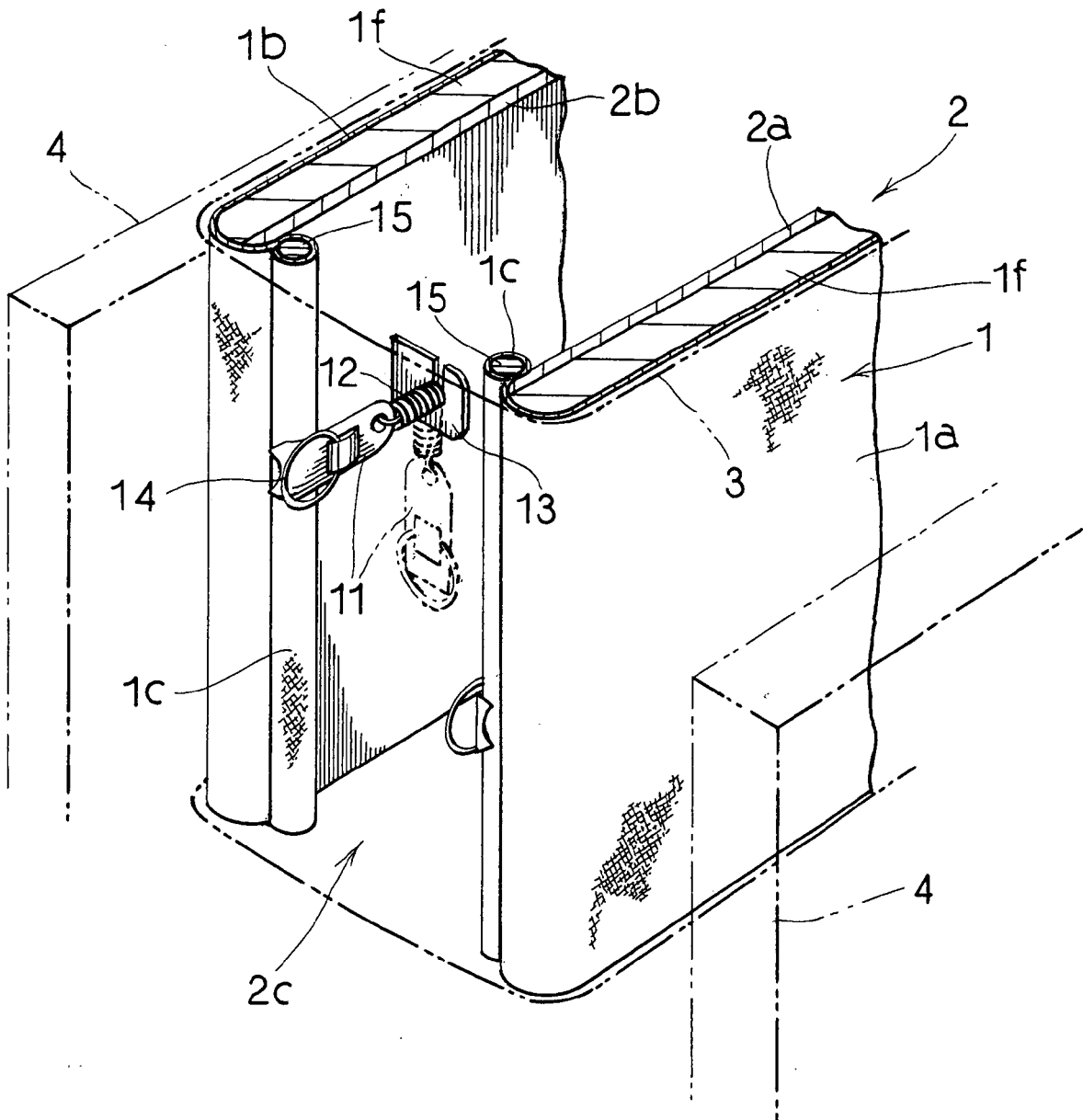


Fig. 2

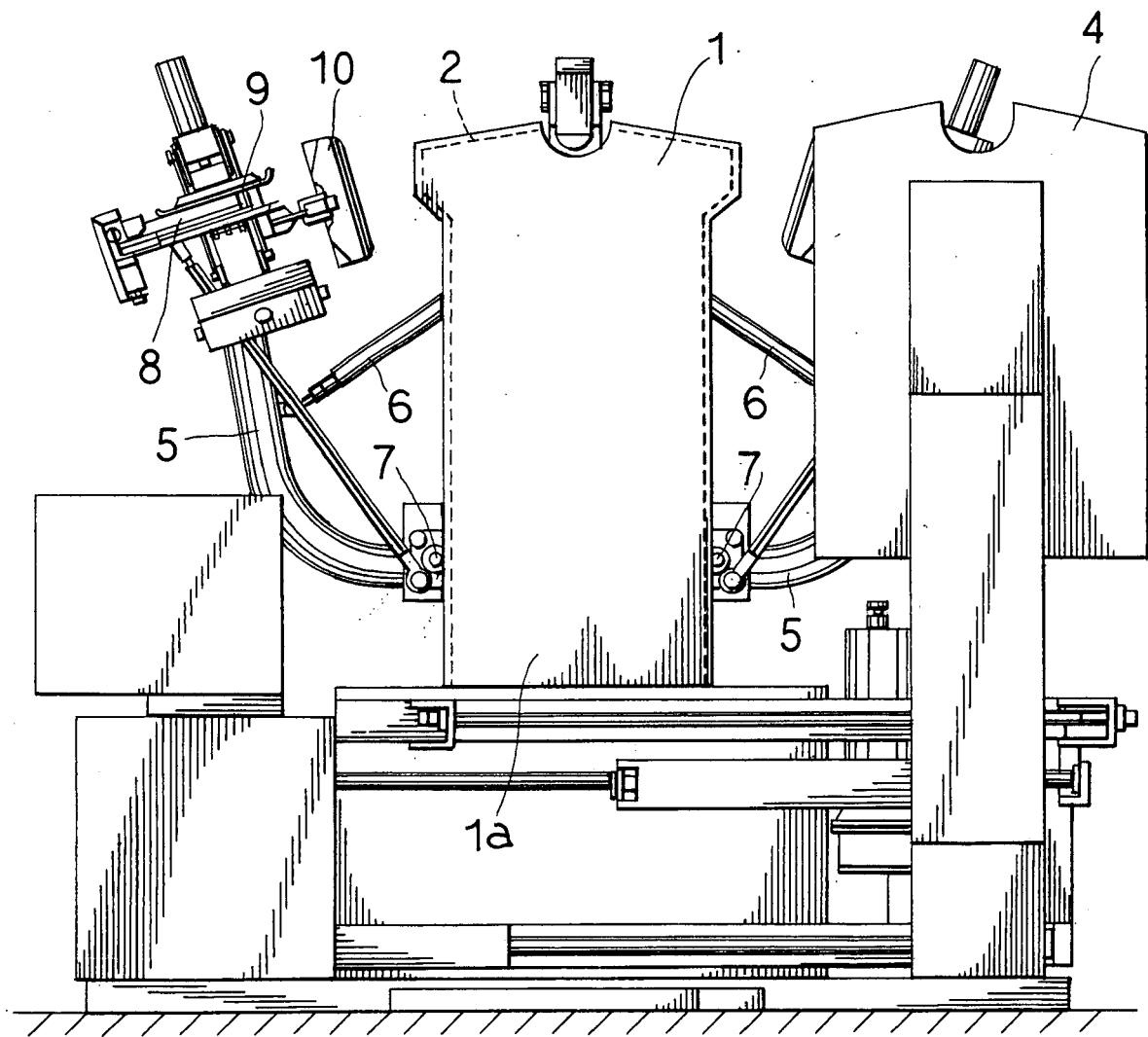


Fig. 3

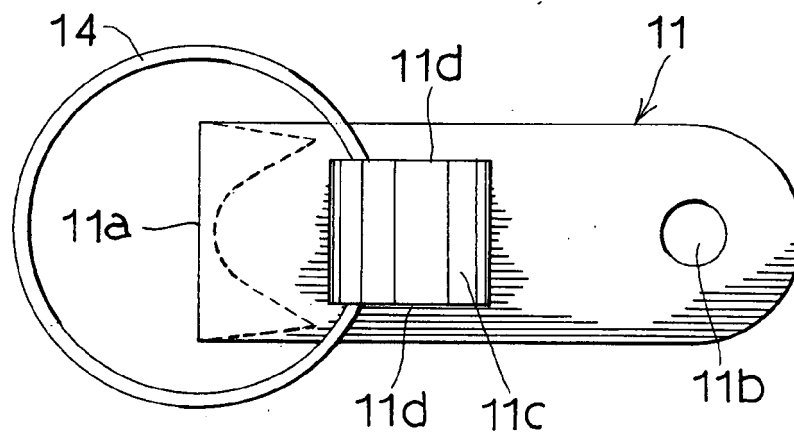


Fig. 4

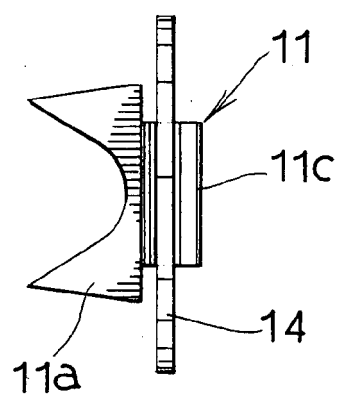


Fig. 5

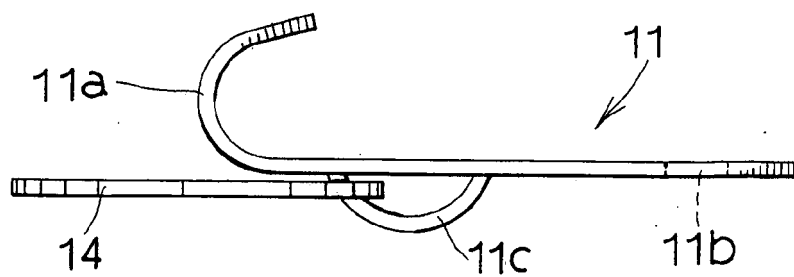


Fig. 6

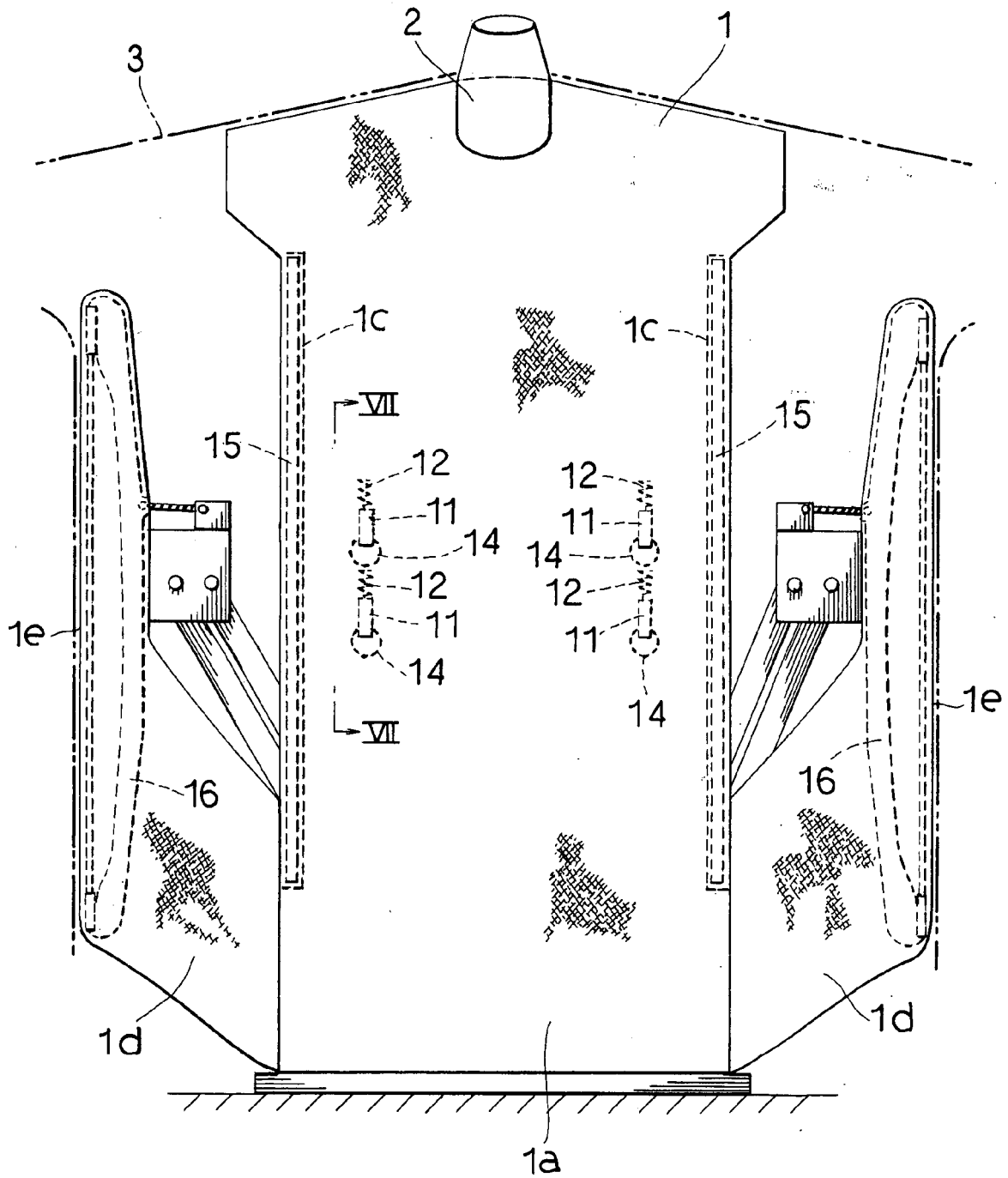


Fig. 7

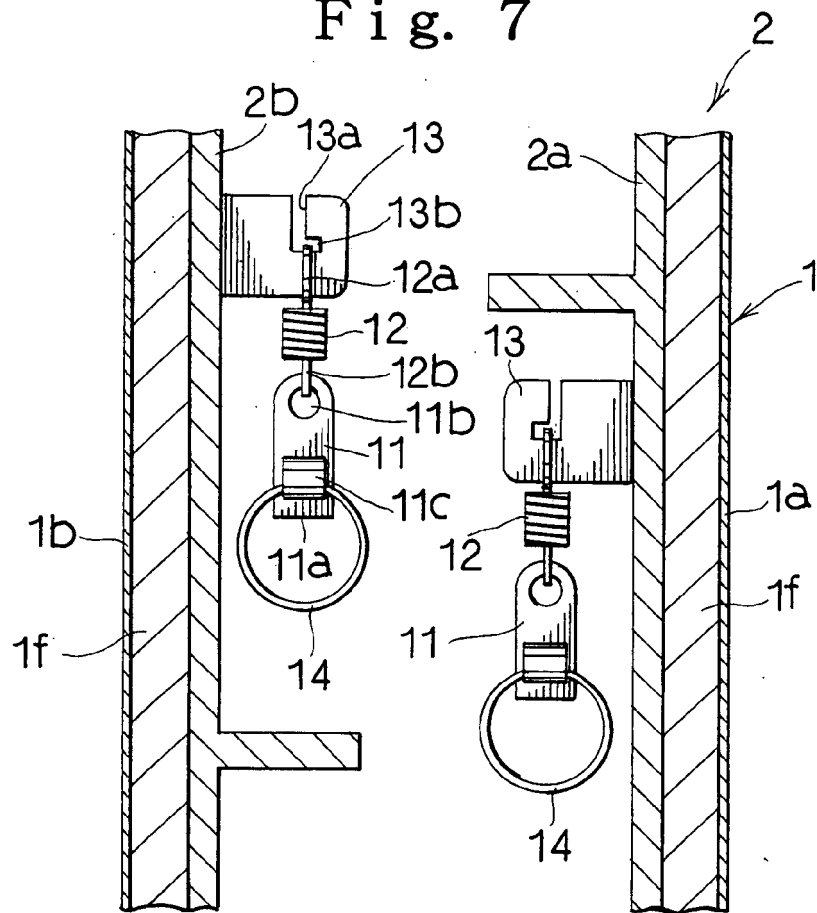


Fig. 8

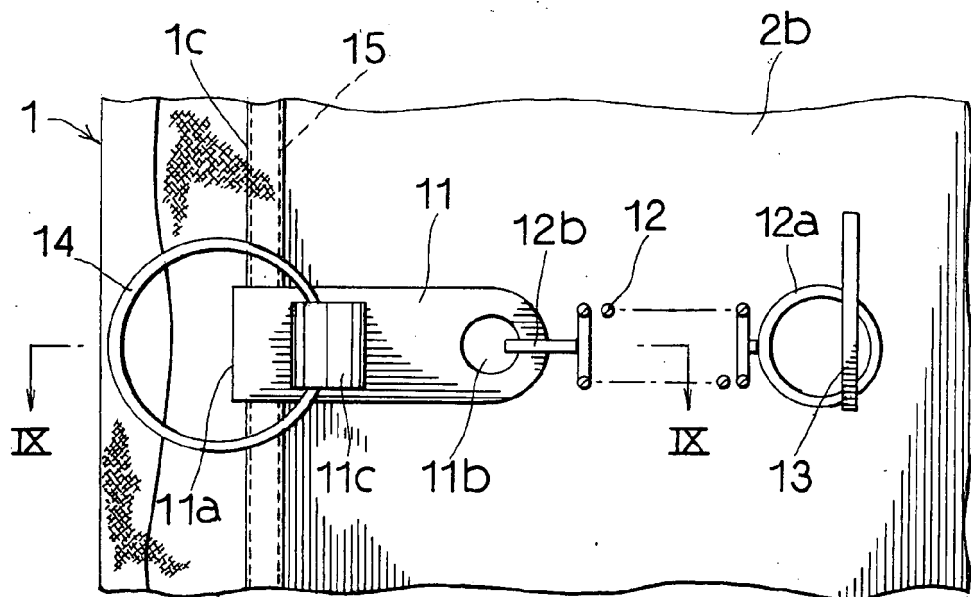


Fig. 9

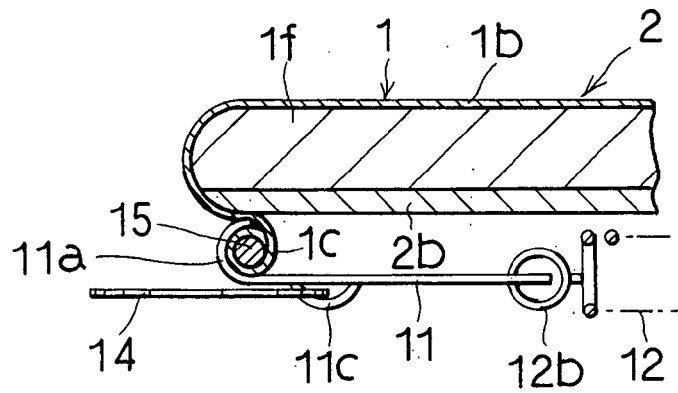


Fig. 10A

Prior Art

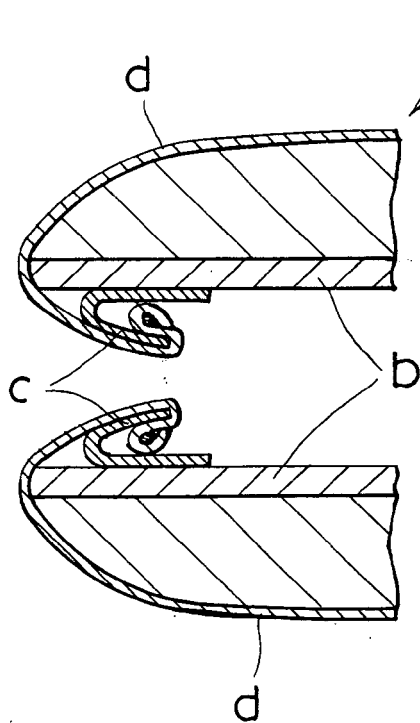
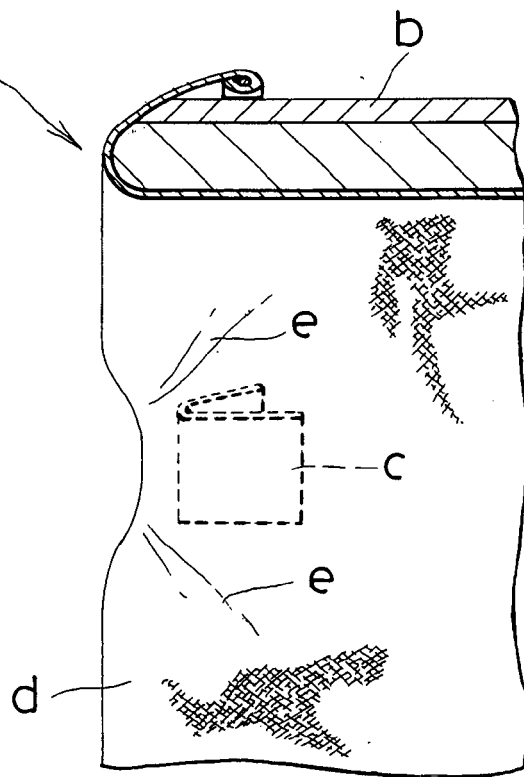


Fig. 10B

Prior Art





European Patent
Office

EUROPEAN SEARCH REPORT

Application Number
EP 07 01 6803

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
A,D	US 6 758 377 B2 (UCHIKOSHI MITSUYUKI [JP]) 6 July 2004 (2004-07-06) * column 7, line 57 - column 9, line 2; figures 1,11-15 *	1-5	INV. D06F71/20 D06F83/00
A	JP 2002 336600 A (NAKANO KK) 26 November 2002 (2002-11-26) * abstract; figures *	1-5	
A	US 3 482 745 A (FORMAN BENJAMIN) 9 December 1969 (1969-12-09) * the whole document *	1-5	
A	DE 102 12 403 A1 (VEIT GMBH [DE]) 16 October 2003 (2003-10-16) * the whole document *	1-5	
			TECHNICAL FIELDS SEARCHED (IPC)
			D06F
The present search report has been drawn up for all claims			
Place of search Munich		Date of completion of the search 28 November 2007	Examiner Lodato, Alessandra
CATEGORY OF CITED DOCUMENTS X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document			

2
EPO FORM 1503 03.02 (P04C01)

**ANNEX TO THE EUROPEAN SEARCH REPORT
ON EUROPEAN PATENT APPLICATION NO.**

EP 07 01 6803

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report.
The members are as contained in the European Patent Office EDP file on
The European Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

28-11-2007

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 6758377	B2	06-07-2004	JP 3799572 B2 19-07-2006
			JP 2003024699 A 28-01-2003
			US 2004031824 A1 19-02-2004
JP 2002336600	A	26-11-2002	NONE
US 3482745	A	09-12-1969	NONE
DE 10212403	A1	16-10-2003	CN 1480582 A 10-03-2004

REFERENCES CITED IN THE DESCRIPTION

This list of references cited by the applicant is for the reader's convenience only. It does not form part of the European patent document. Even though great care has been taken in compiling the references, errors or omissions cannot be excluded and the EPO disclaims all liability in this regard.

Patent documents cited in the description

- US 6758377 B [0002]