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(54) **A ring binder**

Ringbuchmechanik

Classeur à anneaux

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(56) References cited:
**EP-A- 0 226 297 FR-A- 1 059 589
GB-A- 105 206 US-A- 5 160 209**

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Description

[0001] This invention relates to a ring binder, and in particular a ring binder adapted to be secured by at least one securing means to a cover.

[0002] Conventionally, a ring binder is securable to a cover by at least one rivet having a head portion for engagement with the cover and a tail portion which is deformable to engage a recess in the upper part of the ring binder.

[0003] European Patent Document No. 0 226 297 A3 discloses a binder having a non-metallic cover and a binding assembly for retaining sheets. The assembly is attached to the inner surface of the cover by a plurality of prongs that are each stamped or punched out of a metal attachment plate. Each prong is generally triangular in shape and is curved throughout its length and terminates in a sharpened tip. The metal attachment plate may comprise a portion of a hinge assembly, or may be a binding plate attached to the rear face of a toggled binder mechanism. Figs. 6 and 7 of this document shows a three-ring binder mechanism incorporating a rear binding plate which extends along substantially the entire length of the binder mechanism. The rear binding plate has prongs which are driven into a cover during assembly, in order to secure the ring binder mechanism to the cover.

[0004] US Patent No. 5,160,209 discloses a fastener for fastening a paper retaining binder mechanism to an inner surface of a binder while remaining entirely concealed from an outer surface of the binder. The fastener includes an anchor plate and a post which extends directly away from the anchor plate. While the post engages with a top cover of the paper retaining binder mechanism, the anchor plate includes prongs which are driven into a cover. By way of such an arrangement, the paper retaining binder mechanism may be secured to the cover.

[0005] A disadvantage associated with such arrangements is that it is necessary to manufacture and provide the assemblers with both the ring binders and correspondingly shaped and sized rivets suitable for securing the ring binder to the cover. Rivets of a wrong size or shape may be erroneously provided to the assemblers. The assembling process is also laborious and prone to error. In particular, if the riveting action is not properly carried out, the ring binder and/or the cover may be damaged.

[0006] It is an object of the present invention to provide a ring binder in which the aforesaid shortcomings are obviated.

[0007] According to the present invention, there is provided a ring binder adapted to be secured to a base member, which ring binder comprises a substantially rigid upper structure supporting a pivotable lower structure to which a plurality of ring members are mounted, characterized in that said ring binder comprises at least one securing means integrally formed with said upper

structure and adapted to secure said ring binder to said base member.

[0008] The upper structure may conveniently slope downward at each end.

[0009] The securing means may advantageously be deformable to secure the ring binder to the base member.

[0010] Conveniently, the securing means may comprise a plurality of deformable securing members, each comprising a pointed element pointing downward from the upper structure.

[0011] Advantageously, the pointed elements may depend downward from the periphery of an opening in the upper structure and point outward from the central longitudinal axis of the opening, which may be substantially circular or hexagonal.

[0012] The invention will now be described by way of example with reference to the accompanying drawings wherein:-

Fig. 1 shows a top perspective view of a first embodiment of a ring binder according to the present invention;

Fig. 2 shows a bottom perspective view of the ring binder shown in Fig. 1;

Fig. 3 shows a top view of the ring binder shown in Fig. 1 with the rings removed;

Fig. 4 shows the sectional view along the line A-A' of the ring binder shown in Fig. 3;

Fig. 5 shows the sectional view along the line A-A" of the ring binder shown in Fig. 3 with rings and as secured to a base member;

Fig. 6 shows a partial bottom perspective view of the upper structure of the ring binder shown in Fig. 1;

Fig. 7 shows a top perspective view of a second embodiment of a ring binder according to the present invention;

Fig. 8 shows a bottom perspective view of the ring binder shown in Fig. 7;

Fig. 9 shows an end view of the ring binder shown in Fig. 7;

Fig. 10 shows a partial bottom perspective view of the upper structure of the ring binder shown in Fig. 7;

Fig. 11 shows a top view of the ring binder shown in Fig. 7 with the rings removed;

Fig. 12 shows a sectional view along the line B-B of the ring binder shown in Fig. 11 with rings and as secured to a base member;

Fig. 13 shows a top perspective view of a third embodiment of a ring binder according to the present invention;

Fig. 14 shows a bottom perspective view of the ring binder shown in Fig. 13;

Fig. 15 shows a top view of the ring binder shown in Fig. 13 with the rings removed;

Fig. 16 shows a sectional view along the line C-C of the ring binder shown in Fig. 15;

Fig. 17 shows a partial bottom perspective view of the upper structure of the ring binder shown in Fig. 13; and

Fig. 18 shows a sectional view along the line D-D of the ring binder shown in Fig. 15 with rings and as secured to a base member.

[0013] As shown in Figs. 1 and 2, a ring binder according to the present invention generally designated as 100 includes a substantially rigid upper plate member 102 supporting a pair of pivotable lower plates 104_a and 104_b. The lower plates 104_a and 104_b are pivotably movable relative to each other to enable rings 106 to be selectively opened or closed in the conventional manner.

[0014] At each end of the ring binder 100 are two sets of claws 108. As shown more clearly in Figs. 3 to 6, the claws 108 are integrally formed with the upper plate member 102. The claws 108 are pushed out from the upper plate member 102 and apertures 110, shown in Fig. 3 as substantially hexagonal, are formed. The claws 108 extend downward from the upper plate member 102 and outward from the longitudinal axis of the aperture 110. The claws 108 are shown in Fig. 5 as pressed into a, e.g., cardboard cover 112. As the claws 108 are splayed out in the pressing process, the connection between the ring binder 100 and the cover 112 is further enhanced.

[0015] Turning to Figs. 7 and 8, a second embodiment of a ring binder according to the present invention is shown as generally designated as 200. Similar to the first embodiment described above, the ring binder 200 includes a substantially rigid upper plate member 202 supporting a pair of pivotable lower plates 204_a and 204_b. The lower plates 204_a and 204_b are pivotably movable relative to each other to enable rings 206 to be selectively opened or closed in the conventional manner.

[0016] At each end of the ring binder 200 are two sets of claws 208. As shown more clearly in Figs. 9 to 12, the

claws 208 are integrally formed with the upper plate member 202. The claws 208 are pushed out from the upper plate member 202 and apertures 210, shown in Fig. 11 as substantially circular, are formed. The claws 208 extend downward from the upper plate member 202 and outward from the longitudinal axis of the aperture 210. The claws 208 are shown in Fig. 12 as pressed into a, e.g., cardboard cover 212. As the claws 208 are splayed out in the pressing process, the connection between the ring binder 200 and the cover 212 is further enhanced.

[0017] Figs. 13 and 14 show a third embodiment of a ring binder according to the present invention generally designated as 300. Similar to the two embodiments described above, the ring binder 300 includes a substantially rigid upper plate member 302 supporting a pair of pivotable lower plates 304_a and 304_b. The lower plates 304_a and 304_b are pivotably movable relative to each other to enable rings 306 to be selectively opened or closed in the conventional manner.

[0018] At each end of the ring binder 300 are two sets of claws 308. As shown more clearly in Figs. 15 to 18, the claws 308 are integrally formed with the upper plate member 302. The claws 308 are pushed out from the upper plate member 302 and apertures 310 are formed. The claws 308 extend downward from the upper plate member 302 and outward from the longitudinal axis of the aperture 310. The claws 308 are shown in Fig. 18 as pressed into a, e.g., cardboard cover 312. As the claws 308 are splayed out in the pressing process, the connection between the ring binder 300 and the cover 312 is further enhanced.

[0019] It is clear from the foregoing that this invention dispenses with the use of any rivet, which necessitates a separate riveting step in the assembling process. The existence of rivets may also hurt workers and/or users. The absence of any rivet on the outer surface of the cover also helps improve the appearance of the cover. It is also found that such an arrangement can withstand a pulling force of 80 lbs. before the ring binder is detached from the cover.

[0020] It should be understood that the above only illustrates, by way of examples, ways in which this invention may be performed and that modifications may be made thereto without departing from the scope of the invention as defined in the appended claims. For example, each end of the ring binder may comprise one or three sets of claws, as different circumstances may require.

Claims

1. A ring binder (100, 200, 300) adapted to be secured to a base member (112, 212, 312), which ring binder (100, 200, 300) comprises a substantially rigid upper structure (102, 202, 302) supporting a pivotable lower structure (104_a, 104_b, 204_a, 204_b, 304_a, 304_b) to which a plurality of ring members

(106, 206, 306) are mounted, characterized in that said ring binder (100, 200, 300) comprises at least one securing means (108, 208, 308) integrally formed with said upper structure (102, 202, 302) and adapted to secure said ring binder (100, 200, 300) to said base member (112, 212, 312).

2. A ring binder according to Claim 1 further characterized in that the upper structure (102, 202, 302) slopes downward at each end.

3. A ring binder according to Claim 1 or 2 further characterized in that the securing means (108, 208, 308) is deformable to secure the ring binder (100, 200, 300) to the base member (112, 212, 312).

4. A ring binder according to any of the preceding claims further characterized in that the securing means (108, 208, 308) comprises a plurality of deformable securing members (108, 208, 308).

5. A ring binder according to Claim 4 further characterized in that the securing member (108, 208, 308) comprises a pointed element (108, 208, 308) pointing downward from the upper structure (102, 202, 302).

6. A ring binder according to Claim 5 further characterized in that the pointed elements (108, 208, 308) depend downward from the periphery of an opening (110, 210, 310) in the upper structure (102, 202, 302).

7. A ring binder according to Claim 6 further characterized in that the pointed elements (108, 208, 308) point outward from the central longitudinal axis of the opening (110, 210, 310).

8. A ring binder according to Claim 6 or 7 further characterized in that the opening (110, 210, 310) is substantially circular.

9. A ring binder according to Claim 6 or 7 further characterized in that the opening (110, 210, 310) is substantially hexagonal.

Patentansprüche

1. Ein Ringordner (100, 200, 300), der an einem Basiselement (112, 212, 312) sicherbar ist, wobei der Ringordner (100, 200, 300) ein im wesentlichen starres Oberteil (102, 202, 302) aufweist, das ein drehbares Unterteil (104a, 104b, 204a, 204b, 304a, 304b) trägt, an dem mehrere Ringelemente (106, 206, 306) angebracht sind, dadurch gekennzeichnet, daß besagter Ringordner (100, 200, 300) wenigstens eine Sicherungseinrichtung (108, 208, 308) umfaßt, die einteilig mit dem Oberteil (102,

202, 302) ausgebildet und gestaltet ist, um besagten Ringordner (100, 200, 300) an dem Basiselement (112, 212, 312) zu sichern.

2. Ein Ringordner nach Anspruch 1, ferner dadurch gekennzeichnet, daß das Oberteil (102, 202, 302) sich an jedem Ende nach unten neigt.

3. Ein Ringordner nach Anspruch 1 oder 2, ferner dadurch gekennzeichnet, daß die Sicherungseinrichtung (108, 208, 308) zum Sichern des Ringordners (100, 200, 300) an dem Basiselement (112, 212, 312) verformbar ist.

4. Ein Ringordner nach irgendeinem der vorangehenden Ansprüche, ferner dadurch gekennzeichnet, daß die Sicherungseinrichtung (108, 208, 308) mehrere verformbare Sicherungselemente (108, 208, 308) umfaßt.

5. Ein Ringordner nach Anspruch 4, ferner dadurch gekennzeichnet, daß die Sicherungseinrichtung (108, 208, 308) ein spitzes Element (108, 208, 308) umfaßt, das von dem Oberteil (102, 202, 302) nach unten zeigt.

6. Ein Ringordner nach Anspruch 5, ferner dadurch gekennzeichnet, daß die spitzen Elemente (108, 208, 308) von dem Rand einer Öffnung (110, 210, 310) in dem Oberteil (102, 202, 302) nach unten herabhängen.

7. Ein Ringordner nach Anspruch 6, ferner dadurch gekennzeichnet, daß die spitzen Elemente (108, 208, 308) von der zentralen Längsachse der Öffnung (110, 210, 310) nach außen zeigen.

8. Ein Ringordner nach Anspruch 6 oder 7, ferner dadurch gekennzeichnet, daß die Öffnung (110, 210, 310) im wesentlichen kreisförmig ist.

9. Ein Ringordner nach Anspruch 6 oder 7, ferner dadurch gekennzeichnet, daß die Öffnung (110, 210, 310) im wesentlichen hexagonal ist.

Revendications

1. Reliure à anneaux (100, 200, 300) destinée à être fixée à un organe de base (112, 212, 312), la reliure à anneaux (100, 200, 300) comprenant une structure supérieure pratiquement rigide (102, 202, 302) qui supporte une structure inférieure pivotante (104a, 104b, 204a, 204b, 304a, 304b) sur laquelle sont montés plusieurs organes d'anneau (106, 206, 306), caractérisée en ce que la reliure à anneaux (100, 200, 300) comprend au moins un dispositif de fixation (108, 208, 308) formé afin qu'il soit solidaire de la structure supérieure (102, 202, 302) et des-

tiné a fixer la reliure à anneaux (100, 200, 300) à l'organe de base (112, 212, 312).

2. Reliure à anneaux selon la revendication 1, caractérisée en ce que la structure supérieure (102, 202, 302) est inclinée vers le bas à chaque extrémité. 5
3. Reliure à anneaux selon la revendication 1 ou 2, caractérisée en outre en ce que le dispositif de fixation (108, 208, 308) est déformable pour la fixation de la reliure à anneaux (100, 200, 300) à l'organe de base (112, 212, 312). 10
4. Reliure à anneaux selon l'une quelconque des revendications précédentes, caractérisée en outre en ce que le dispositif de fixation (108, 208, 308) comprend plusieurs organes déformables de fixation (108, 208, 308). 15
5. Reliure à anneaux selon la revendication 4, caractérisée en outre en ce que l'organe de fixation (108, 208, 308) comprend un élément pointu (108, 208, 308) qui pointe vers le bas sous la structure supérieure (102, 202, 302). 20
6. Reliure à anneaux selon la revendication 5, caractérisée en outre en ce que les éléments pointus (108, 208, 308) dépassent vers le bas sous la périphérie d'une ouverture (110, 210, 310) formée dans la structure supérieure (102, 202, 302). 25 30
7. Reliure à anneaux selon la revendication 6, caractérisée en outre en ce que les éléments pointus (108, 208, 308) pointent vers l'extérieur depuis l'axe longitudinal central de l'ouverture (110, 210, 310). 35
8. Reliure à anneaux selon la revendication 6 ou 7, caractérisée en outre en ce que l'ouverture (110, 210, 310) est pratiquement circulaire. 40
9. Reliure à anneaux selon la revendication 6 ou 7, caractérisée en outre en ce que l'ouverture (110, 210, 310) est pratiquement hexagonale. 45

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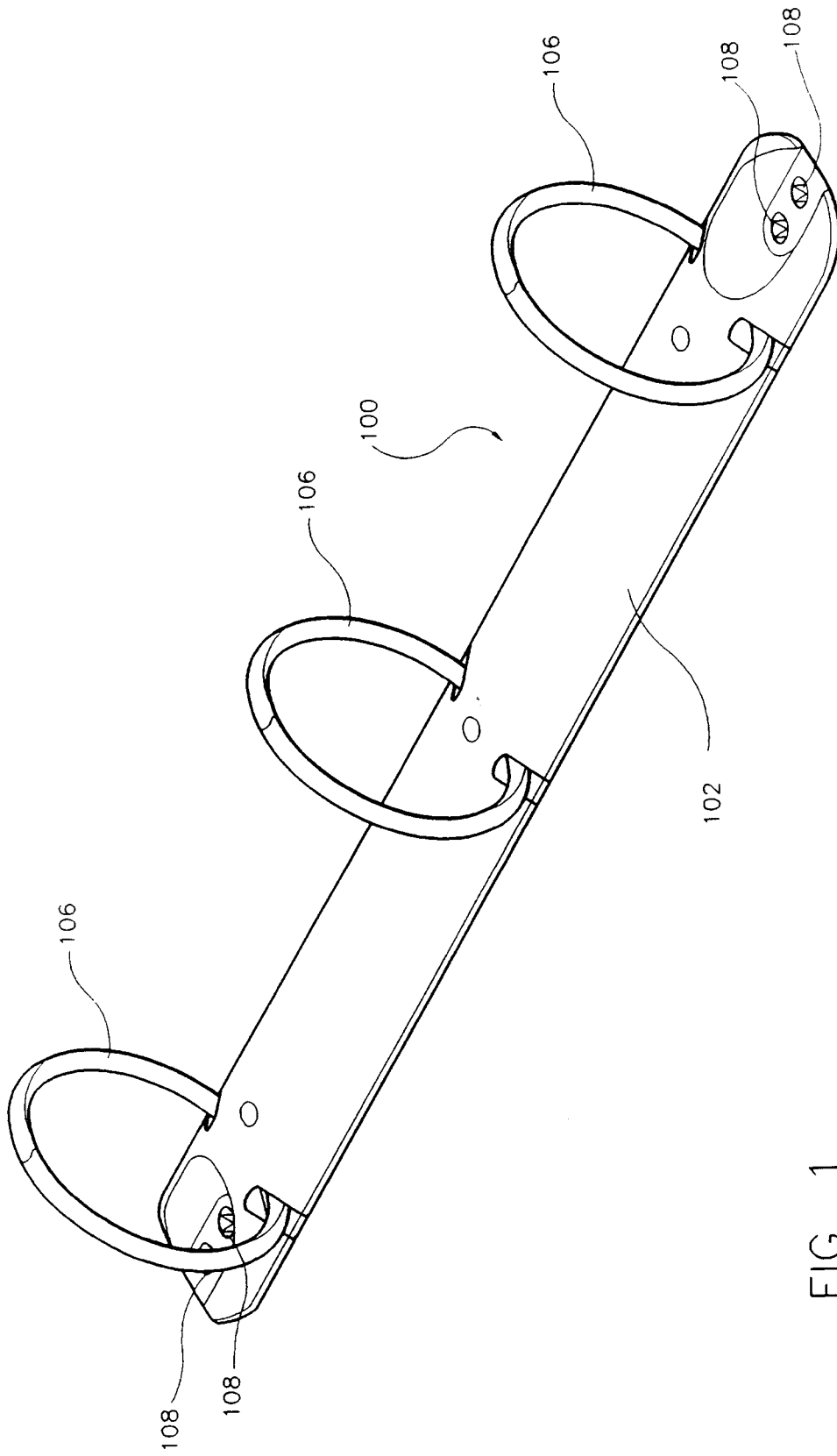


FIG. 1

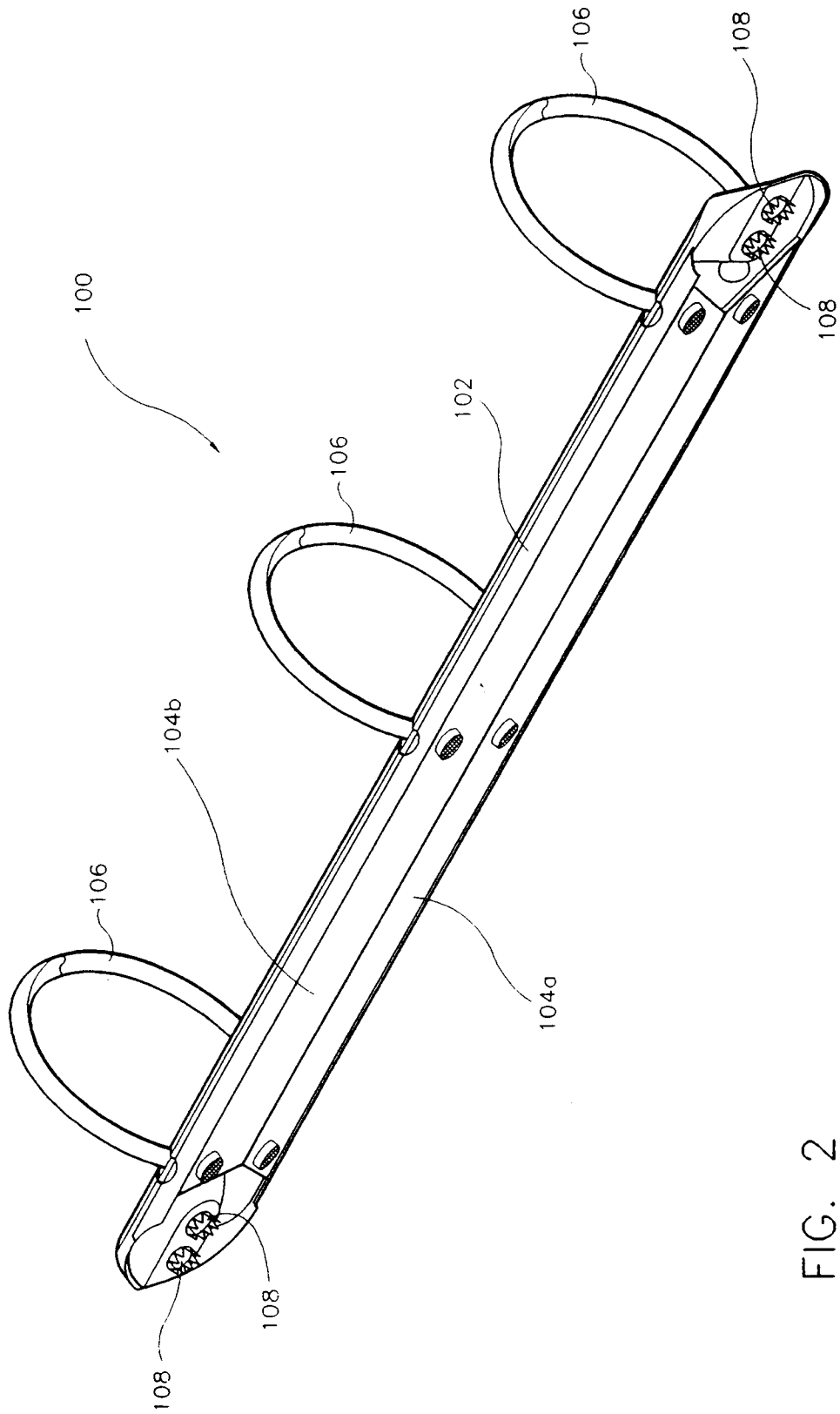


FIG. 2

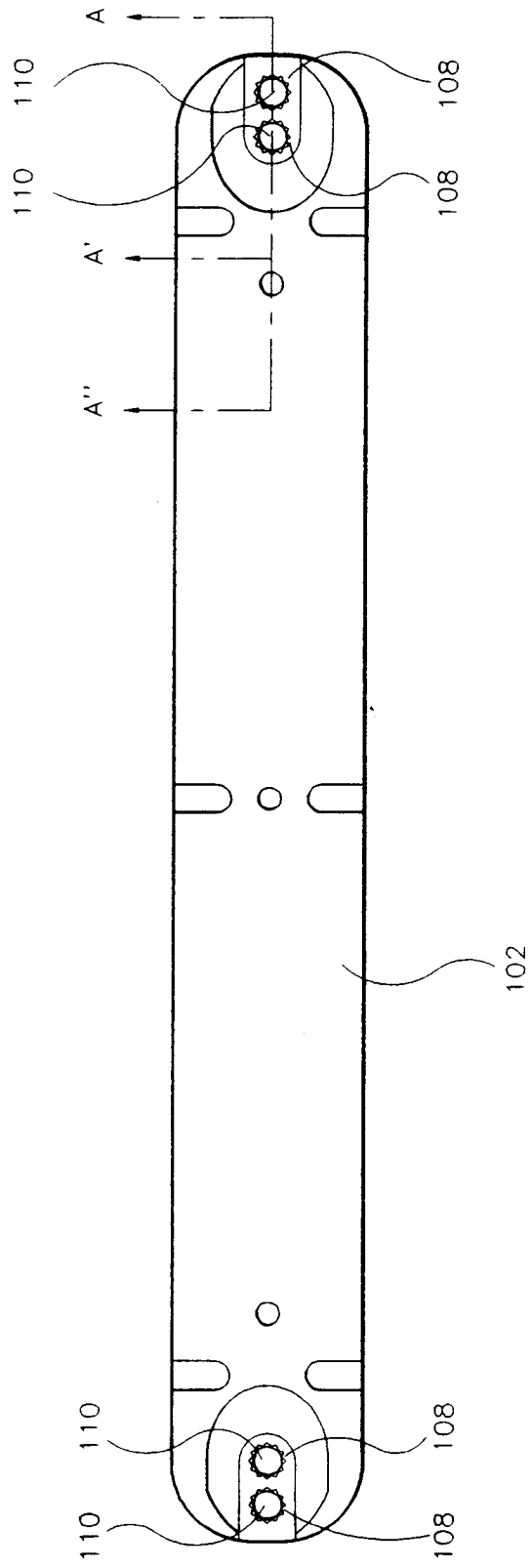


FIG. 3

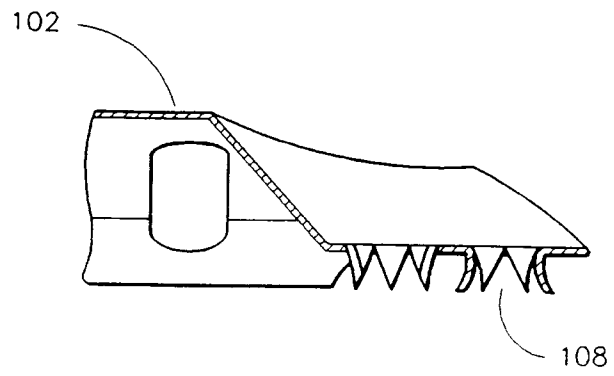


FIG. 4

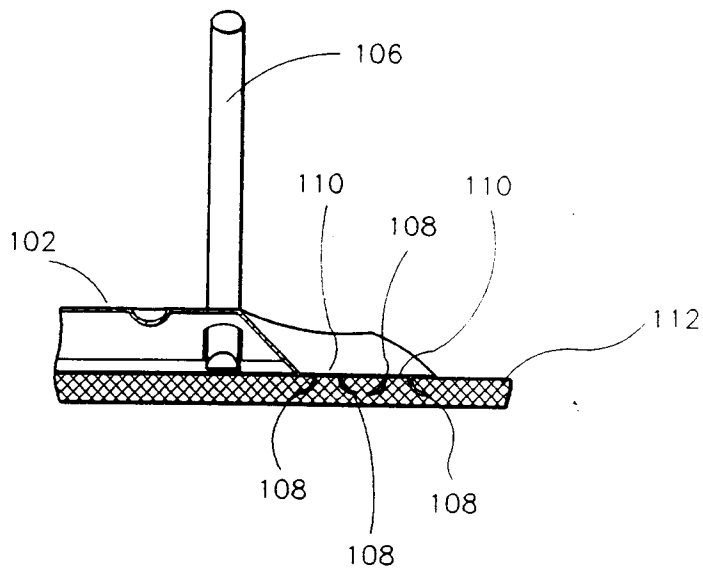


FIG. 5

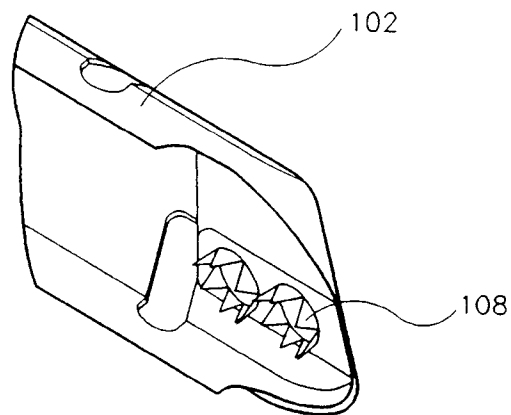


FIG. 6

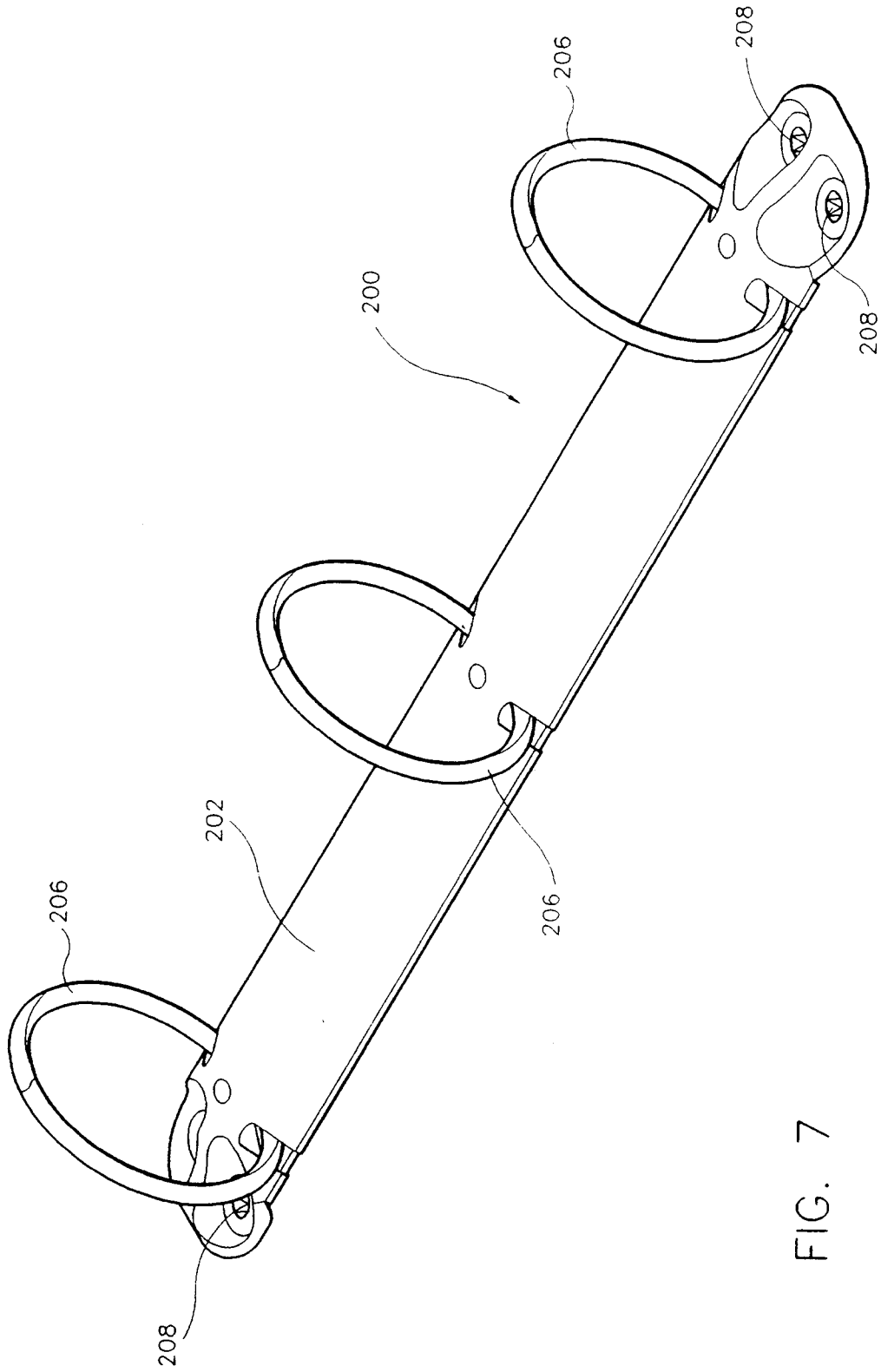


FIG. 7

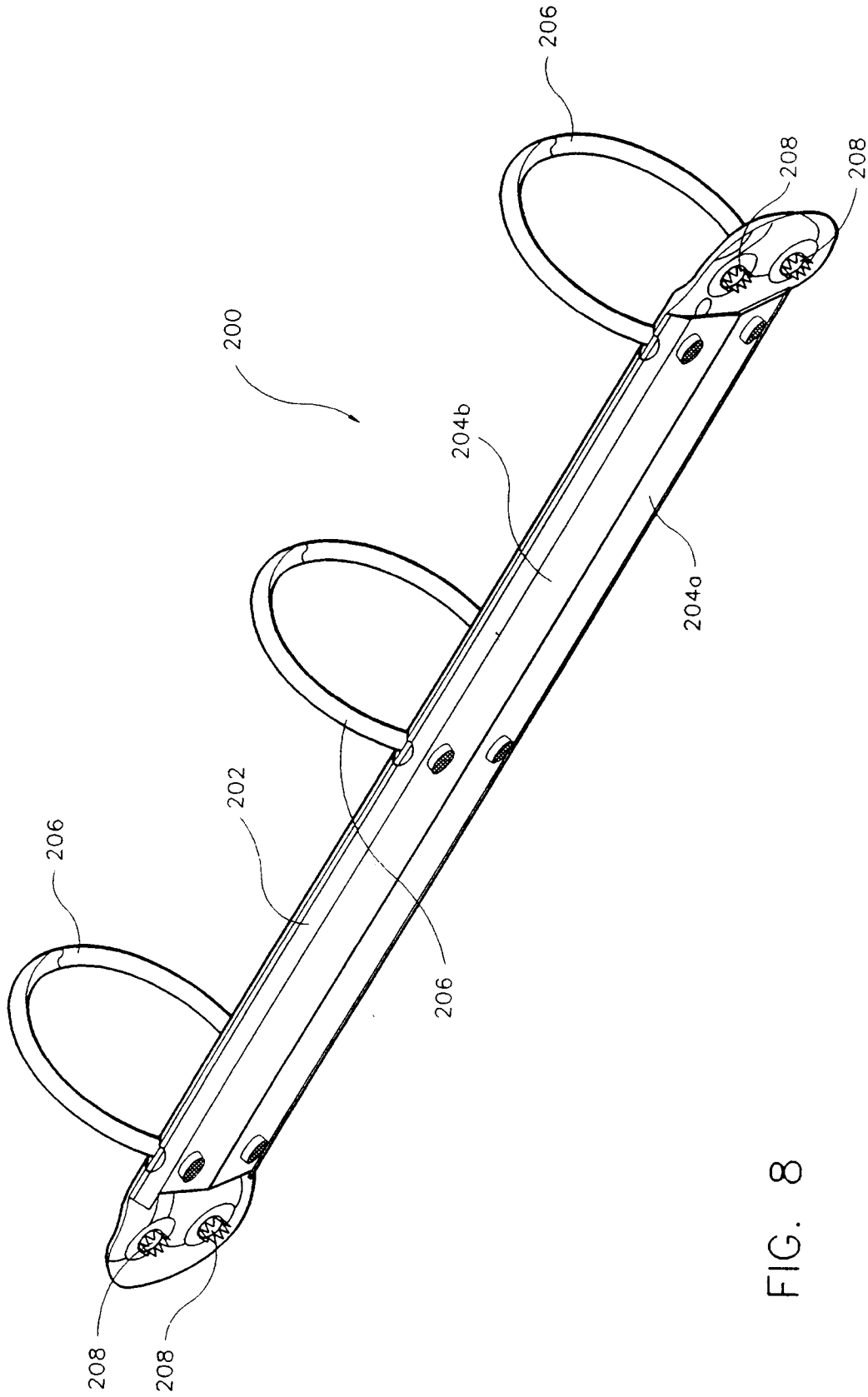


FIG. 8

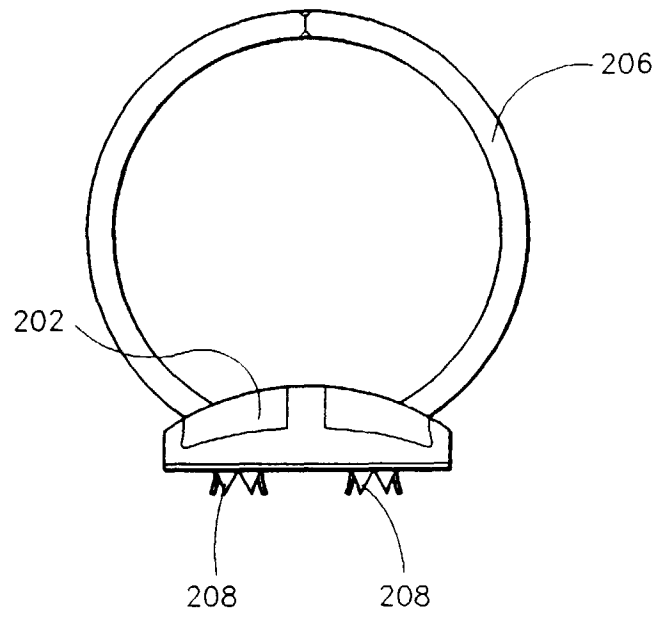


FIG. 9

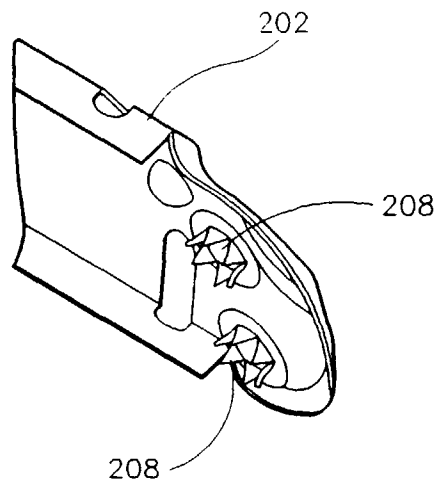


FIG. 10

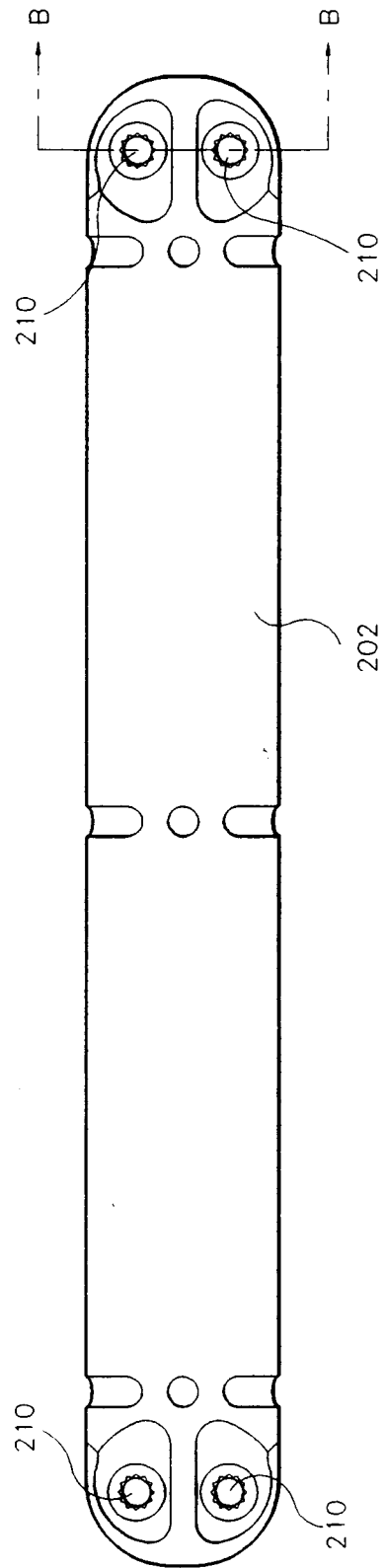


FIG. 11

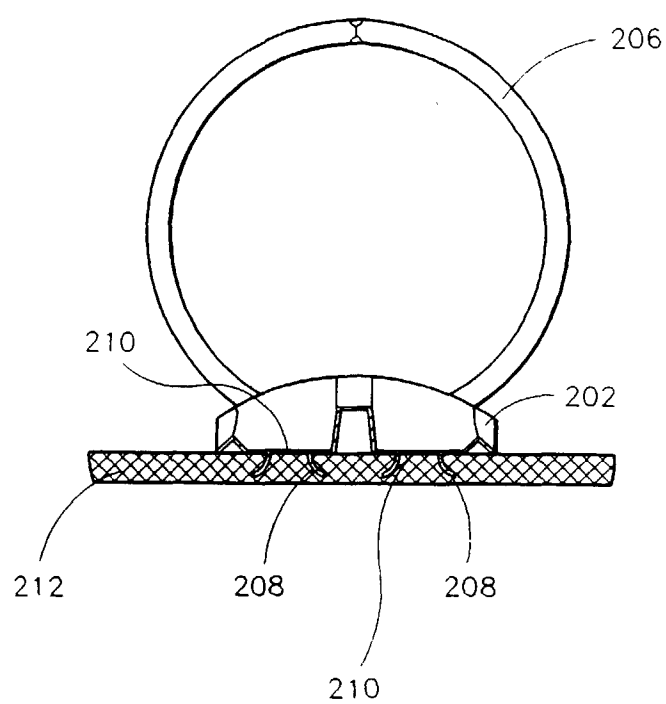


FIG. 12

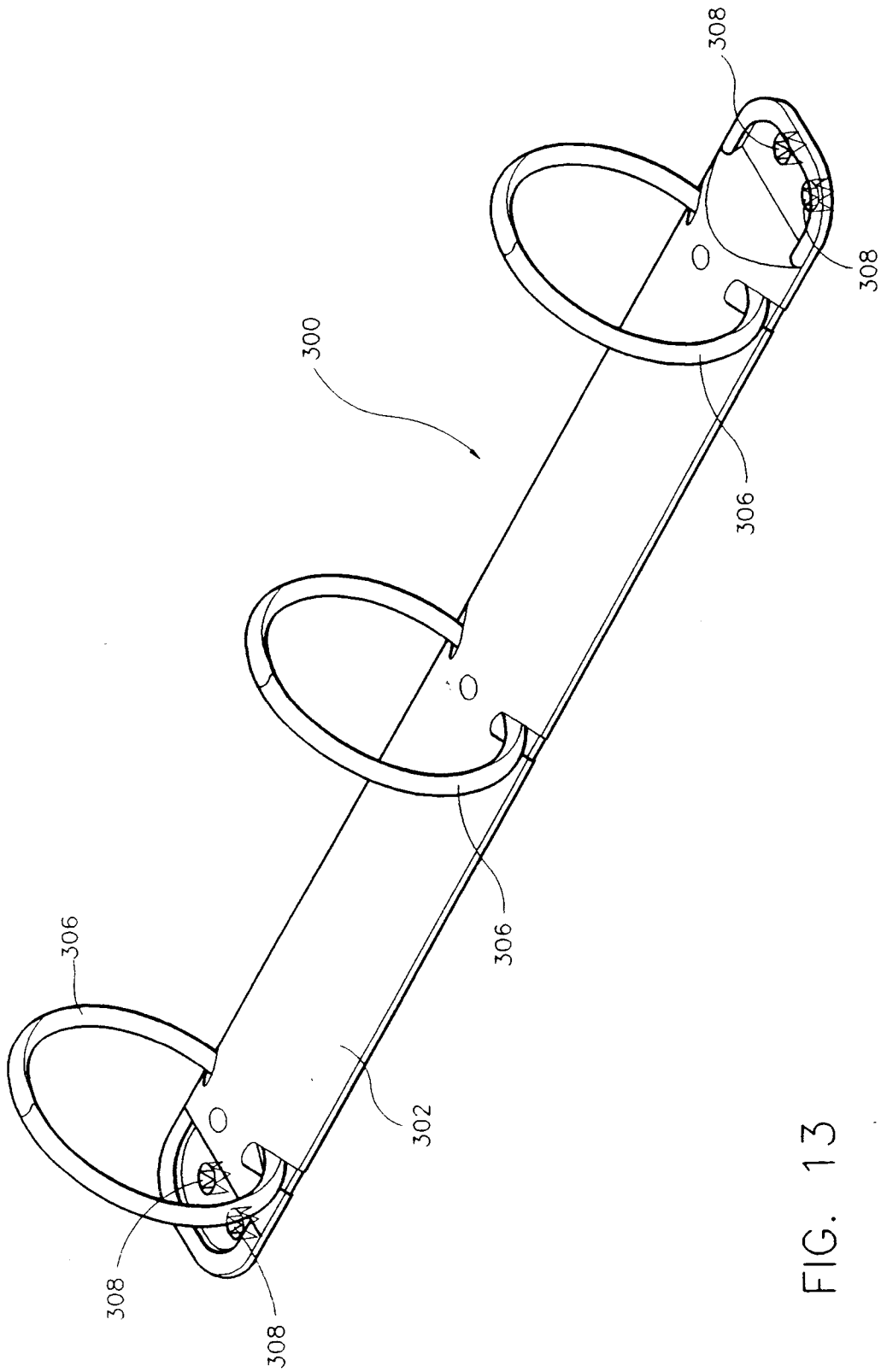


FIG. 13

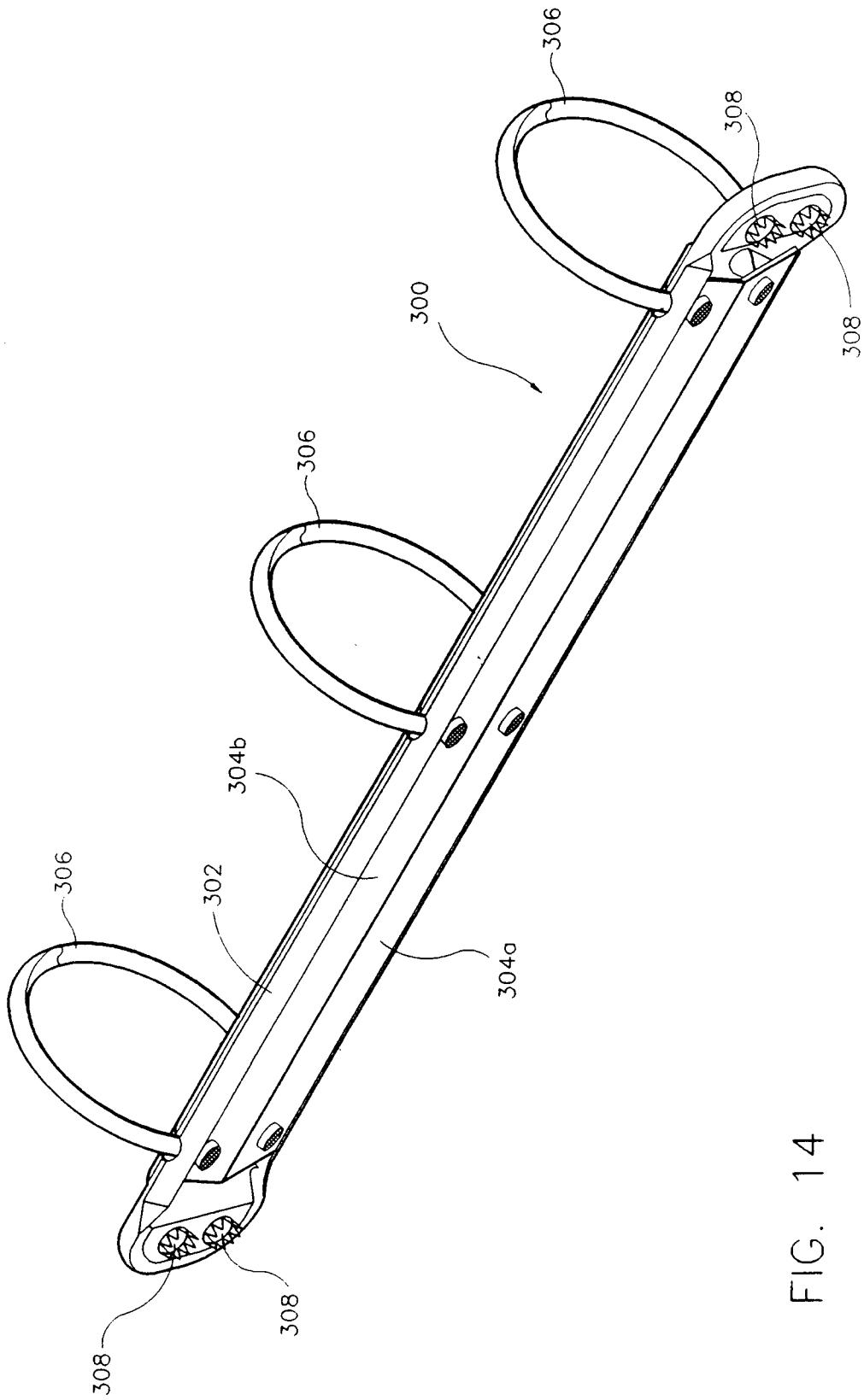


FIG. 14

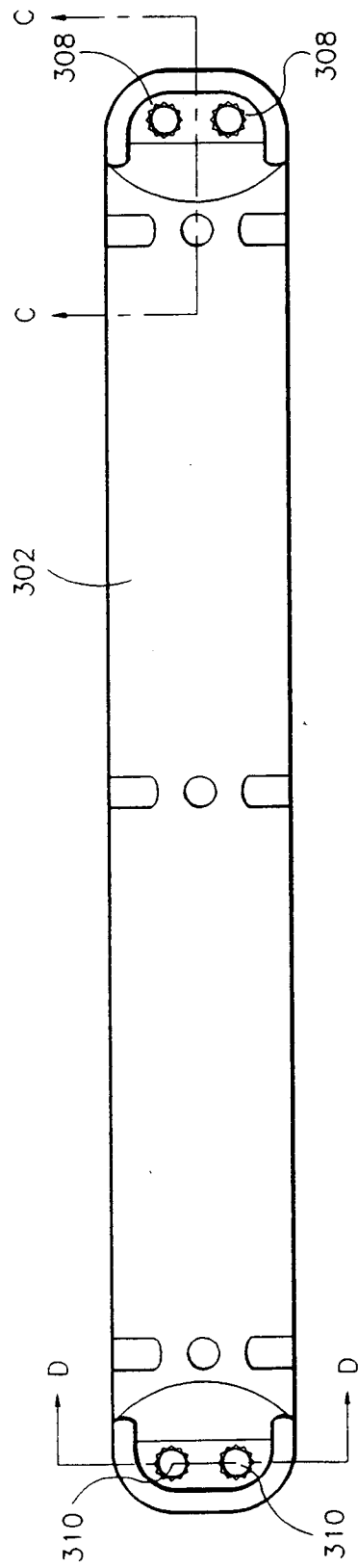


FIG. 15

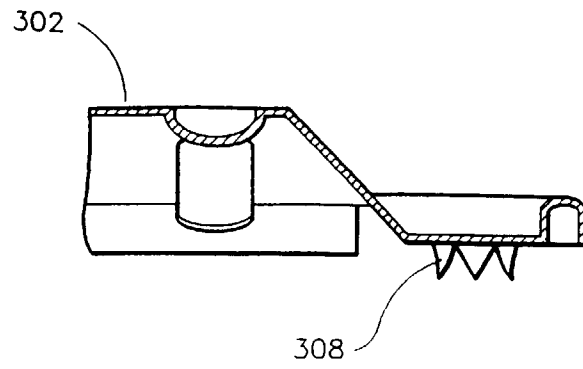


FIG. 16

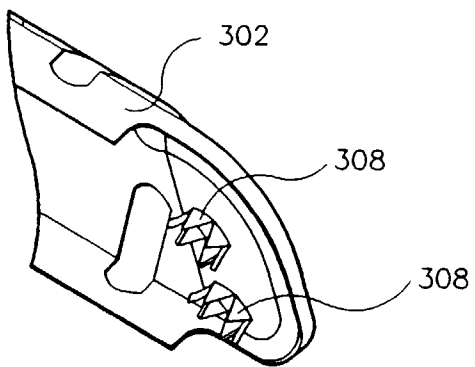


FIG. 17

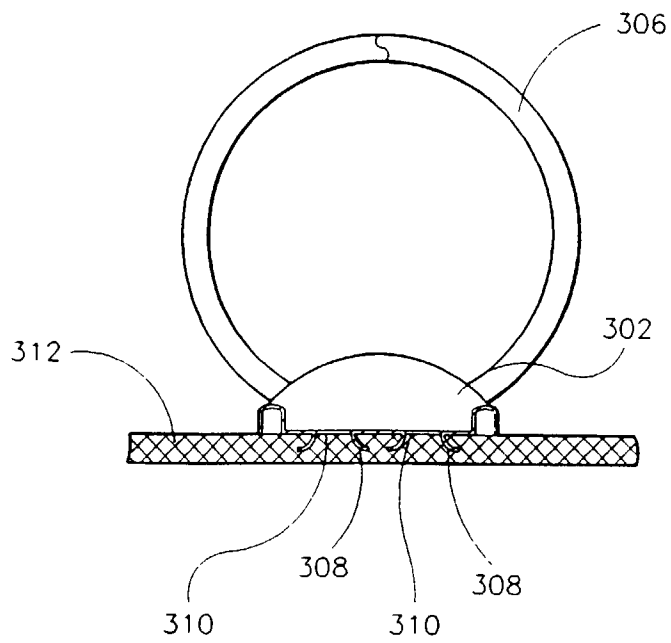


FIG. 18