(19) Europäisches Patentamt
European Patent Office
Office européen des brevets

(11) EP 1 514 507 A2

(12) EUROPEAN PATENT APPLICATION

(43) Date of publication:
16.03.2005 Bulletin 2005/11

(51) Int Cl.[7]: **A47L 13/254**

(21) Application number: **04021642.6**

(22) Date of filing: **10.09.2004**

(84) Designated Contracting States:
AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HU IE IT LI LU MC NL PL PT RO SE SI SK TR
Designated Extension States:
AL HR LT LV MK

(30) Priority: **11.09.2003 IT PD20030206**

(71) Applicant: **FILMOP S.r.l.**
35010 Villa del Conte, (PD) (IT)

(72) Inventor: **Zorzo, Bruno**
35010 Onara Di Tombolo PD (IT)

(54) Duster flat support

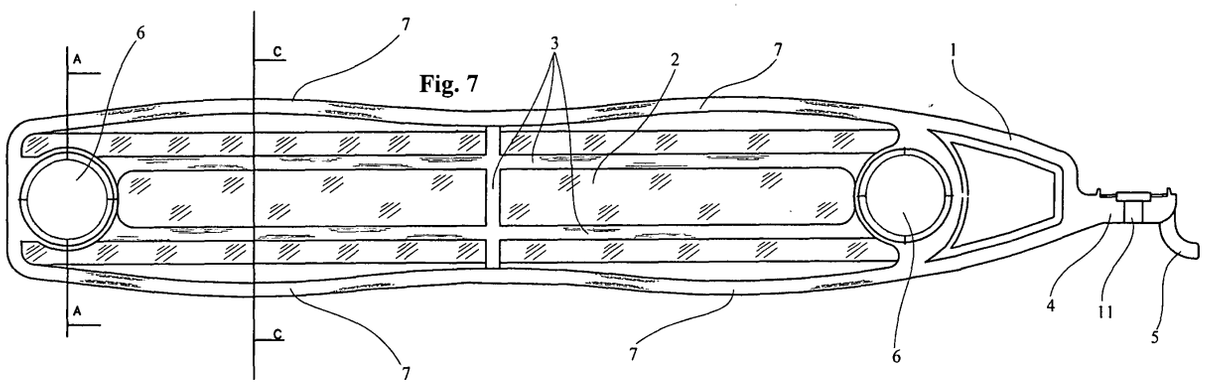
(57) It is a flat device for dusting including a laminar carrying structure with an end connected to a handle.

The laminar carrying structure is of a long shaped type, with reduced width and limited thickness.

Said laminar carrying structure has a lamina properly stiffened by ribs, and equipped on the long sides with elastically yielding elements, convex toward the outside, coplanar to the flat face of the lamina, so as to tense the active part of the lining, inside which it is placed.

Furthermore, such laminar carrying structure has one completely flat face and plates with star-shape fissures, so that disposable paper serviettes also can be used.

Fig. 7



EP 1 514 507 A2

Description

[0001] In the field of house-cleaning, dusting devices are of the most various types, keeping especially count of the service they are to give.

[0002] The cases we are considering herein are those relating to the dusting of surfaces with peculiar positions or placements, such as the inner surfaces of heating radiator columns, or wardrobe bottom parts, or wardrobe cover tops, sets of shelves and, furthermore, the higher portions of vertical and horizontal masonry (ceilings) of living apartments.

[0003] Long devices of limited width and reduced thickness are available on the market for this specific use, equipped with a grip or handle, sometimes telescopically extensible.

[0004] With reference to the grip and handle, the device, lined with the appropriate dusting material, can be turned after one's requirements, remaining in line with the handle, or reaching an angle with it, which can cover almost the whole 360 degrees arc.

[0005] The devices available on the market feature sizeable limits and shortcomings.

[0006] So, for instance, there are devices in which the dusting active material holder is made of a plastically foldable carrying structure.

[0007] There are also devices in which the dusting active material holder (plain or fringed, fabric) is made of a slot-shaped, elastically flexible, round cross-section rod, which is inserted in a fabric lining that is kept tensed, containing the holder round cross-section rod expansion.

[0008] At the moment, to dust floors, besides the usual mops, there are brooms that are equipped with a tablet adopting ready-made disposable serviettes.

[0009] At the moment, the long-type usual dusting devices can be fitted only with mop-type material linings, cantilever-held on one end with a handle, and revolving around the handle but they cannot be fitted with paper disposable type ready-made serviettes.

[0010] As a matter of fact, adopting the disposable serviettes on the devices available on the market at the moment, no satisfactory cleaning action is obtained, as the serviettes, for a correct employment, must be laid on a flat surface, and be properly retained.

[0011] It is unconceivable, then, to adopt a carrying structure, as the one for the floor brooms, holding the same serviettes, to be comfortably used by hand in the higher locations, as it should be configured as a very long device, having a very limited weight. Furthermore, the lack of flexibility, although necessary, to be inserted and to adapt to various narrow spots, makes the carrying structure of floor brooms totally unfit for such an employment.

[0012] The problem is solved by the device herein described.

[0013] The carrying structure is consists of a lamina with sizeable length and limited width and thickness, suitably ribbed on one face only, equipped, on at least one of the two long sides, with sections of yielding elastic elements, with convexities toward the outside, having the same placement as the central lamina, and not protruding from the non-reinforced side surface of the said central lamina.

[0014] The end lamina, in the axial position, is equipped with wide housings, generally circular, properly ribbed, to set some plastic material plates, equipped with star-shaped fissures.

[0015] Such plates, set into the lamina and positioned with their surfaces equipped with star-shaped fissures on the face with stiffening ribs, do not protrude from the opposing non-ribbed face, so that the lamina carrying structure keeps having a practically flat surface.

[0016] The material of the above described carrying structure can be of resinous type.

[0017] If the carrying structure is rather long, the related lamina can be equipped with several housings to set as many plates with star-shaped fissures.

[0018] The carrying structure, near the pivoting connection with the handle, has an extension.

[0019] The carrying structure as described above and made following this patent satisfies all the requirements for an effective dusting of surfaces, both adopting a mop type material lining and using paper serviettes of the disposable type.

[0020] By adopting a lining in mop type or a woven plain type or fringed type fabric, with the adequate sizes fit for the carrying structure to line, such lining can be easily inserted with little effort, which is just as easy to remove.

[0021] The sections connected to the lamina side, convex toward the outside, elastically yielding, through the pre-loading acquired by the insertion of the lining, can thus assure the necessary tensioning, based on the width of the lining itself.

[0022] To ensure for the lining not to be slipped off during use as it gets caught into some roughness, the lining itself is equipped, in correspondence of the open end, with a small belt which is secured to the special extension provided near the end inherent to the handle connection.

[0023] Another advantage obtained by the sections connected to the lamina sides, convex toward the outside, elastically yielding, is given by their configuration which allows to continue to use the linings both dry and wet, ,both new linings of larger dimensions and linings with the reduced dimensions they acquire because of the frequent washing.

[0024] Another remarkable advantage is given by the carrying structure made following this patent which is fit to use, for dusting, the common type of paper disposable serviettes available on the market.

[0025] The carrying structure is made with one of the two faces having a completely flat surface, and on this flat surface the paper applied for dusting remains stretched out and resting.

[0026] For the paper tensioning and securing, the carrying structure is equipped with star-shape fissure plates.

[0027] The ends of the serviettes, and the middle part of their sides, are folded on the face opposite to the dusting one and inserted into the special plates star-shape fissures.

[0028] All that has been described before is cleared by examining the enclosed tables with the drawings.

[0029] Fig. 1 shows the carrying structure viewed from the ribbed side.

[0030] The elastically yielding elements can be seen, convex toward the outside, connected to the sides of the central lamina.

[0031] Furthermore, the circular housings can be noted, into which the plates with the star-shape fissures are set, the end that is to be coupled to the handle and the extension connected to that end, designed to latch the belt the lining is equipped with near its fissure.

[0032] Fig. 2 and Fig. 3 are the cross-sections of the carrying structure shown in Fig. 1, viewed in correspondence with the A-A line and the C-C line.

[0033] Fig. 4 shows the end of the handle coupled to the end of the carrying structure in Fig. 1.

[0034] Fig. 5 is the side view of the carrying structure in Fig. 1, where the peculiar configuring of the end to be connected to the handle can be noted.

[0035] Fig. 6 is the view of the end of the handle in Fig. 4 rotated by 90°, showing the internal part which, in the connection with the carrying structure, is placed over the corresponding end.

[0036] Fig. 7 is the enlarged view of the carrying structure in Fig. 1 and Fig. 8 is the enlarged view of the carrying structure in Fig. 5.

[0037] Fig. 9 and Fig. 10 show in axonometric projection the plates equipped with the star-shape fissures which are to be set into the corresponding carrying structure housings represented in Fig. 7.

[0038] Fig. 11 is the cross-section of the carrying structure corresponding to Fig. 3, properly enlarged.

[0039] Fig. 12 is the cross-section of the carrying structure corresponding to Fig. 2, properly enlarged.

[0040] Fig. 13 is the representation of the handle end corresponding to Fig. 4, properly enlarged.

[0041] Fig. 14 is the representation of the carrying structure end for the connection of the handle, properly enlarged.

[0042] Fig. 15 is the representation of a carrying structure corresponding to the one in Fig. 7, but longer, in which the number of elastically yielding elements, convex toward the outside, connected to the lamina side is increased, and in which, besides the housings located at the end of the lamina to set the plates with the star-shape fissures, a further one is viewed in the intermediate section.

[0043] Fig. 16 is the side view of the carrying structure represented in Fig. 15.

[0044] The dusting carrying structure device is schematically represented, and given as an example, in the Figures of the enclosed drawings, including:

- a long laminar carrying structure 1, with limited width and very limited thickness, equipped with one end 4 for the connection to a handle 9, designed to be the supporting carrying structure for a lining (not represented) made of a material fit for dusting, or suitable for being lined with disposable-type paper serviettes; with such laminar carrying structure 1 consisting in:
  - a thin lamina with a flat face 10, and with the other face equipped with the stiffening ribs 3, and with one end 4 for the connection to the end 8 of a handle 9;
  - sections of the elastically yielding elements 7, convex toward the outside, connected to the sides of lamina 2, 10, coplanar to the flat face 10 of the lamina;
  - circular housings 6, properly ribbed and edged, to set the plates with the star-shape fissures 13, 14;
  - plates with the shaped fissures 13, 14.
- a handle (the drawing only represents its ends), applied to one end of the lamina by means fit to keep said lamina in an angled position with reference to the said handle.

[0045] If when dusting, linings in a material fit for dusting such as a mop, or a plain or fringed fabric are used, such linings are made with transversal dimensions under the maximum expansion of the elastically yielding elements, convex toward the outside.

[0046] The lining (not in the drawings), with a length corresponding to the carrying structure length, is slipped on the carrying structure 1, and by pre-loading the elastic yielding elements 7, located to the sides of the lamina, it undergoes an adequate tensioning.

[0047] The lining (not in the drawings) is tensioned also lengthwise, by connecting the small belt (not in the drawings) provided to extension 5, placed on the end of the carrying structure 1, for the connection of handle 4.

[0048] If when dusting, linings are not adopted, but dusting elements of the open type, such as disposable paper serviettes (not in the drawings) are used, the carrying structure herein fully exploits its features.

[0049] Since the carrying structure has one completely flat face 10, an element of the open type, fit for dusting, can be placed on the said face 10, and to secure it, its parts beyond the resting face are folded onto the opposing face 2, inserting the ends of the elements (and if needed the external sides, if the carrying structure is of the long type), in the star-shape fissures of the plates 13, 14, provided in the carrying structure.

[0050] The direction of the carrying structure, with reference to the handle, is properly chosen by the user

from time to time, by acting on the locking screw (not in the drawings), inserted in the holes 11 and 12, respectively on the end 4 of the carrying structure 1, and on the end 8 of handle 9, by loosening it and tightening it back.

[0051] The above descriptions and drawings outline the features of novelty and inventive capacity of a dusting carrying structure device of laminar type, which can be used either by slipping the cleaning material configured as a lining onto it, since the carrying structure is equipped with elastically yielding elements that are preloaded and thus give the necessary tensioning, or by wrapping it in thin open-type materials, such as disposable paper serviettes, since the carrying structure has one completely flat face onto which the serviettes can be laid and stretched out, and plates with star-shape fissures to secure them.

[0052] The patent is not overrun by the making of dusting carrying structure devices, even if improved, that people expert in the field may implement by the adoption of this patent's teaching.

Claims

1. Dusting flat carrying structure device, including a laminar carrying structure with an end connected to a handle, featured by the fact that the long type laminar carrying structure, with reduced width and limited thickness, consists in a lamina (2, 10) with one flat face (10) and the opposing one (2) stiffened by ribs (3) and such lamina being equipped on the long sides with elastically yielding elements (7), convex toward the outside, coplanar to the flat face (10), without protruding from it.

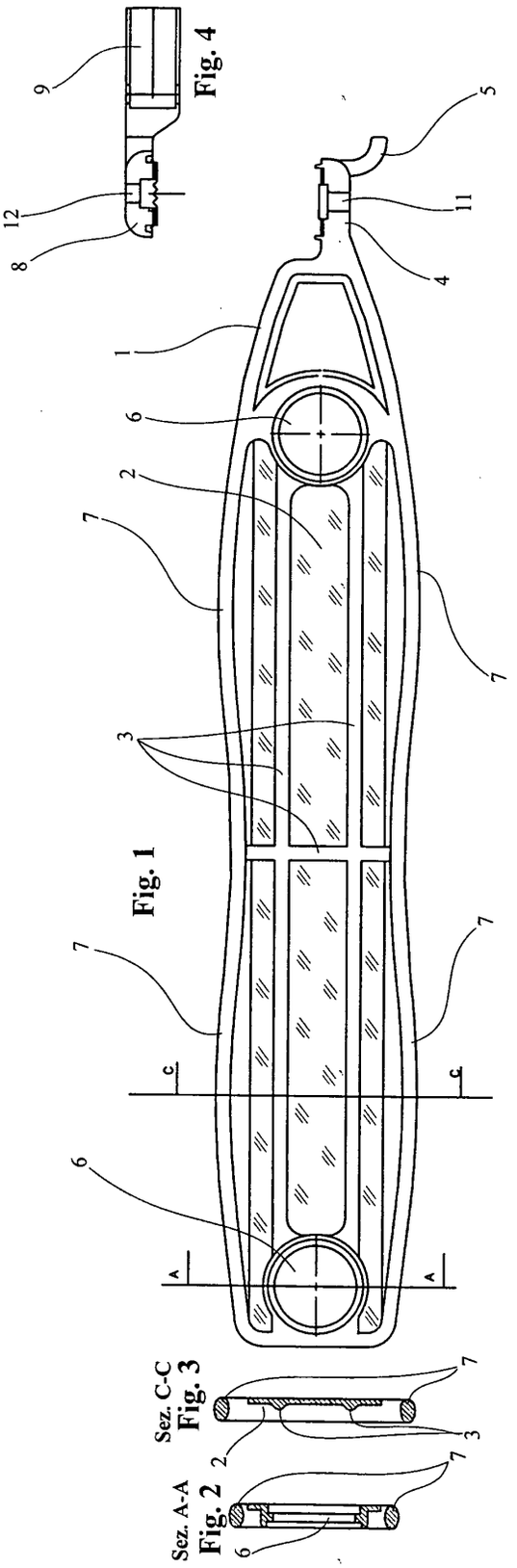
2. Dusting flat carrying structure device according to claim 1, featured by the fact that such carrying structure has areas of the lamina (2, 10) equipped with star-shape fissures (14) lowered with reference to the flat face (10).

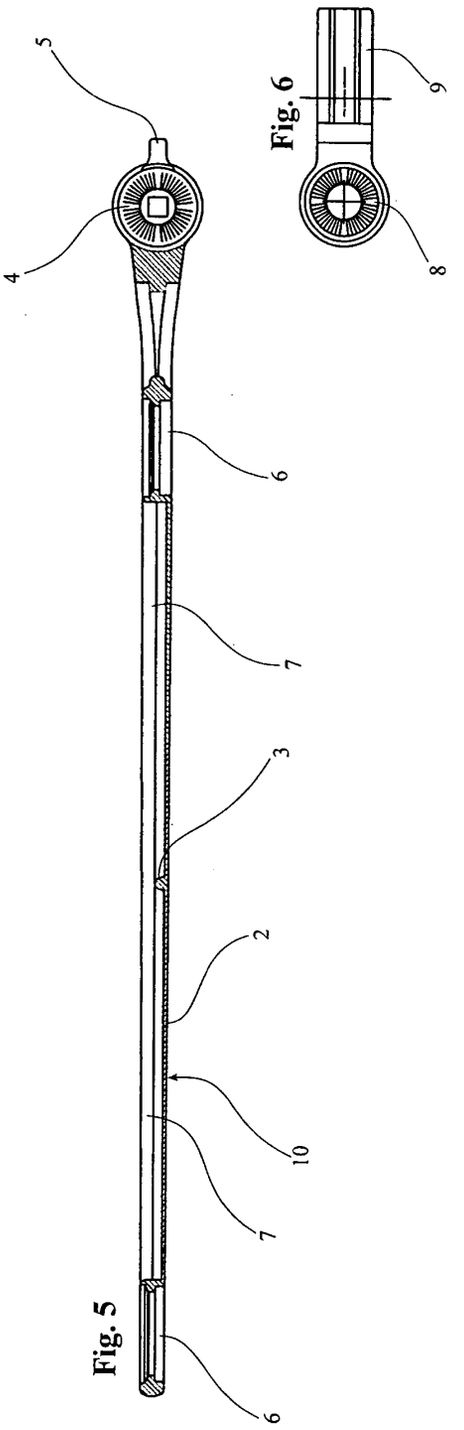
3. Dusting flat carrying structure device according to claims 1 or 2, featured by the fact that the lamina areas equipped with star-shape fissures consist in plates (13, 14) with star-shape fissures, set into the corresponding housings (6) perimetrically ribbed and edged, built into the lamina (2, 10).

4. Dusting flat carrying structure device according to claim 1, featured by the fact that a curve extension (5), fit to allow anchoring is connected to the end (4) for the coupling (8) to the handle (9).

5. Dusting flat carrying structure device according to one or more of the preceding claims, featured by the fact of being made in resinous material.

6. Dusting flat carrying structure device, according to one or more of the above claims, featured by the fact that the elastically yielding elements (7), convex toward the outside, connected to the long sides of the lamina (2, 10), after the application of a lining made in dusting material, such as mop or fabric, with a width under their maximum expansion, are pre-loaded, determining the crosswise tensioning of the lining.


9
12
8
5
11
4
1
6
2
7
3
c
A
Fig. 4
Fig. 1
Sez. C-C
Fig. 3
Sez. A-A
Fig. 2


5
4
6
7
3
2
10
Fig. 5
9
8
Fig. 6

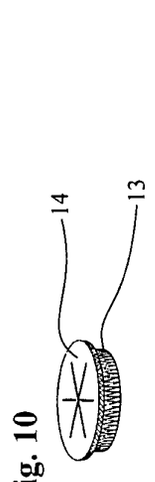


Fig. 10

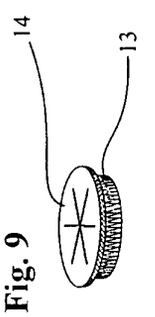


Fig. 9

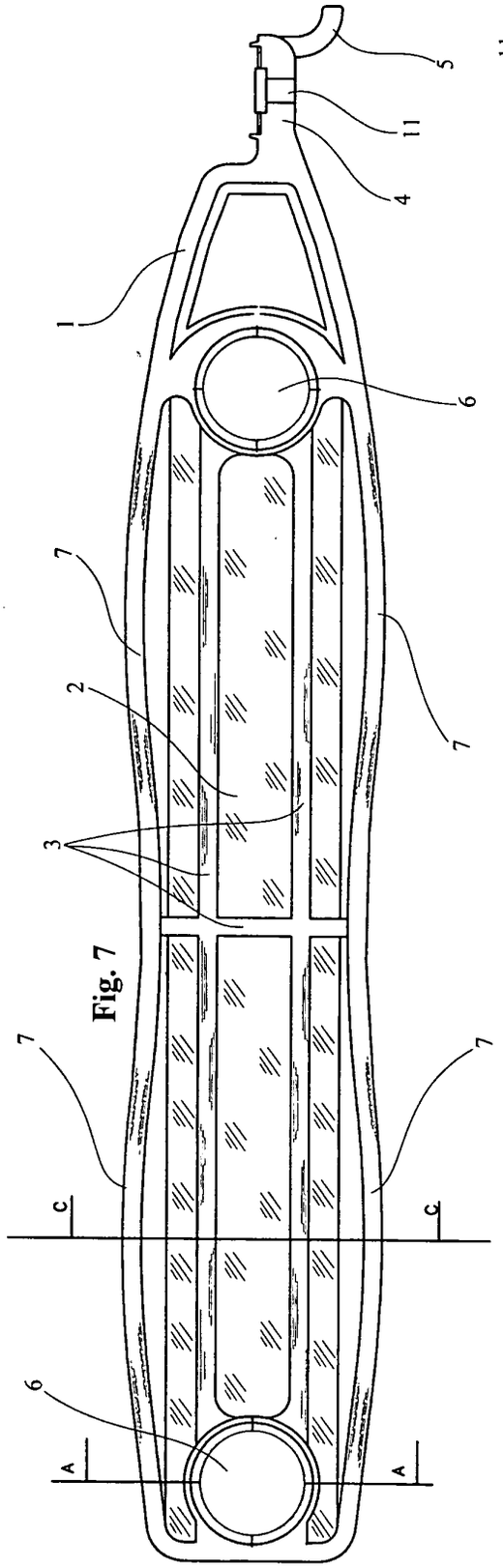


Fig. 7

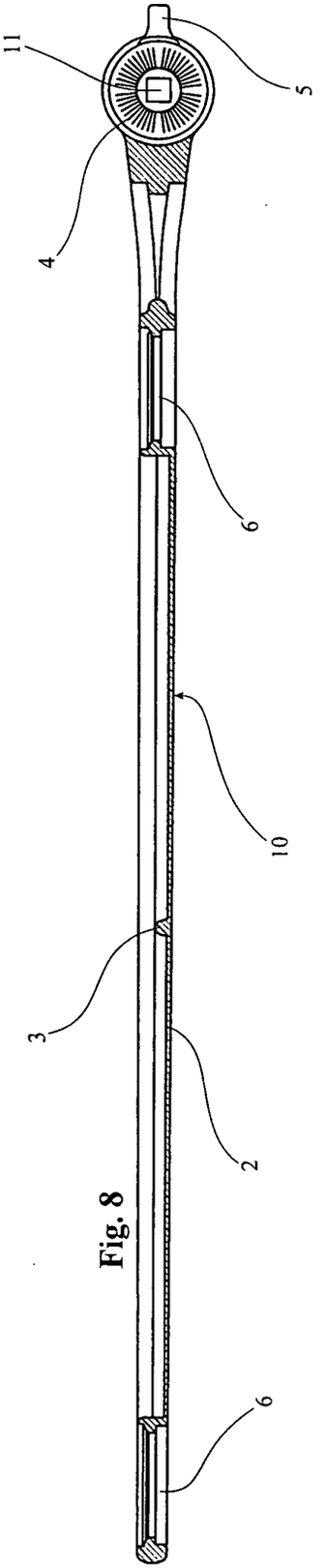


Fig. 8

Fig. 11

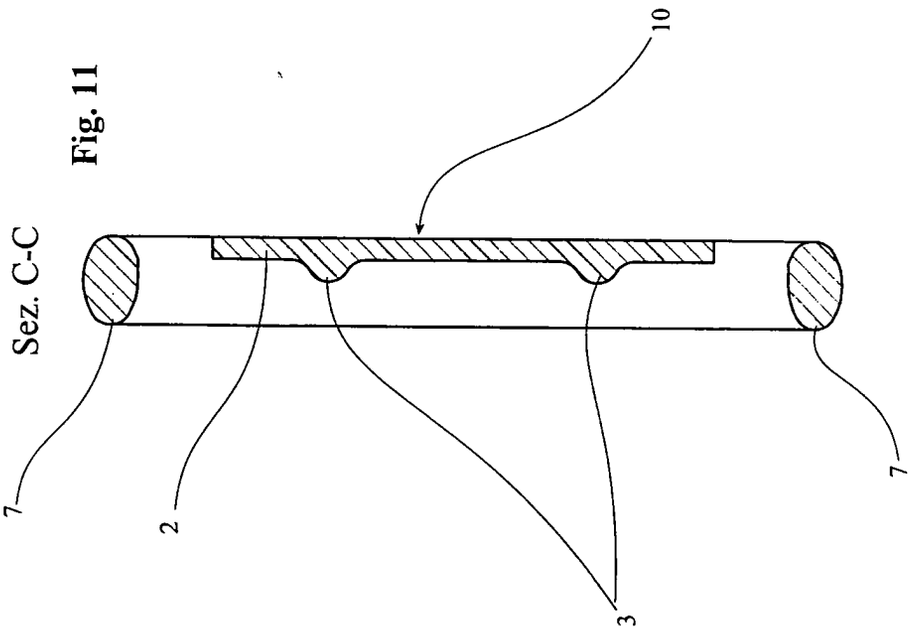


Fig. 12

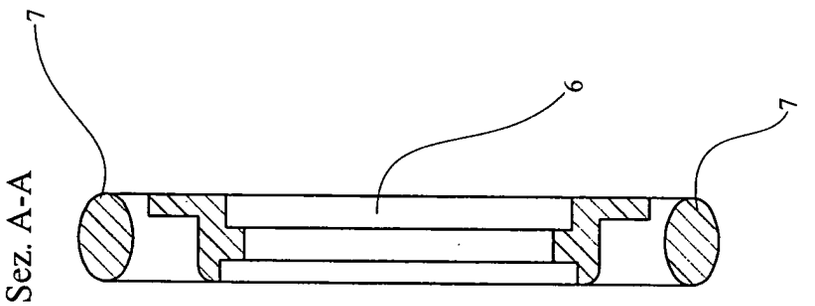


Fig. 13

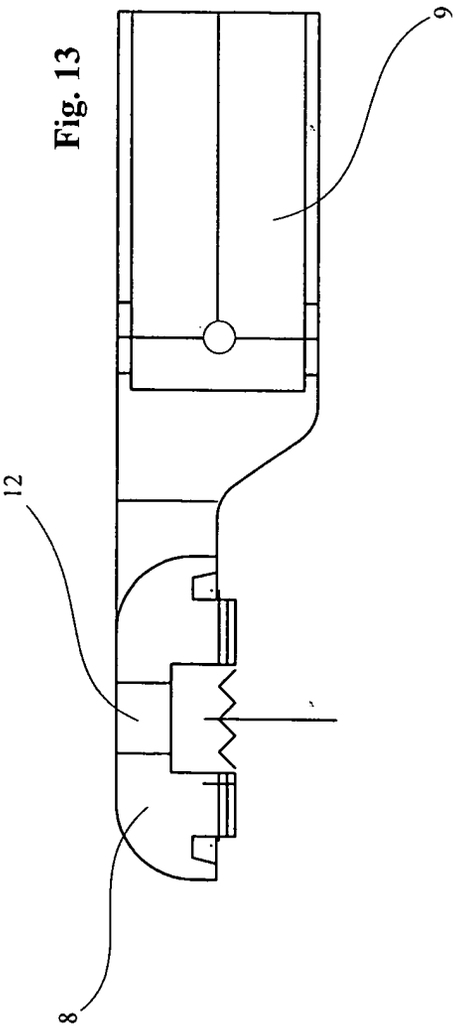
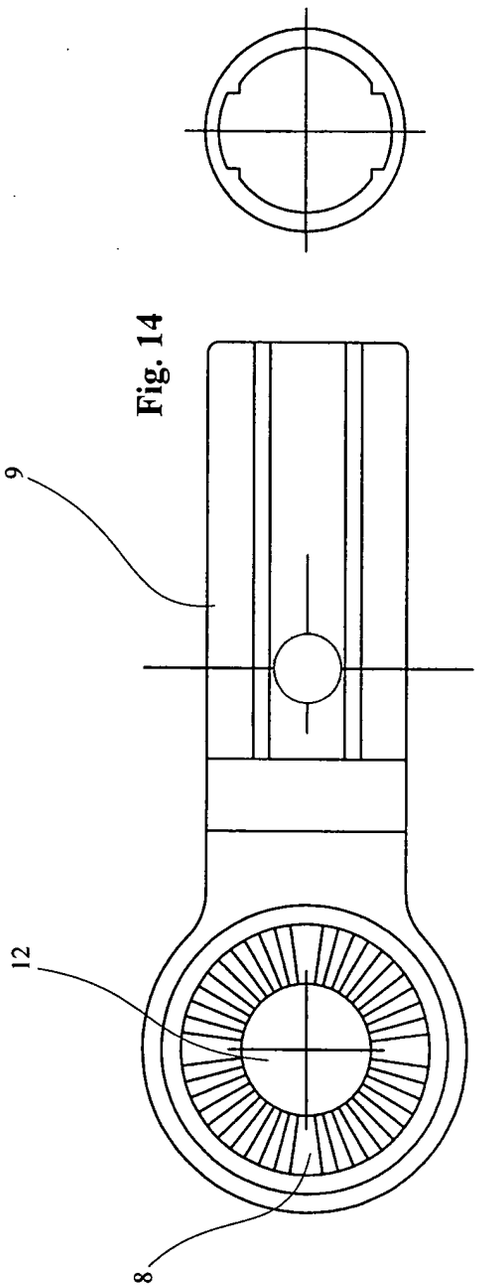


Fig. 14



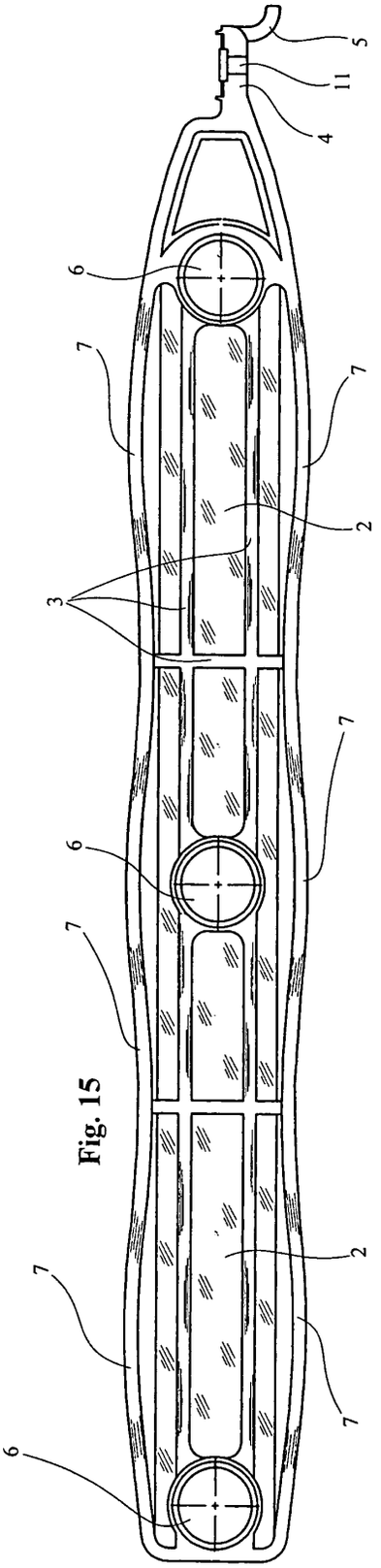


Fig. 15

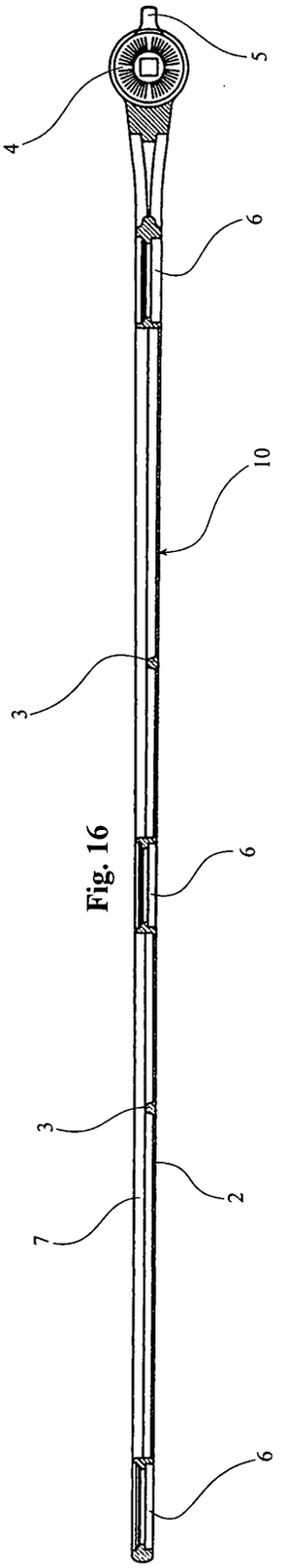


Fig. 16