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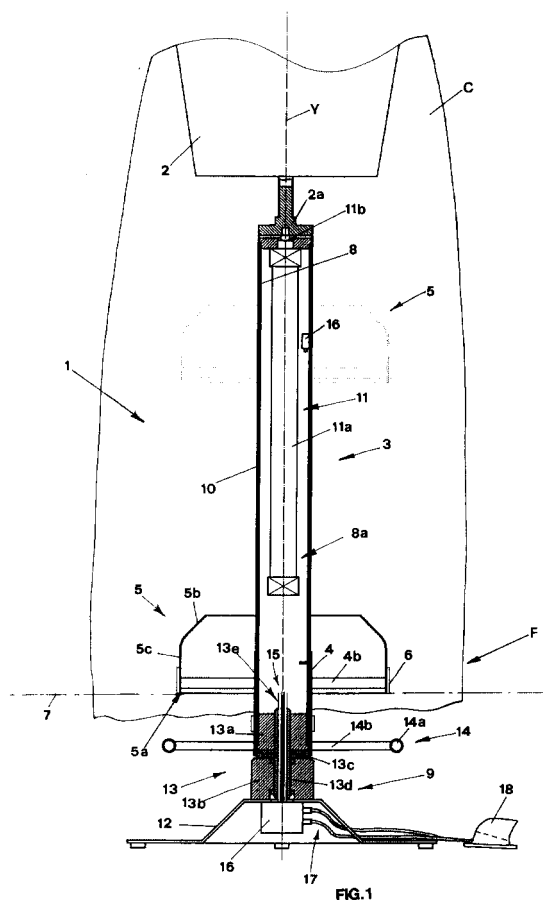
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(54) **Fixture for trimming the bottom of articles of clothing**

(57) A fixture (1, 30) for marking and trimming the bottom (F) of articles of clothing (C), preferably articles of clothing for ladies such as dresses and skirts, comprising a vertical post (3, 31) supporting a dummy (2, 37) bearing the article of clothing (C) generally in the position taken when worn by a user and a reference template (5, 39) with a generally circular plan shape slidingly coupled to the vertical post (3, 31). The lower edge (5a) of the reference template (5) defines the marking and trimming line (7) of the bottom (F) of the article of clothing (C).



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Description

[0001] The present invention relates to a fixture for trimming the bottom of articles of clothing, particularly useful for making skirts and dresses for ladies.

[0002] It is well known that the trimming of the bottom of skirts and dresses is an operation carried out when the manufacture of an article of clothing is almost finished, to set up the final length and more particularly the position of the hem. According to the traditional technique, the article is arranged on a dummy and the marking of the cutting line on the bottom of the article is effected by spraying talc powder through a proper sprayer turned around the article by an operator.

[0003] After marking, the textile fabric is being cut along the mark with manual scissors or electrical devices.

[0004] The articles of clothing are finally finished by making the hem removing possible unevenness caused by the cutting operation and giving to the article the desired look and length.

[0005] It is clear that the marking of the cut line on the bottom of the articles effected in such a way is inconvenient and inaccurate.

[0006] Moreover the marking and cutting operations in view of their difficulty must be carried out by skilled personnel capable to warrant the required precision.

[0007] Another drawback consists in that the article of clothing must be laid on a plane to carry out the cutting operation so as to occupy considerable room on the tables.

[0008] Furthermore the cutting operation is an off-line operation interrupting the manufacturing cycle with the relevant well known economic consequences.

[0009] The present invention aims to overcome the above mentioned drawbacks.

[0010] A first object of the invention is to provide a fixture for trimming skirts and dresses making easier the marking and cutting operations at the zone where the hem will be made.

[0011] A second object of the fixture is to allow to carry out on-line the trimming operation of skirts and dresses.

[0012] Another object is to provide a fixture allowing to trim skirts and dresses even by inexperienced staff.

[0013] A last but not least object is to reduce the room required for the cutting operation of the bottom of articles of clothing.

[0014] The above mentioned objects are attained with a fixture for marking and trimming the bottom of articles of clothing, preferably articles of clothing for ladies such as dresses and skirts, comprising a vertical post supporting a dummy adapted to bear said article generally in the position taken when worn by a user, characterized by comprising a reference template of generally circular plan shape slidably coupled to said vertical post, the lower edge of said reference template being adapted to define the marking and trimming line of the bottom of said article of clothing.

[0015] According to a preferred embodiment the reference template comprises a substantially cylindrical body coaxially arranged external to the vertical post and provided at the upper part with a substantially frustum conical taper.

[0016] Externally to the reference template there is an annular ring causing the article bottom to adhere against said template so as to make easier the trimming of the bottom by following with the scissors or other cutting device the lower edge of the template.

[0017] With regard to the vertical post, it comprises a fixed tubular element resting on the ground through a support base and a mobile tubular element supporting at the upper end the dummy and slidably and coaxially coupled externally to the fixed tubular element.

[0018] Inside the fixed tubular element there is a coaxial pneumatic cylinder having its body connected to the fixed tubular element and the rod end connected to the mobile tubular element so as to allow a telescopic axial movement relative to the fixed tubular element.

[0019] The support base has a rotary manifold for feeding the pneumatic cylinder and a handle applied on the mobile tubular element for rotating the dummy.

[0020] Advantageously the fixture of the invention allows to trim skirts and dresses in a simple and quick way.

[0021] Still in an advantageous way such trimming operation may be carried out on-line, thus without interrupting the working cycle.

[0022] Also advantageously the fixture of the invention allows to carry out the trimming operation of the bottom of articles of clothing even by inexperienced operators.

[0023] A last but not least advantage consists in reducing the room required to carry out the trimming operation of the articles.

[0024] The foregoing objects and advantages will be better understood by reading the description of preferred embodiments of the invention given as an illustrative but non-limiting example and making reference to the accompanying sheets of drawings in which:

- Fig. 1 is a general longitudinally sectioned view of the fixture of the invention;
- Figs. 2 to 6 show the fixture of the invention of the various stages of the operation; and
- Fig. 7 shows an executive variation of the fixture of the invention.

[0025] As shown in Fig. 1, the fixture of the invention generally indicated with reference numeral 1, comprises a dummy 2 supported by a support element 2a arranged at the upper end of a vertical post 3 bearing an article of clothing C substantially in the position taken when it is worn by a user.

[0026] According to the invention the fixture comprises a reference template 5 with a substantially circular plan shape, the lower edge 5a of said reference template 5 being adapted to define said marking and trim-

ming line 7 of the bottom F of said article of clothing C.

[0027] More particularly the reference template 5 comprises a generally cylindrical body 5c with a frustum conical taper 5b in the upper part, supported by a template holding disc 4b externally fixed to a template holding tube 4 coaxially coupled externally to the vertical post 3. In other possible embodiments the template holding disc 4b may be replaced by spokes or other support means.

[0028] The reference template 5 is fixed externally to the template holding cylinder 4 through radial spokes 4b.

[0029] Preferably but not necessarily around the cylindrical body 5c of the reference template 5 there is a matching ring 6 substantially consisting of a circular ring.

[0030] With regard to the vertical post 3 it comprises a fixed tubular element 8 resting on the ground through a support base 9 and a mobile tubular element 10 bearing at the upper end the support element 2a of the dummy 2 and slidably coaxially coupled externally to the fixed tubular element 8.

[0031] Inside the fixed tubular element 8 a pneumatic cylinder 11 is coaxially arranged having its body 11a connected to the fixed tubular element 8 and the end of its rod 11b connected to the mobile tubular element 10 so as to move it in a telescopic way relative to the fixed tubular element 8.

[0032] In said fixed tubular element 8 there is a slot 8a in which a protrusion 4a may slide, being part of the template holding tube 4 adapted to actuate a limit switch 16 arranged inside the fixed tubular element 8.

[0033] At the lower end the fixed tubular element 8 rests on a support base 9 comprising a tripod 12 with a rotation coupling 13 allowing rotation of the dummy 2 around the vertical longitudinal axis Y by rotating the handle 14 fixed to the template holding tube 4.

[0034] With regard to the handle 14, in Fig. 1 one can see that it comprises a circular handwheel 14a connected to the template holding tube 4 through radial spokes 14b.

[0035] The rotation coupling 13 comprises a first body 13a fixed to the fixed tubular element 8 and a second body 13b fixed to the tripod 12, an intermediate body 13c being arranged inbetween with a connecting pin 13d with double projection coaxially coupled to the first and the second body of the coupling to allow rotation of the fixed tubular element 8 around the longitudinal axis Y.

[0036] The connecting pin 13d is provided with an axial through hole 13e along which the feeding hoses 15 are applied, feeding compressed air to the pneumatic cylinder 11.

[0037] The feeding hoses 15 are in turn fed by a rotary distributor 16 fixed to the tripod 12 and connected to an external network of compressed air through feeding tubes 17 and control means consisting for example of an actuating treadle 18.

[0038] The presence of the rotary distributor 16 allows to feed the pneumatic cylinder 11 even during rotation

of the vertical post 3.

[0039] In operation as shown in Fig. 2, the operator puts the article of clothing C to be trimmed on the dummy 2 and raises it by actuating the pneumatic cylinder 11 through the control treadle 18 until it assumes the position shown in Fig. 3.

[0040] The limit switch 16 arranged inside the fixed tubular element 8 in an adjustable position along the tubular element, stops the reference template 5 at the desired height when hitting the protrusion 4a on the template holding tube 4.

[0041] Having thus positioned the dummy 2, the scrap 19 is being cut by using manual scissors 20 or other equivalent cutting devices, by following the lower edge 5a of the reference template 5, the bottom F of the article of clothing being held adherent to the edge by hand pressure.

[0042] As shown in Fig. 5, in some cases the matching ring 6 is used by placing it external to the cylindrical body 5a of the reference template 5 and catching the bottom F of the article C between template 5 and ring 6 as shown in Fig. 4.

[0043] In such a way it is not necessary to hold the bottom F of the article C adhering to the template 5 through hand pressure.

[0044] It is clear that in this way the cutting operation is extremely precise and takes place on a perfectly horizontal plane on the whole perimeter of the article.

[0045] The edge 5a of the reference template 5 serves in this way as a cutting guide and therefore the operation may be properly done even by inexperienced personnel. When the cutting operation is finished, the article of clothing C is firstly cleared from the matching ring 6 and then, as shown in Fig. 6, the dummy 2 is lowered to allow ejection of the article C ready for the subsequent operations, for example the sewing operation along the cut edge 21.

[0046] An executive variation of the fixture of the invention is shown in Fig. 7 where it is generally indicated with reference numeral 30.

[0047] This is a simplified and cheaper variation in comparison with the foregoing described embodiment.

[0048] In such an executive variation one can see first of all a different constructional form of the vertical post generally indicated with reference numeral 31, comprising a single fixed tubular element 32 resting on the ground through a support base 33.

[0049] The fixed tubular element 32 contains the pneumatic cylinder 34 having the end of the rod 35 fixed to the support element 36 supporting the dummy 37.

[0050] The body 35a of the pneumatic cylinder has the upper part fixed to the fixed tubular element 32 through a ring 32a.

[0051] The support element 36 of the dummy 37 is connected to the fixed tubular element 32 through a rotation preventing bar 38 passing through the fixed tubular element 32 and a hole 36a made in the support element 36.

[0052] Even in this modified embodiment the reference template generally indicated with reference numeral 39, is fixed through a template holding disc 40 to a template holding tube 41 which is slidingly coupled to the outside of the fixed tubular element 32.

[0053] Said template holding disc 40 is supported by tie-rods 42, 43 arranged outside the fixed tubular element 32 and passing through corresponding holes 36b, 36c made in the support element 36.

[0054] In such a way the adjustment of the distance of the reference template 39 to the dummy 37 is effected by raising or lowering manually the reference template which is fixed in the desired position by blocking the tie-rods 42, 43 inside the corresponding holes 46b, 46c through fastening screws 42a, 43a.

[0055] The now described modified embodiment does not allow the rotation of the reference template 39 and dummy 37 because the only admitted motion is the longitudinal movement of the reference template 39 along the vertical axis Z.

[0056] This modified embodiment is of cheaper construction because the rotary coupling for the distribution of compressed air and the handwheel for the manual rotation of the template when cutting the edge of the article of clothing are dispensed with.

[0057] From the foregoing description it is to be understood that the invention in both described embodiments attains the intended objects. The invention may be embodied in further executive variation for instance as to shape of the template and the vertical post. Even the movement means may be different from the above described and illustrated ones.

[0058] Any further variation resorted to the fixture of the invention should be intended covered by the present invention when falling in the appended claims.

Claims

1. A fixture (1, 30) for marking and trimming the bottom (F) of articles of clothing (C) preferably articles of clothing for ladies such as dresses and skirts, comprising a vertical post (3, 31) supporting a dummy (2, 37) adapted to bear said article of clothing (C) generally in the position taken when worn by a user, **characterized by** comprising a reference template (5, 39) with a generally circular plan shape slidingly coupled to said vertical post (3, 31), the lower edge (5a) of said reference template (5) being adapted to define the marking and trimming line (7) of the bottom (F) of said article of clothing (C).
2. The fixture (1, 30) according to claim 1) **characterized in that** said reference template (5, 39) comprises a generally cylindrical body (5c) coaxially arranged externally to said vertical post (3, 31) and provided at its upper part with a generally frustum conical taper (5b).
3. The fixture (1, 30) according to claim 1) or 2) **characterized by** comprising a mobile matching ring (6) adapted to catch the bottom (F) of said article (C) against said reference template (5, 39).
4. The fixture (1, 30) according to claim 3) **characterized in that** said matching ring (6) has the shape of circular ring externally coupled to said reference template (5).
5. The fixture (1, 30) according to claim 1) or 2) **characterized in that** said reference template (5, 39) is supported by a template holding disc (4b, 40) fixed to a template holding tube (4, 41), said template holding tube (4, 41) being coaxially and slidingly arranged external to said vertical post (3, 31).
6. The fixture (1, 30) according to claim 1) or 2) or 5) **characterized in that** said vertical post (3, 31) comprises a fixed tubular element (8, 32) resting on the ground through a support base (9, 33) and provided at the upper end with a support element (2a, 36) of said dummy (2).
7. The fixture (1) according to claim 5) **characterized in that** a handle (14) is fixed outside said template holding tube (4) and consists of a generally circular handwheel (14a) connected to said template holding tube (4) through radial spokes (14b).
8. The fixture (1) according to claim 6) **characterized in that** a mobile tubular element (10) is slidingly and coaxially coupled outside said fixed tubular element (8), said support element (2a) being fixed to the upper end of said mobile tubular element (10).
9. The fixture (1, 30) according to claim 6) **characterized in that** a pneumatic cylinder (11, 34) is arranged inside said fixed tubular element (8, 32), said cylinder having its body (11a, 35a) connected to said fixed tubular element (8, 32) and the end of its rod (11b, 35) connected to said support element (2a, 36).
10. The fixture (1) according to claim 6) **characterized in that** said support base (9) comprises a rotation coupling (13) for rotating said dummy (2) around its vertical longitudinal axis (Y), said rotation coupling (13) being supported by a tripod (12) resting on the ground.
11. The fixture (1) according to claim 10) **characterized in that** said rotation coupling (13) comprises a first body (13a) fixed to said fixed tubular element (8) and a second body (13b) fixed to said tripod (12), said bodies (13a, 13b) being connected to one another through a connection body (13c) provided with a pin (13d) projecting bilaterally and pivotally

connected to both bodies.

12. The fixture (1) according to claim 11) **characterized in that** said bilaterally projecting pin (13d) has an axial through hole (13e) for the passage of hoses (15) feeding compressed air to said pneumatic cylinder (11). 5
13. The fixture (1) according to claim 12) **characterized in that** said feeding hoses (15) are connected to a rotary distributor (16) fixed to said tripod (12) and pneumatically connected to an external feeding tube for compressed air through feeding tubes (17) provided with at least an on-off device (18). 10 15
14. The fixture (1) according to claim 5) **characterized in that** said template holding tube (4) has a projection (4a) adapted to co- operate with a limit switch (16) arranged inside said fixed tubular element (8). 20
15. The fixture (30) according to claim 6) **characterized in that** said support element (36) has through holes (36b, 36c), each hole having a vertical tie-rod (42, 43) arranged outside said fixed tubular element (32) along its length and fixed at the member belonging to said template holding disc (40) supporting said reference template (39). 25 30 35 40 45 50 55

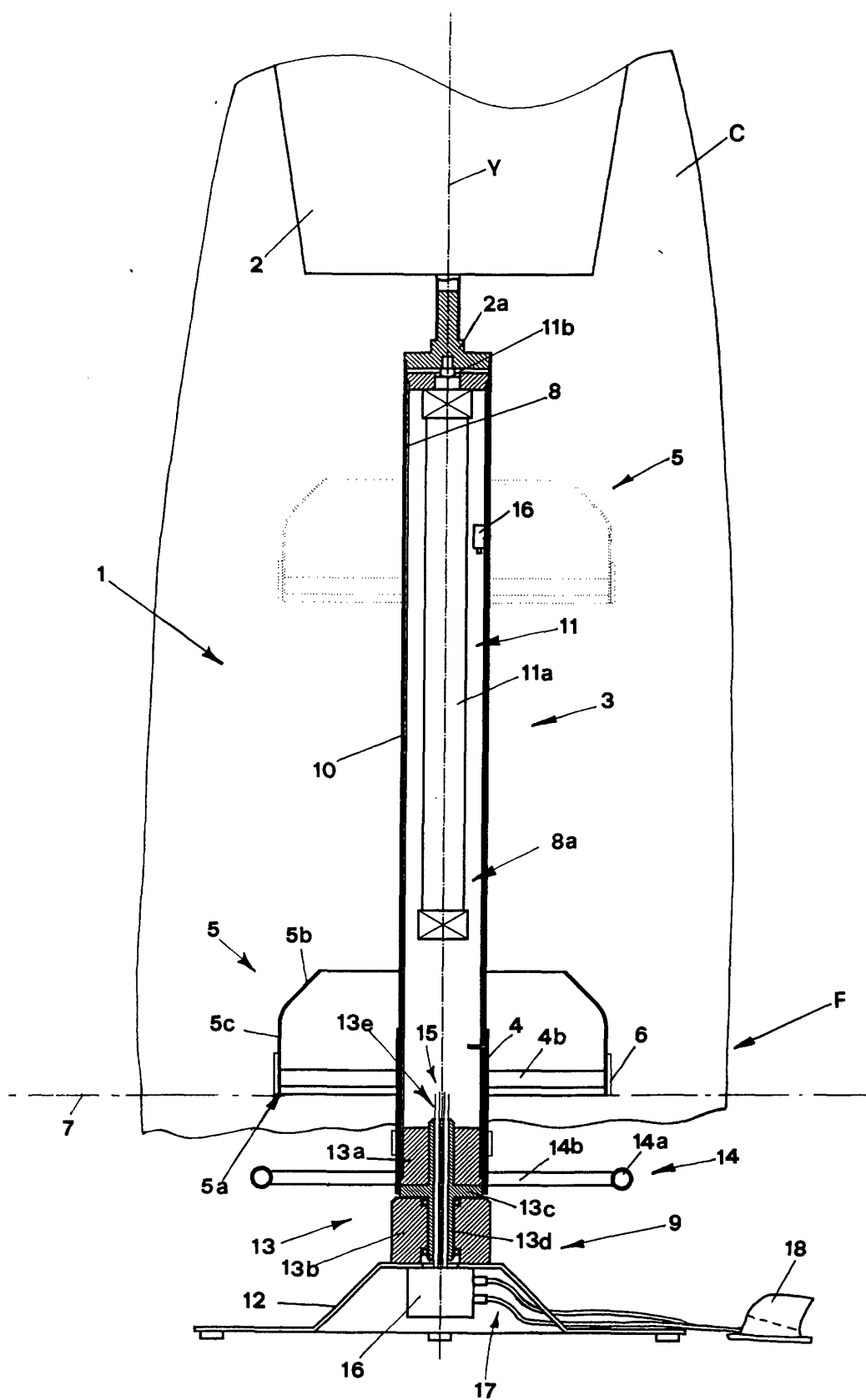
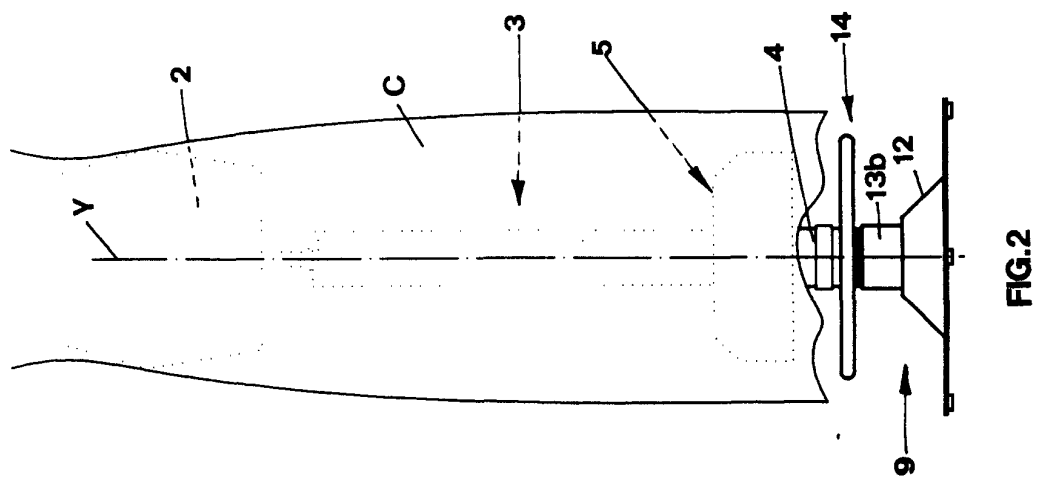
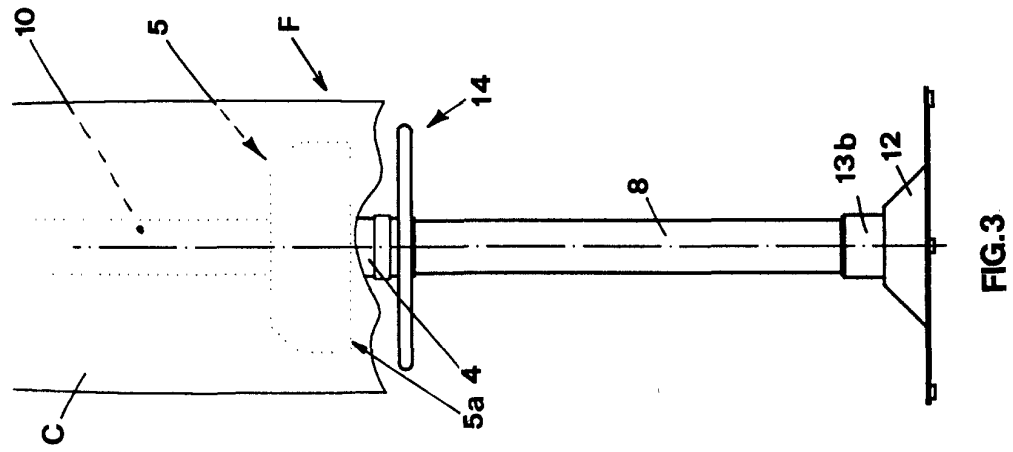
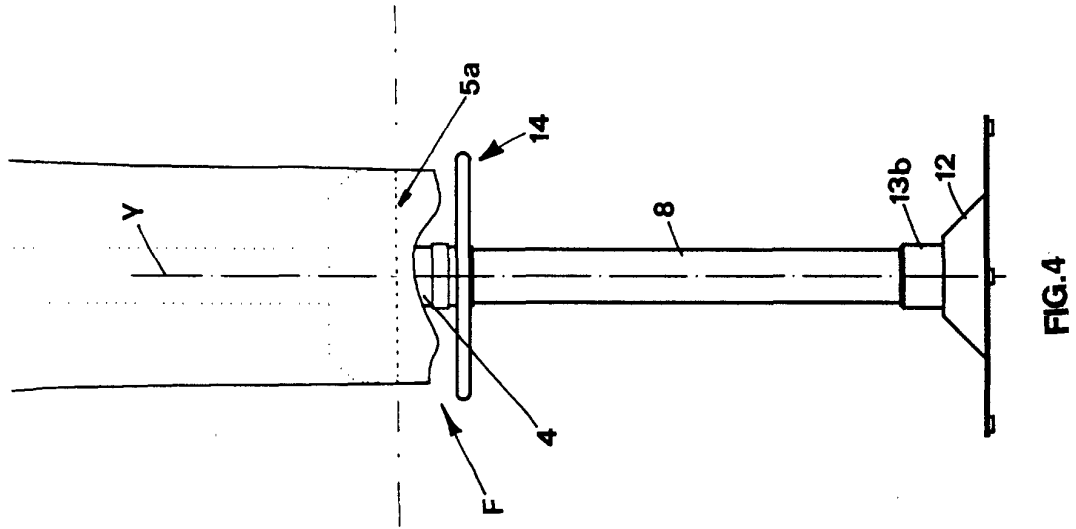
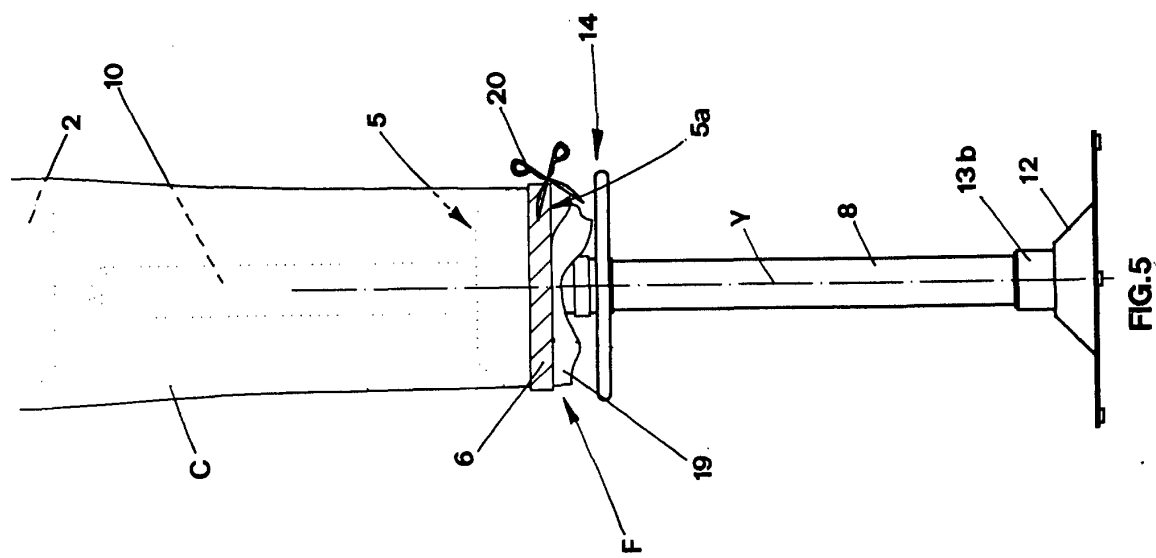
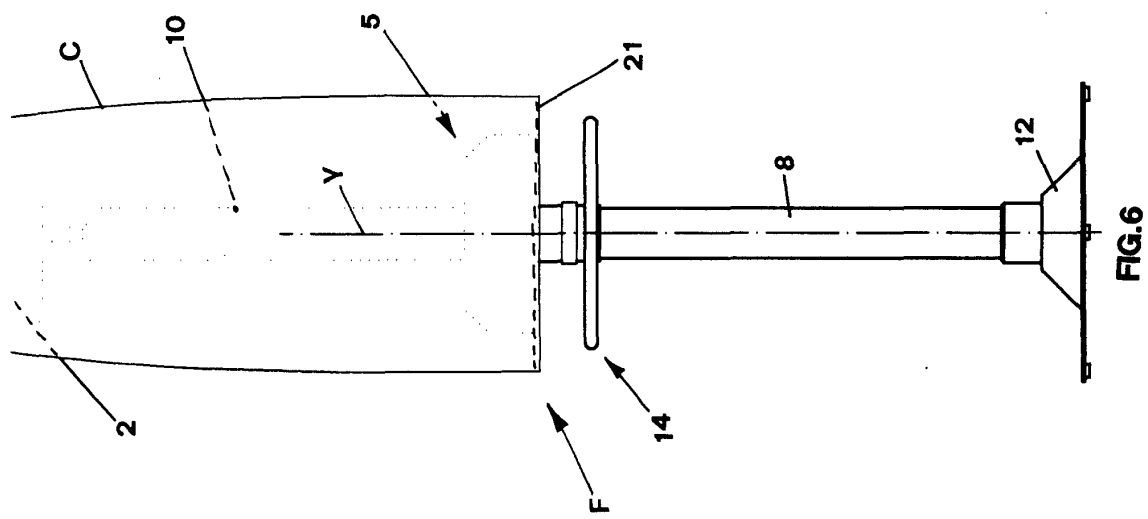


FIG.1





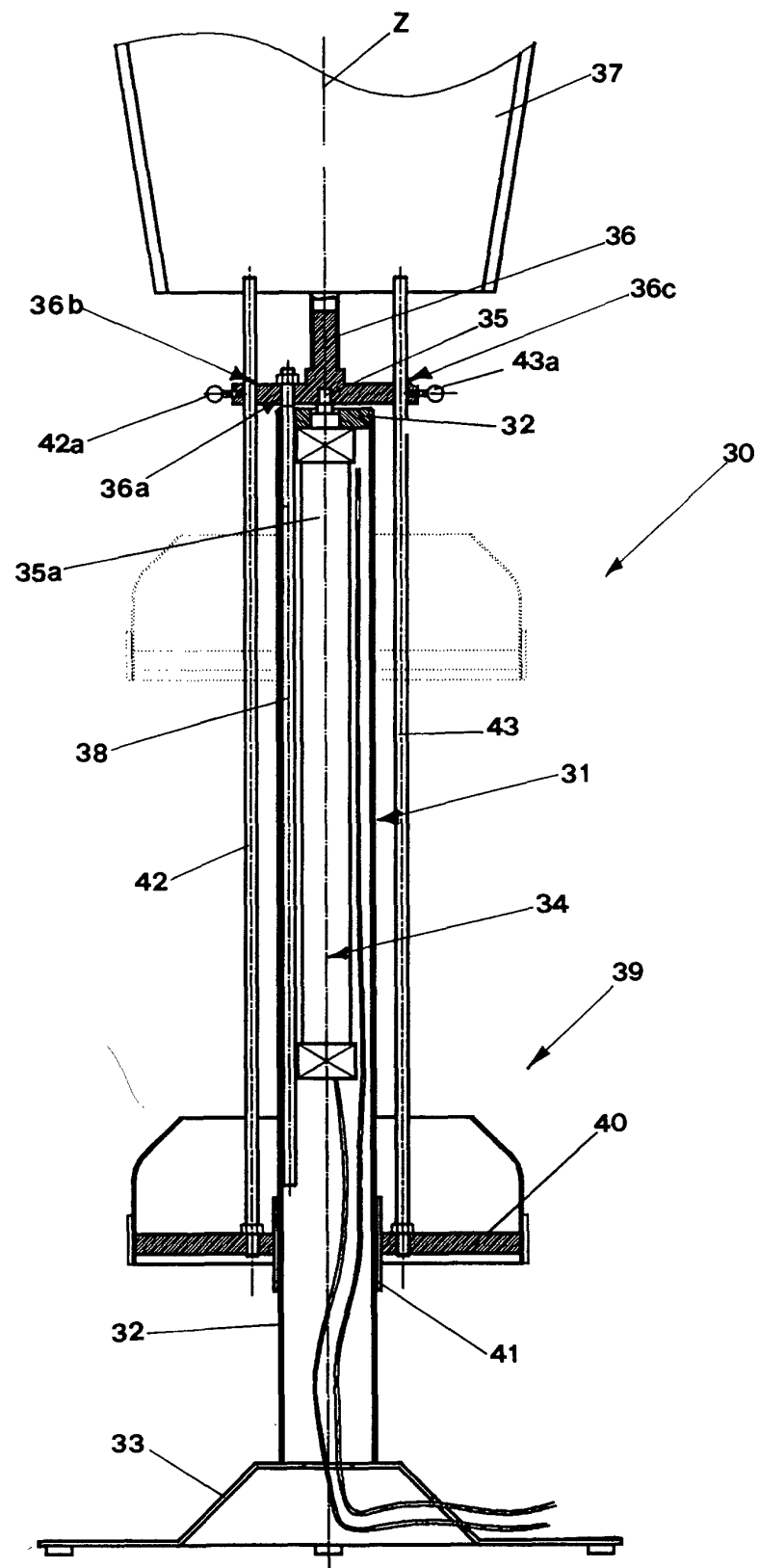


FIG.7