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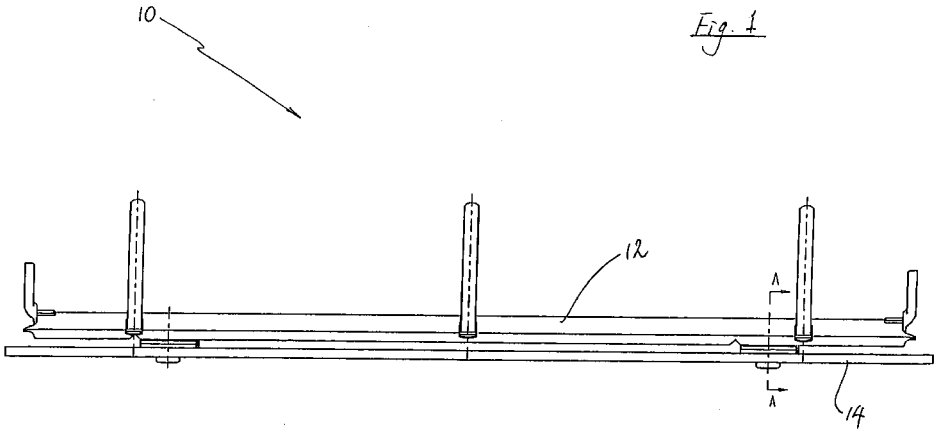
(54) A ring binder

(57) A ring binder (10) is disclosed as including a ring binder mechanism (12) and a cover (14), in which the cover (14) includes two securing tabs via which the ring binder mechanism (12) is releasably securable to the cover (14), in which the ring binder mechanism (12) includes an upper housing supporting a pair of pivotable plates to which a number of half-rings are attached, in which the plates are pivotably movable between a first position in which the half-rings are closed, and a second position in which the half-rings are open, and the tabs are releasable from the plates only when the plates are in the second position. A ring binder mechanism (12) releasably securable to a cover via tabs is also disclosed as including an upper housing supporting a pair of pivotable plates to which a number of half-rings are attached, in which the plates are pivotably movable between a first position in which the half-rings are closed, and a second position in which the half-rings are open, and the plates are adapted to be released from the tabs only when the plates are in the second position.

Fig. 1



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Description

[0001] This invention relates to a ring binder and, in particular, such a ring binder comprising a ring binder mechanism and an article, e.g. a cover, which are releasably securable to each other via securing means. This invention also relates to a ring binder mechanism as aforementioned.

[0002] US Patent No. 5,286,128 issued to Gillum discloses a shield for a ring metal as having arcuate band sections at the locations of the rings and intermediate sections therebetween, the intermediate sections having a straight segmental cross section having a lower overhead clearance between the shield and the hinged leaves than the band sections. This document also shows a method of attaching such a ring metal to a binder cover (see e.g. col. 3, lines 35-55 and Fig. 8). As the shield is secured to the steel spring clips by having the tabs sprung over the shield, a user may be hurt by the tabs when in use, and the overall aesthetic quality of the ring binder may also be adversely affected.

[0003] It is therefore an object of the present invention to provide a ring binder and a ring binder mechanism in which the aforesaid shortcomings are mitigated, or at least to provide a useful alternative to the public.

[0004] According to a first aspect of the present invention, there is provided a ring binder comprising a ring binder mechanism and a cover, wherein said cover comprises securing means via which said ring binder mechanism is releasably securable to said cover, wherein said ring binder mechanism comprises a substantially rigid upper structure supporting a pivotable lower structure to which a plurality of half-ring members are attached, wherein said lower structure is pivotably movable between a first position in which said half-ring members are closed, and a second position in which said half-ring members are open, and wherein said securing means is releasable from said lower structure only when said lower structure is in said second position.

[0005] According to a second aspect of the present invention, there is provided a ring binder mechanism releasably securable to an article via securing means, wherein said ring binder mechanism comprises a substantially rigid upper structure supporting a pivotable lower structure to which a plurality of half-ring members are attached, wherein said lower structure is pivotably movable between a first position in which said half-ring members are closed, and a second position in which said half-ring members are open, and wherein said lower structure is adapted to be released from said securing means only when said lower structure is in said second position.

[0006] An embodiment of the invention will now be described by way of an example only, and with reference to the accompanying drawings, in which:-

Fig. 1 is a side view of a ring binder according to the present invention;

Fig. 2 is a top view of the ring binder shown in Fig. 1;

Fig. 3 is a top perspective view of the ring binder shown in Fig. 1;

Fig. 4 is an exploded view of the ring binder shown in Fig. 1;

Fig. 5 is a bottom perspective view of the ring binder mechanism shown in Fig. 1;

Fig. 6 is a partially cut-off perspective view of the ring binder shown in Fig. 1, with the half-rings in the open position;

Fig. 7 is a transverse sectional view of the ring binder shown in Fig. 6;

Fig. 8 is a partially cut-off perspective view of the ring binder shown in Fig. 1, with the half-rings in the closed position;

Fig. 9 is a transverse exploded sectional view of the ring binder shown in Fig. 8;

Fig. 10 is a transverse sectional view of the ring binder shown in Fig. 8;

Fig. 11 is a side view of a tab used in the ring binder as shown in Fig. 1;

Fig. 12 is a front view of the tab shown in Fig. 11;

Fig. 13 is a top view of the tab shown in Fig. 11;

Fig. 14 is a top perspective view of the tab shown in Fig. 11;

Fig. 15 is a sectional view taken along line A-A of the ring binder shown in Fig. 1; and

Fig. 16A and Fig. 16B are bottom perspective views of the ring binder shown in Fig. 1, showing the ring binder mechanism in movement relative to the tab.

[0007] A ring binder according to the present invention is shown in Figs. 1 to 3 generally designated as 10. The ring binder 10 includes a ring binder mechanism 12 and a cover 14, which are releasably secured to each other in a manner to be discussed below. As shown in Fig. 2, the cover 14, which may be made of paper, cardboard or metal, includes a spine portion 16 with two adjoining flaps 18 (shown in dashed lines). For clarity purposes, the flaps 18 are not shown in other views.

[0008] As shown in Fig. 4, the ring binder mechanism

12 includes a substantially rigid upper housing 20 supporting a pair of plates 22. To each of the plates 22 are fixedly attached three half-rings 24. The plates 22 we aligned with each other such that the half-rings 24 may be closed to form three rings for retaining loose-leaf paper. The upper housing 20 supports the plates 22, and the half-rings 24 extend through notches 26, so that the plates 22 may be pivoted relative to each other to thereby close or open the half-rings 24. At each longitudinal end of the upper housing 20 is a lever 28 which may be pivoted to act on the plates 22, and thereby to open or close the half-rings 24.

[0009] The ring binder mechanism 12 is securable to the cover 14 via a pair of tabs 30, which are themselves fixedly secured to the cover 14 via rivets 32. As can be seen in Fig. 4, the cover 14 includes two holes 34 for alignment with holes 36 of the tabs 30, so that the rivets 32 may be received through the holes 34 and 36, and subsequently deformed to secure the tabs 30 to the cover 14.

[0010] As shown in Fig. 5, each of the plates 22 includes two elongate openings 38, and the two plates 22 are positioned relative to each other such that the two pairs of elongate openings 38 are aligned to form two substantially continuous elongate apertures.

[0011] In use, the plates 22 may be pivoted between a position in which the upper surfaces (i.e. the surfaces facing towards the upper housing 20) of the plates 22 subtend an angle of over 180° and in which the half-rings 24 are open (as shown Figs. 6 and 7), and a position in which the upper surfaces of the plates 22 subtend an angle of less than 180° and in which the half-rings 24 are closed (as shown in Figs. 8 to 10).

[0012] As shown in Figs. 6 and 7, the tab 30 includes a base 40 which abuts the cover 40, and a ledge 42 which is vertical to and at one end of the base 40, and extends towards the plates 22. When the plates 22 are in the position as shown in Figs. 6 and 7, the plates 22 stay clear of, and are above, the ledge 42, and the ring binder mechanism 12 is releasable from the tabs 30 in a manner to be discussed below. The tab 30 also includes two wing parts 44 (see Fig. 7) extending generally upwardly and outwardly from the base 40. These wing parts 44 are received between the lower surfaces (i.e. the surfaces facing away from the upper housing 20) of the plates 22 and the crimped parts 46 of the upper housing 20, so that the tab 30 is slidable relative to the ring binder mechanism 12, with the wing parts 44 in constant contact with both the upper housing 20 and the plates 22.

[0013] On the other hand, when the plates 22 are in the position as shown in Figs. 8, 9 and 10, the ledge 42 of the tab 30 extends through the substantially continuous elongate aperture formed by the two elongate openings 38 (of which only one is shown in Fig. 8). It can be seen that, in this position, the ring binder mechanism 12 cannot exhibit any movement relative to the tab 30, and the ring binder mechanism 12 is thus fixedly secured to the cover 14.

[0014] Figs. 11 to 14 show various views of the tab 30. It can be seen that on each of the wing parts 44 of the tab 30 is a hole 48, which assist proper engagement of the tab 30 with the ring binder mechanism 12. In particular, as shown in Fig. 15, the crimped parts 46 of the upper housing 20 includes protrusions 50 (only one is shown in the circled enlarged view of Fig. 15), each for being received within a respective hole 48 of the wing parts 44 of the tab 30. As there are corresponding protrusions 50 on both lateral sides of the upper housing 20, the engagement of the tab 30 with the ring binder mechanism 12 can be enhanced.

[0015] Figs. 16A and 16B show the manner in which the ring binder mechanism 12 is engaged with, or disengaged from, the tab 30, and thus the cover 14. In order to allow the ring binder mechanism 12 and the tab 30 to be engageable with, or disengageable from, each other, the plates 22 must be in the position in which the half-rings 24 are open. As shown in Figs. 5, 16A and 16B, the upper housing 20 includes two recesses 52, each for receiving a wing part 44 of the tab 30. In this position, and as shown in Fig. 16A, the tab 30 may slide relative to the ring binder mechanism 12. During the sliding movement, the wing parts 44 of the tab 30 are in contact with both the plates 22 and the crimped parts 46 of the upper housing 20. However, due to the existence of two protruding parts 54 of the crimped parts 46 of the upper housing 20, the extent of movement of the tab 30 relative to the ring binder mechanism 12 is limited, and the tab 30 can only move until it reaches the position as shown in Fig. 16B. In this position, the protrusions 50 of the upper housing 20 are received in the respective holes 48 of the wing parts 44 of the tab 30, and the ledge 42 of the tab 30 is situated below the substantially continuous elongate aperture formed by the two elongate openings 38. The plates 22 may in this position be pivoted to close the half-rings 24, whereby the ledge 42 of the tab 30 extends through the substantially continuous elongate aperture formed by the two elongate openings 38, to thereby lock the ring binder mechanism 12 against any movement relative to the tab 30, and thus the cover 14, with which the tab 30 is fixedly engaged.

[0016] Although only one tab 30 is discussed above and shown in most of the views, it should be understood that, as shown in Figs. 1 and 4, two tabs 30 are used in this embodiment of the present invention. It should also be noted that the above only describes an example whereby the present invention may be carried out, and that various modifications and/or alterations may be made thereto without departing from the spirit of the invention.

Claims

1. A ring binder comprising a ring binder mechanism and a cover, wherein said cover comprises securing

means via which said ring binder mechanism is releasably securable to said cover, wherein said ring binder mechanism comprises a substantially rigid upper structure supporting a pivotable lower structure to which a plurality of half-ring members are attached, wherein said lower structure is pivotably movable between a first position in which said half-ring members are closed, and a second position in which said half-ring members are open, and wherein said securing means is releasable from said lower structure only when said lower structure is in said second position.

2. A ring binder according to Claim 1 wherein said securing means is fixedly engaged with said cover.

3. A ring binder according to Claim 2 wherein said securing means is fixedly engaged with said cover via riveting means.

4. A ring binder according to any of the preceding claims wherein said securing means comprises at least two securing members.

5. A ring binder according to Claim 4 wherein said securing member comprises a base with a hole through which at least part of said riveting means is receivable for engagement with said securing member.

6. A ring binder according to Claim 4 or 5 wherein when said ring binder mechanism is secured to said securing member, said securing member is in contact with both said upper structure and said lower structure.

7. A ring binder according to any one of Claims 4 to 6 wherein said securing member comprises at least one opening for receiving one opening for receiving a protrusion of said upper structure.

8. A ring binder according to Claim 7 wherein said securing member comprises two openings each for receiving a respective protrusion of said upper structure.

9. A ring binder according to any of the preceding claims wherein said securing means is slidably movable relative to said ring binder mechanism for engagement with and/or disengagement from said ring binder mechanism.

10. A ring binder according to Claim 9 wherein said securing means is in contact with both said upper structure and said lower structure when said securing means is in sliding movement relative to said ring binder mechanism.

11. A ring binder according to Claim 9 or 10 wherein said ring binder mechanism comprises stopping means to limit the sliding movement of said securing means relative to said ring binder mechanism.

12. A ring binder according to Claim 11 wherein said upper structure comprises said stopping means.

13. A ring binder mechanism releasably securable to an article via securing means, wherein said ring binder mechanism comprises a substantially rigid upper structure supporting a pivotable lower structure to which a plurality of half-ring members are attached, wherein said lower structure is pivotably movable between a first position in which said half-ring members are closed, and a second position in which said half-ring members are open, and wherein said lower structure is adapted to be released from said securing means only when said lower structure is in said second position.

14. A mechanism according to Claim 13 wherein when said ring binder mechanism is secured to said securing means, said securing means is in contact with both said upper structure and said lower structure.

15. A mechanism according to Claim 13 or 14 wherein said upper structure comprises at least one protrusion receivable within an opening of said securing means.

16. A mechanism according to Claim 15 wherein said upper structure comprises a plurality of protrusions each receivable within a respective opening of said securing means.

17. A mechanism according to any of the preceding claims wherein said ring binder mechanism is slidably movable relative to said securing means for engagement with and/or disengagement from said securing means.

18. A mechanism according to Claim 17 wherein said upper structure and said lower structure are in contact with said securing means when said securing means is in sliding movement relative to said ring binder mechanism.

19. A mechanism according to Claim 17 or 18 wherein said ring binder mechanism comprises stopping means to limit the sliding movement of said securing means relative to said ring binder mechanism.

20. A mechanism according to Claim 19 wherein said upper structure comprises said stopping means.

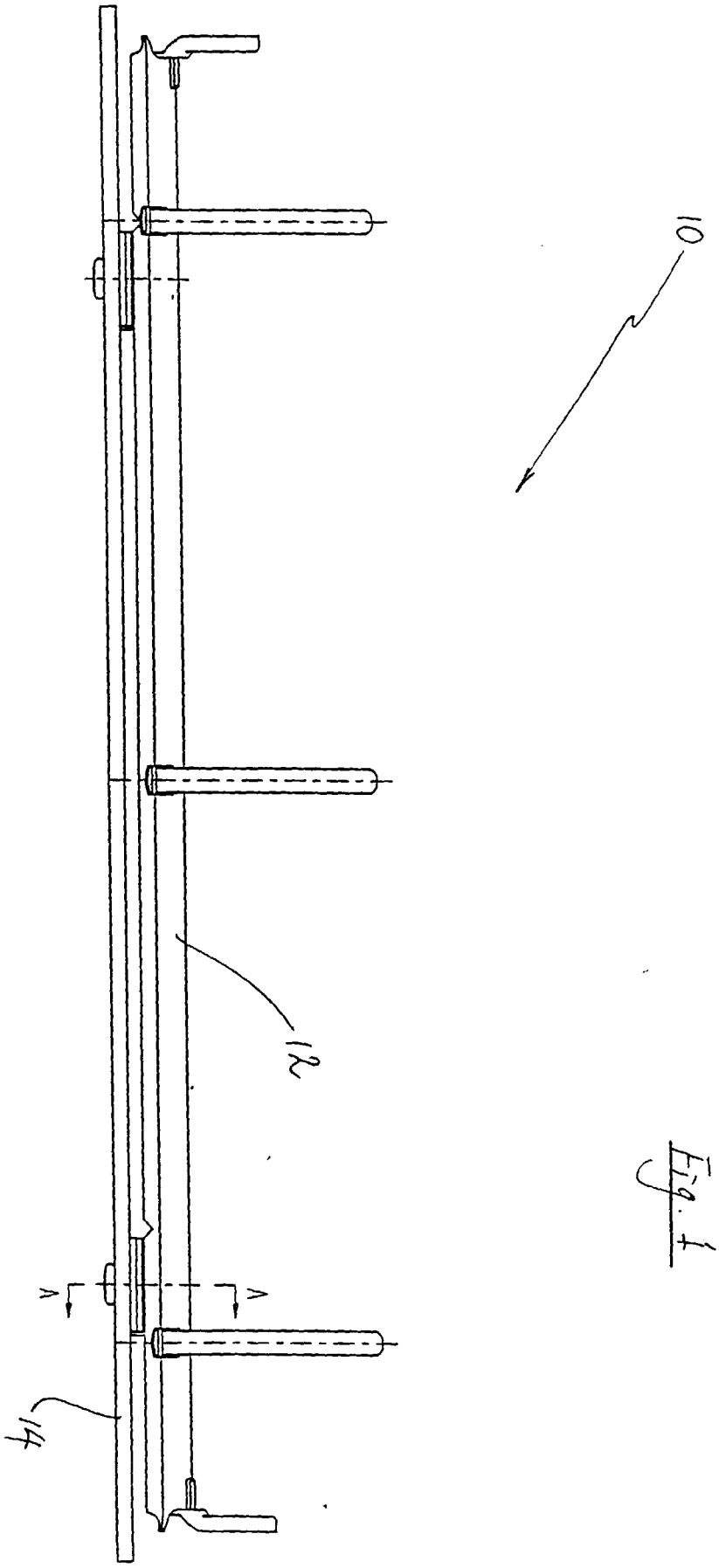

Fig. 1

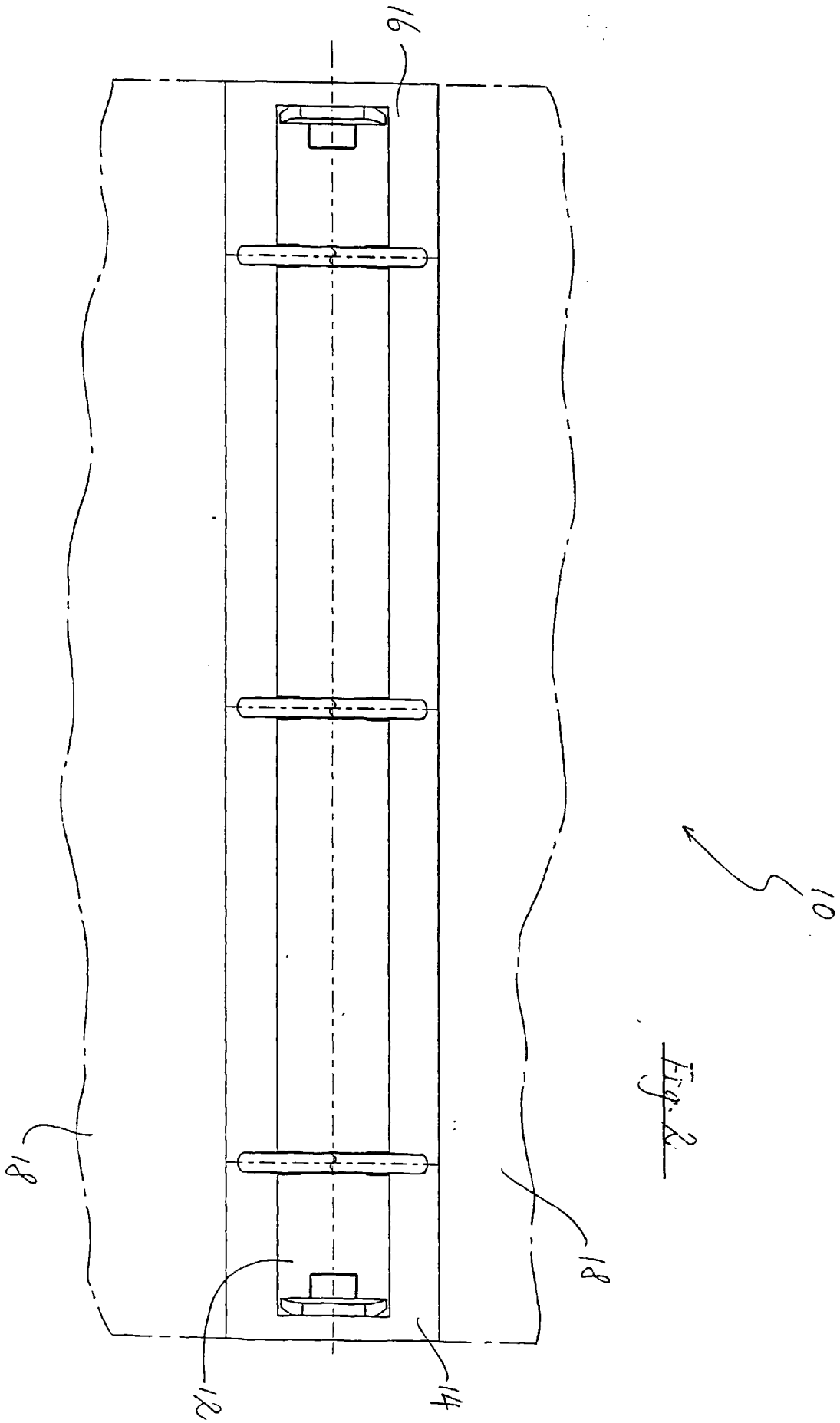

Fig. 2

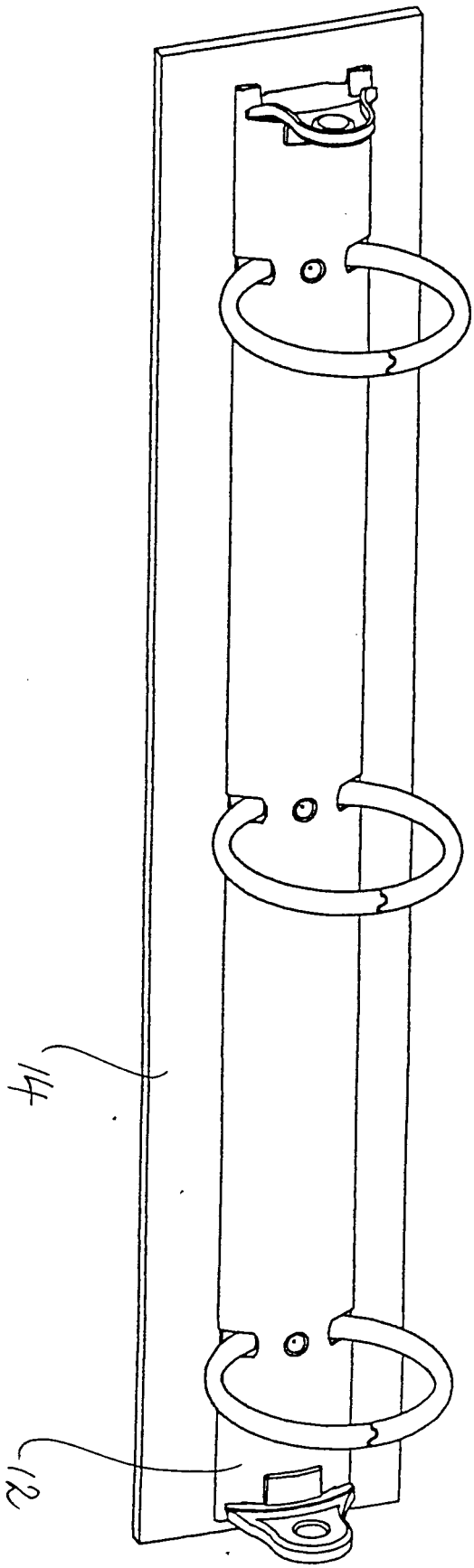

Fig. 3

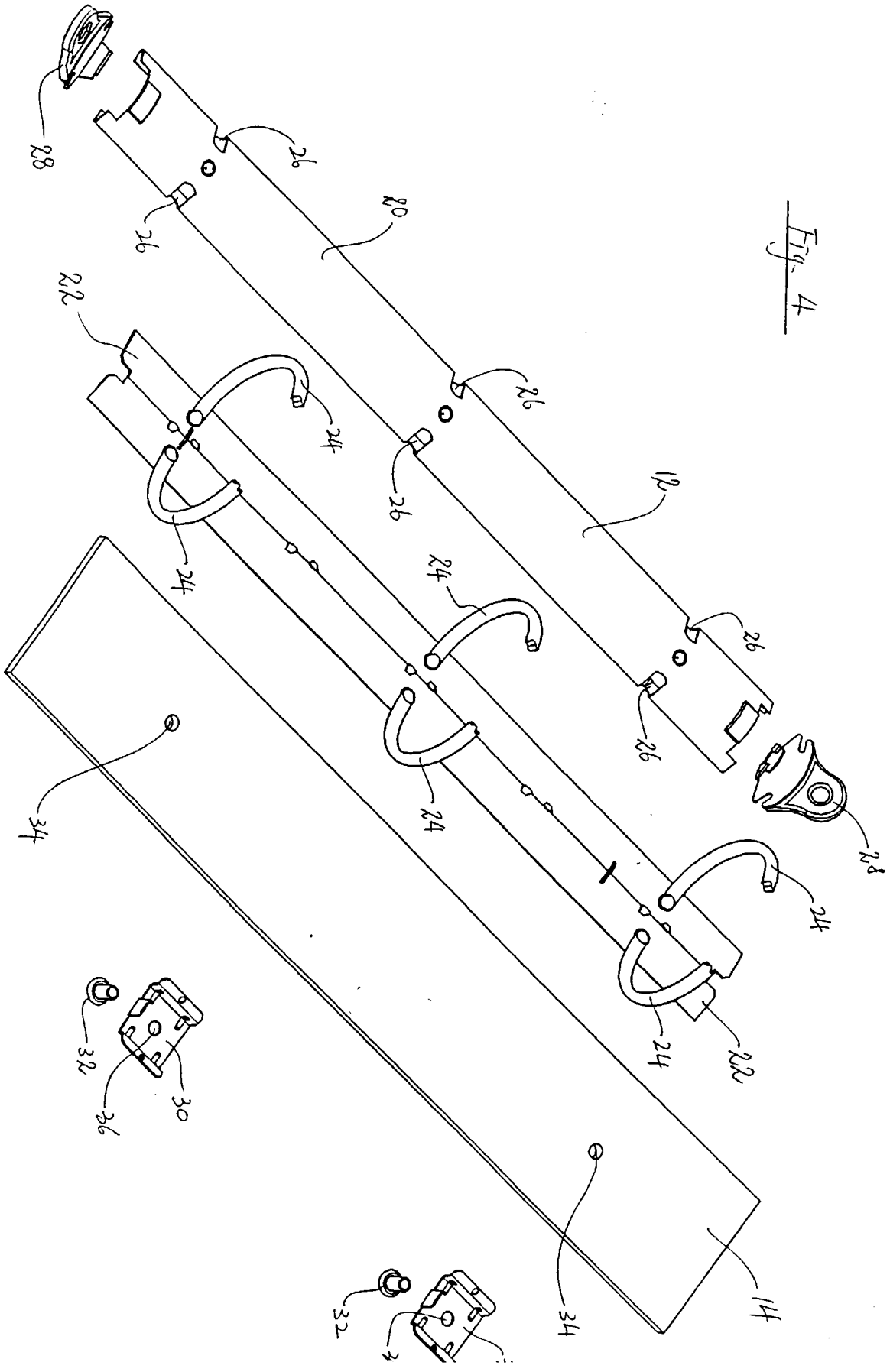

Fig. 4

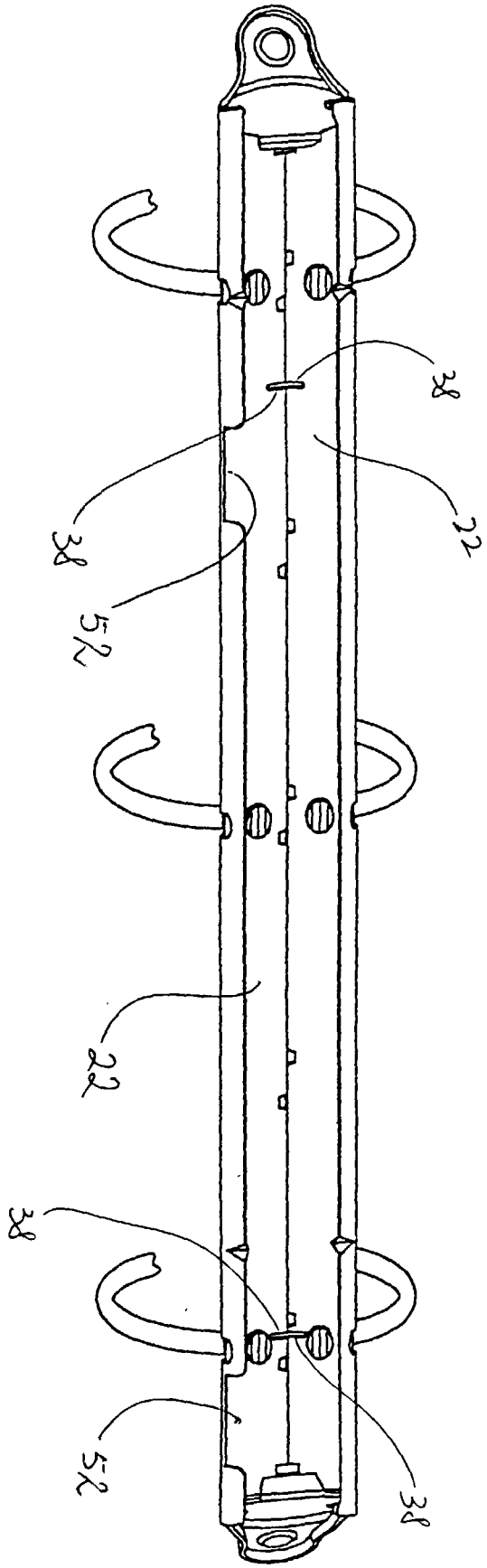

Fig. 5

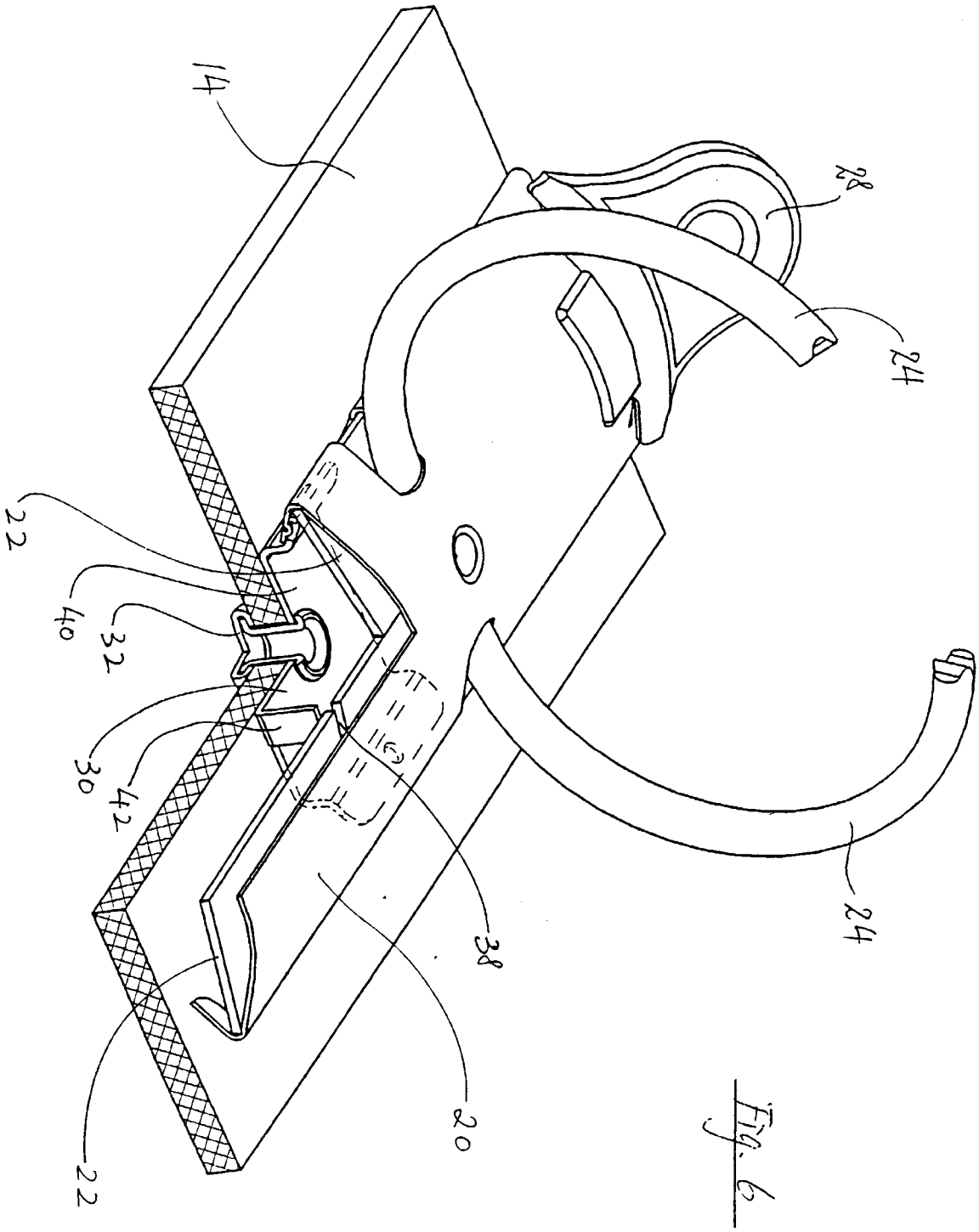

Fig. 6

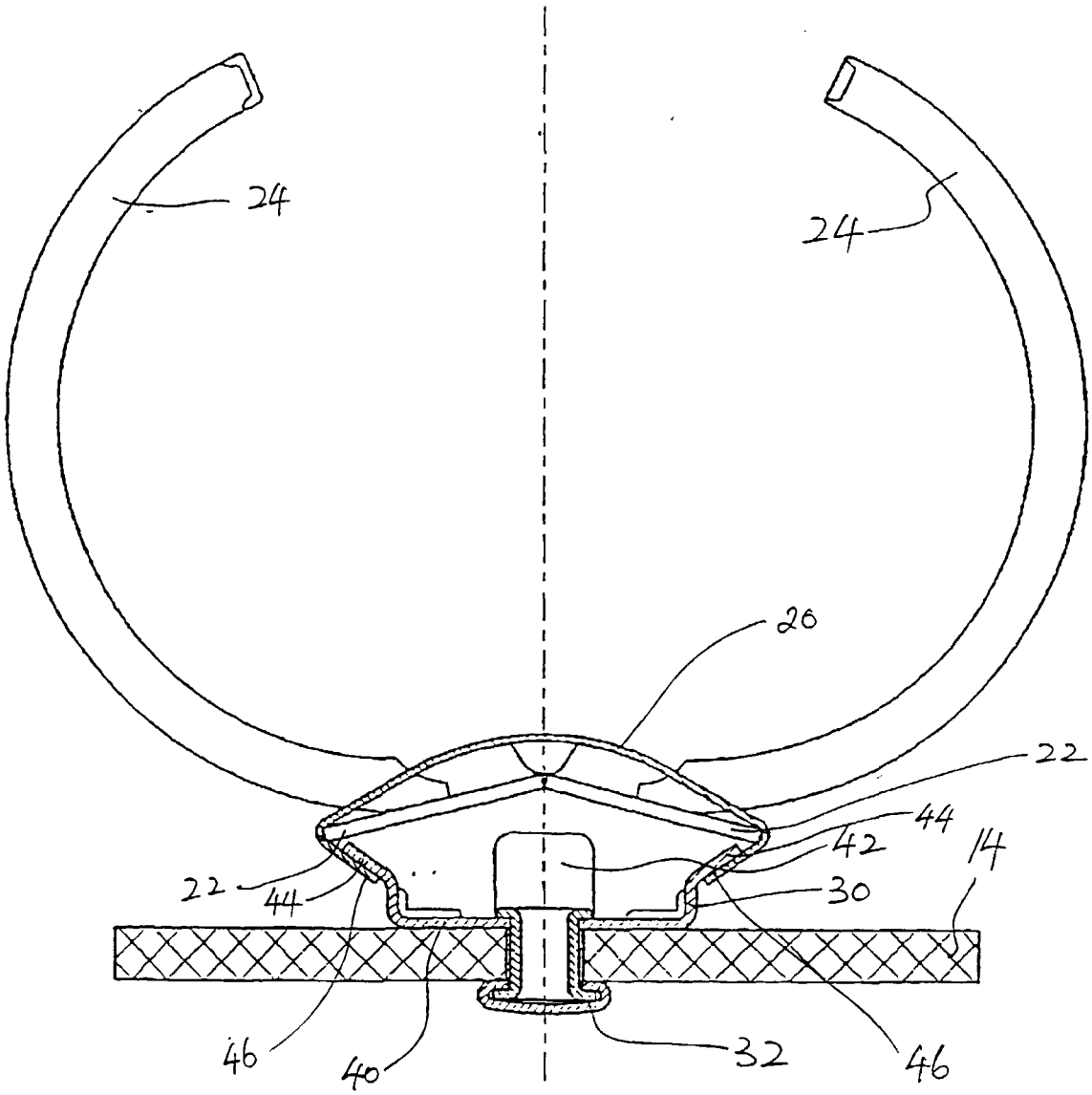

Fig. 7

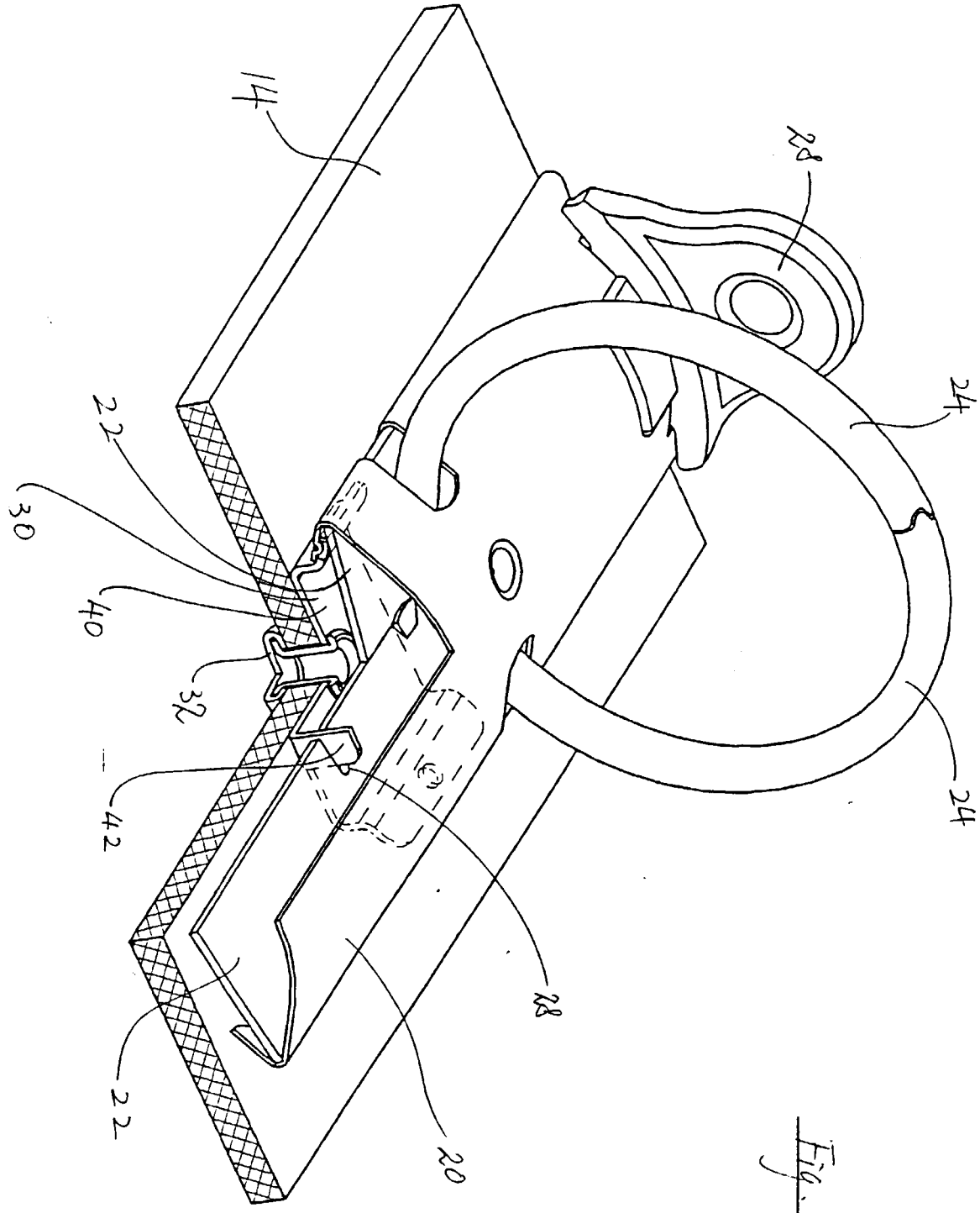

Fig. 8

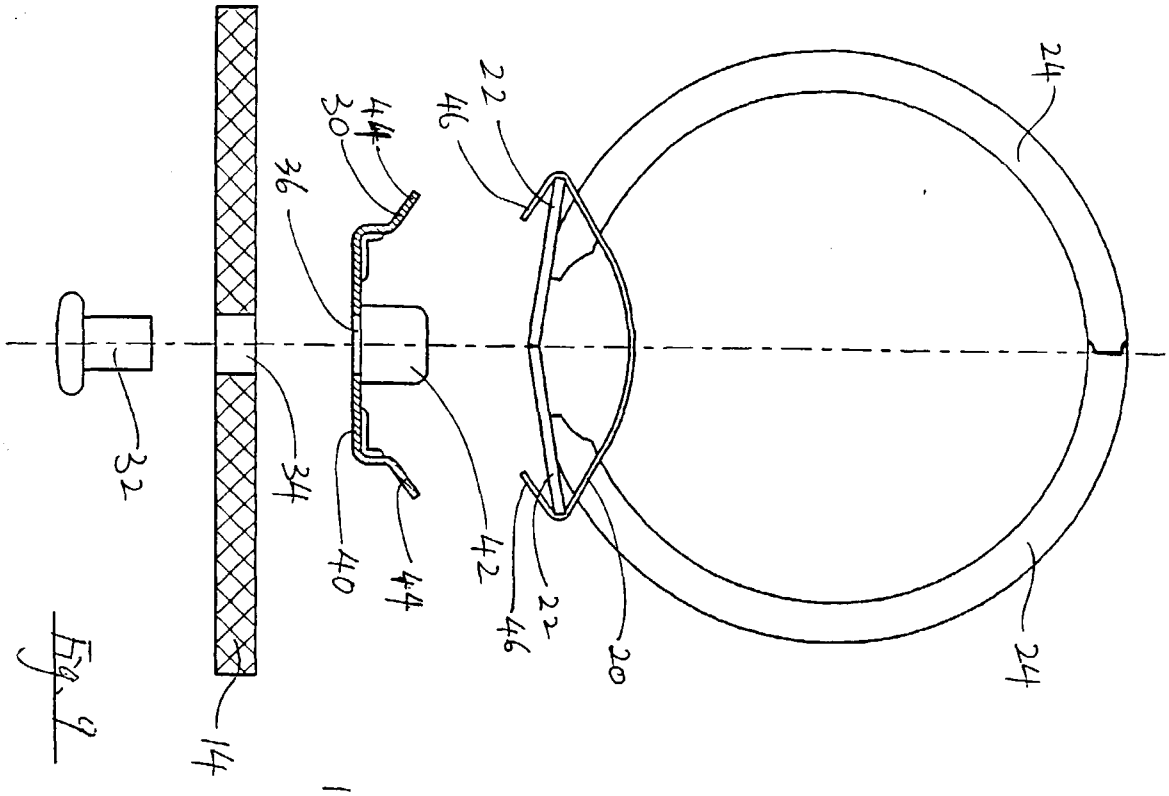
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Fig. 9

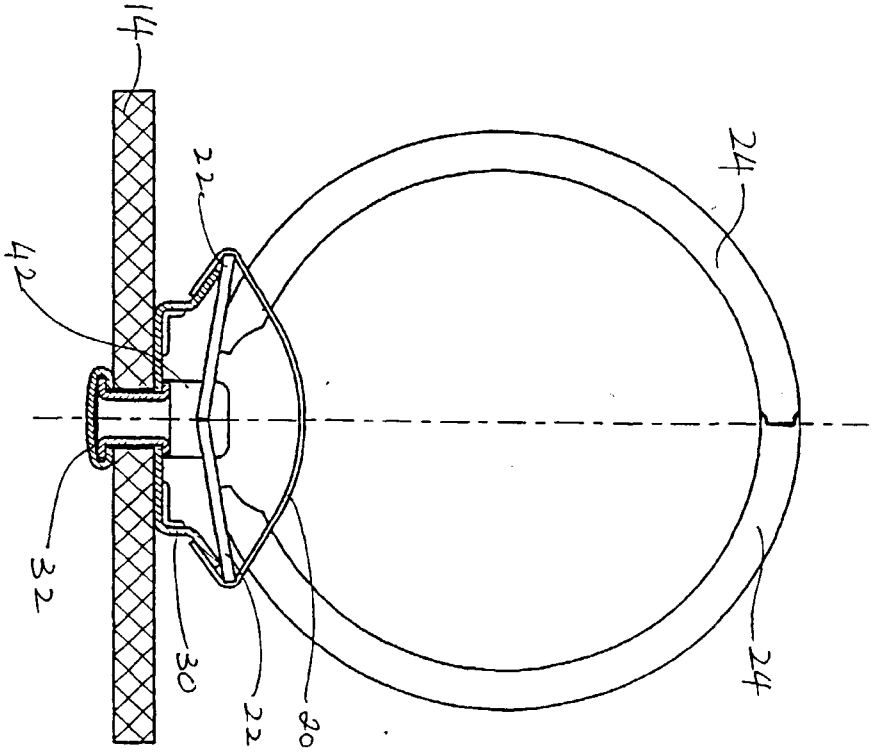
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Fig. 10

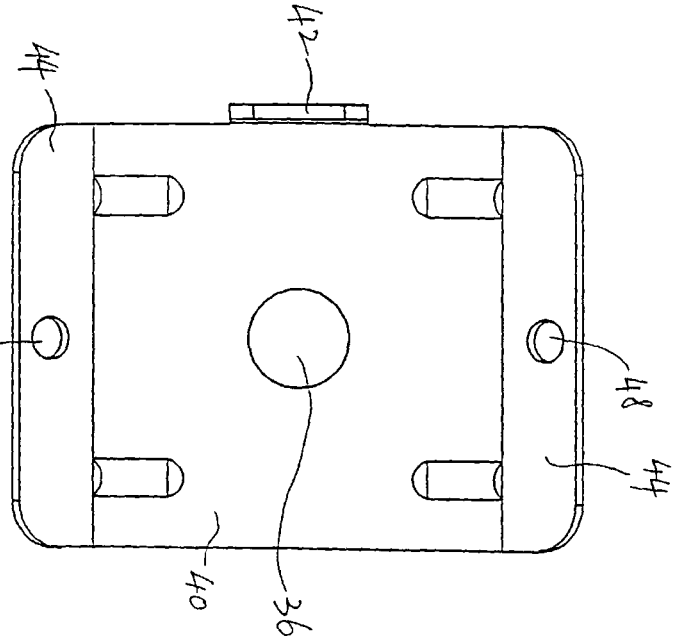

Fig. 13

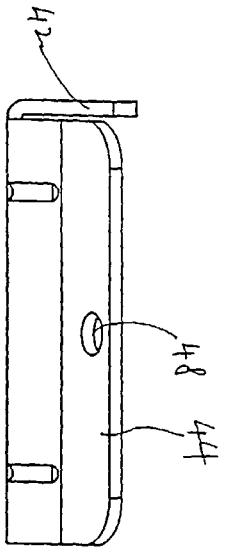

Fig. 11

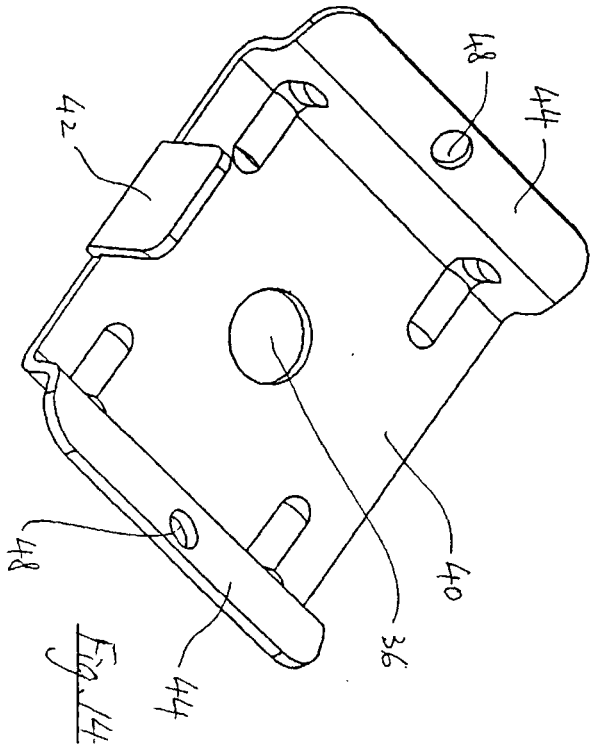

Fig. 14

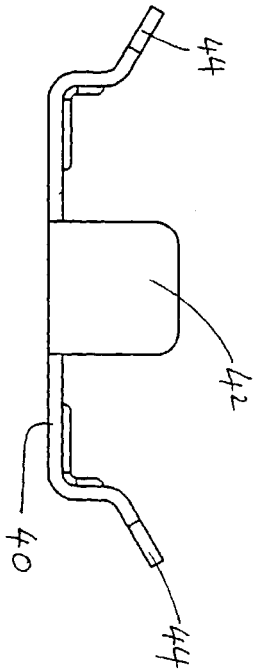

Fig. 12

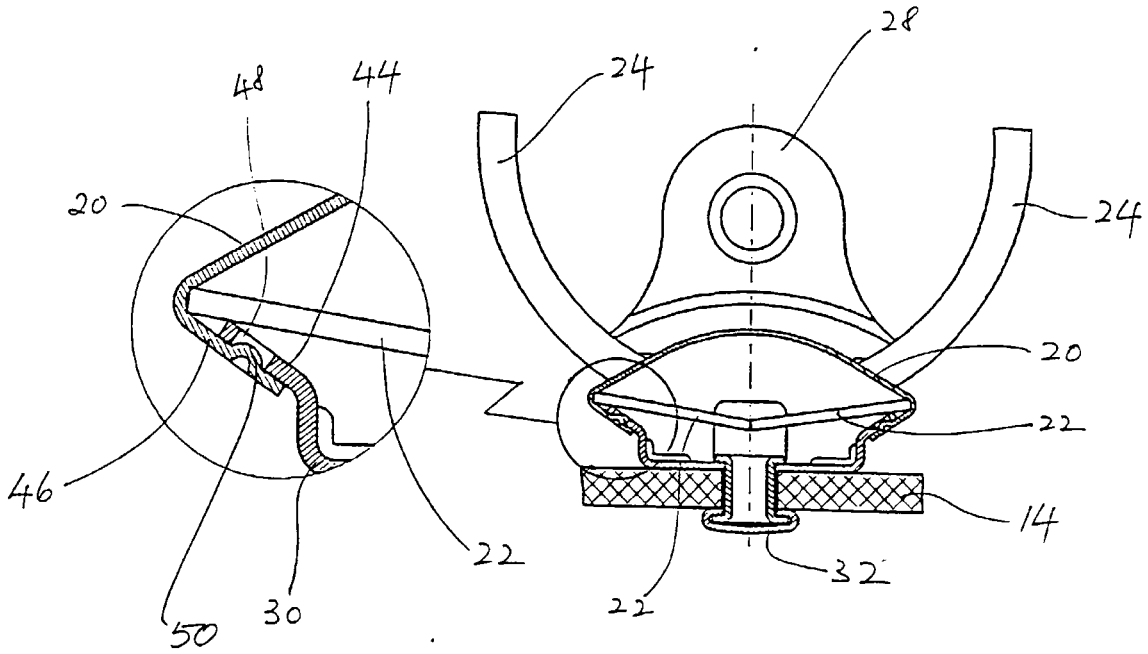

Fig. 15

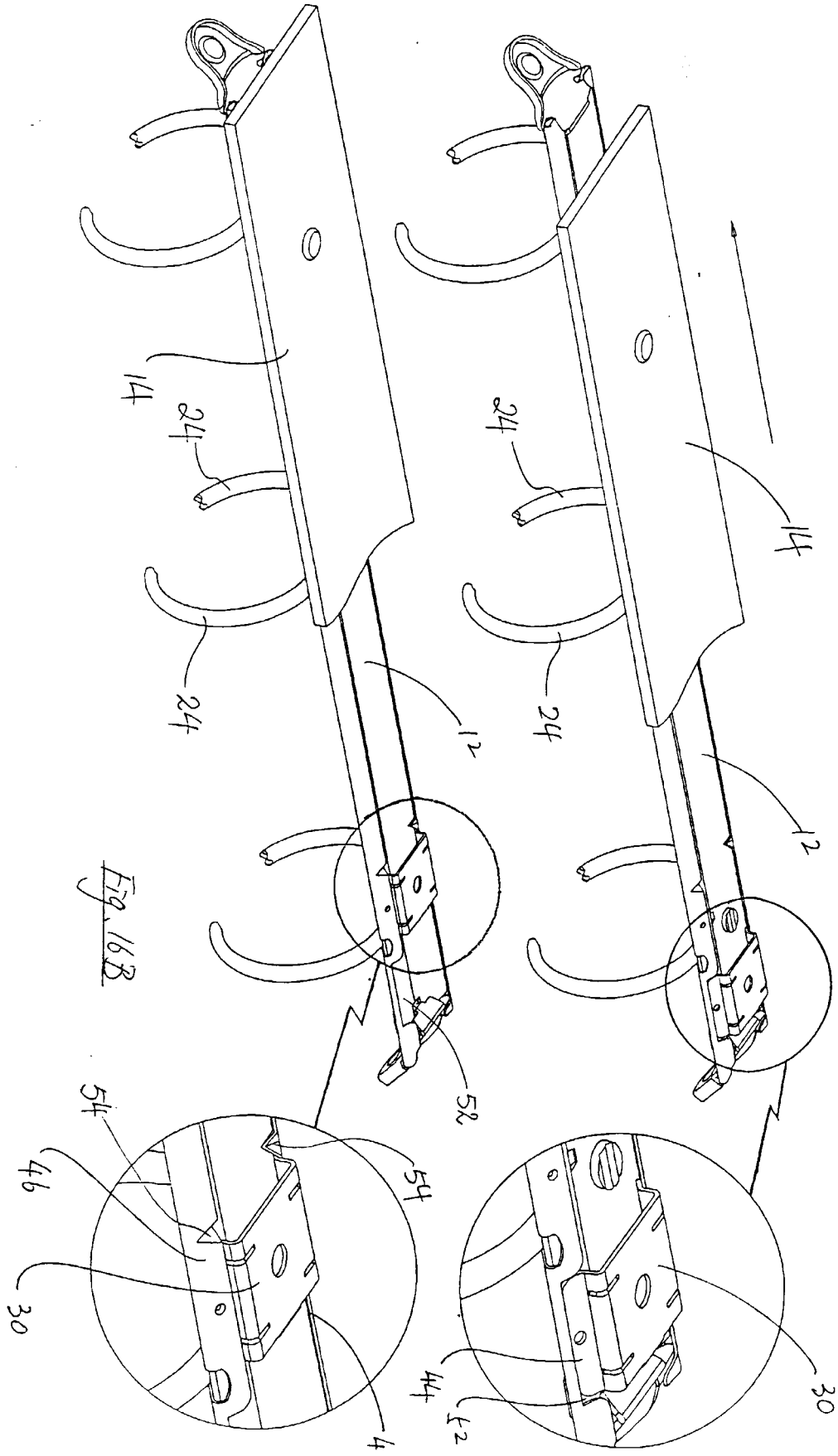

Fig. 16A

Fig. 16B

European Patent Office

EUROPEAN SEARCH REPORT

Application Number
EP 99 30 2055

DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.Cl.7)
A	US 5 348 412 A (FULLER) 20 September 1994 (1994-09-20) * column 2, line 4 - column 3, line 5; figures 1-7 *	1,13	B42F13/00
A	EP 0 185 634 A (ESSELTE ALMANACKSFORLAG) 25 June 1986 (1986-06-25) * page 2, line 33 - page 7, line 26; figures 1-5 *	1,13	
A	EP 0 641 675 A (ASOMA FASHION) 8 March 1995 (1995-03-08) * column 6, line 18 - column 9, line 18; figures 1-4 *	1,13	
			TECHNICAL FIELDS SEARCHED (Int.Cl.7) B42F

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
THE HAGUE	4 October 1999	Evans, A

CATEGORY OF CITED DOCUMENTS

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04-10-1999

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