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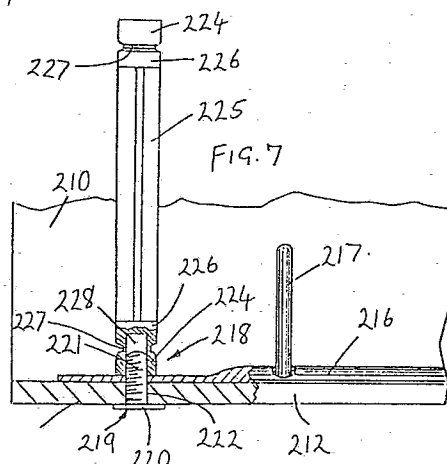
71 Applicant: Eagers, Nigel
 31 Belvedere Mews St. Marys Chalford
 Stroud Gloucestershire (GB)

72 Inventor: Eagers, Nigel
 31 Belvedere Mews St. Marys Chalford
 Stroud Gloucestershire (GB)

74 Representative: Carter, Gerald et al
 Arthur R. Davies & Co. 27 Imperial Square
 Cheltenham GL50 1RQ Gloucestershire (GB)

54 Improvements in or relating to binder assemblies.

57 A binder assembly comprises a cover 210, 211, 212 to which is securable a ring binding mechanism 215 which includes a base plate 216. The base plate 216 is secured to the cover by a two-part fastening device 218 comprising a male part 219 having a threaded shank 221 which passes through registering holes 222 and 223 in the cover and base plate and which is adapted for screw-threaded engagement with a female part 224. The female part 224 is formed from plastics and is integral with a manipulating part 225 which may be snapped off after the fastening device has been secured in place. Alternatively, the male part may pass through the base plate of the ring binding mechanism and engage a female part in the cover. The female part, instead of being a separate element, may comprise a blind hole integrally formed in the cover. The two parts of the fastening device may be in snap-in, rather than screw-threaded, engagement.



Description

"Improvements in or relating to binder assemblies"

The invention relates to binder assemblies of the kind comprising a cover for at least partial enclosure of a sheaf of papers, and a binding mechanism secured to the cover whereby the papers may be secured in position within the cover, the binding mechanism being operable to allow papers to be added or removed as required.

The covers of such binder assemblies usually comprise a narrow elongate back plate or spine to which front and back side boards are hinged. The binding mechanism is usually attached to the back plate or spine but may instead be attached to one of the side boards.

The most common type of binding mechanism comprises a base plate on which are mounted two or more spaced rings, each ring being made in two parts which are separable to enable papers to be inserted on or withdrawn from the rings, each sheet of paper being formed with holes adjacent one edge for this purpose. There are many different forms of ring binding mechanisms and various ways in which the rings may be opened and closed, such as operating levers or over-centre spring mechanisms.

In binder assemblies of this type, the binding mechanism is normally attached to the cover during manufacture. Usually such attachment is by means of deformable rivets which pass through registering holes in the base plate of the binding mechanism and the cover. This riveting is performed by the manufacture of the binder assembly, which is sold on to retailers as a complete unit.

The present invention sets out to provide an arrangement whereby the binding mechanism may be attached to the cover by the purchaser, instead of the parts being sold ready assembled. This has the advantage that the covers may be transported and stored flat in stacks, the binding mechanisms being transported and stored separately. This saves valuable storage space.

Furthermore, a retailer may then stock alternative types of binding mechanism having a uniform arrangement for attachment to the covers, so that a customer may select a desired cover and then choose to attach to the cover a particular type of binding mechanism according to his particular requirements. The arrangement may also allow only the cover or binding mechanism alone to be changed by the user, should this become desirable due, for example, to either the cover or the binding mechanism becoming damaged or no longer appropriate to the user's requirements.

According to the invention, therefore, there is provided a binder assembly for securing to a cover, comprising a binding mechanism which includes a base, and at least one two-part fastening device for securing the binding mechanism to the cover, the fastening device comprising a male part adapted for screw-threaded, or snap-in, engagement with a female part, one of said parts being provided on, or engageable with, the cover and the other part being provided on, or engageable with, the base of the

binding mechanism.

The two parts of the fastening device may be formed separately from the cover and binding mechanism and engageable therewith.

In one embodiment the male part of the fastening device has a head and a shank, the shank, in use, passing through registering apertures in the cover and base of the binding mechanism, for engagement with the female part.

The female part may also have a head and a shank, the head being located on the outside of the cover, in use, and the shank passing through an aperture in the cover for engagement by the male part of the fastening device. In this case the extremity of the shank of the female part may be formed with one or more lugs which project above the surface of the cover and are engageable with a formation on the base of the binding mechanism to locate it in the required position with respect to the cover.

In an alternative arrangement according to the invention the female part is integral with the cover. For example, the female part may comprise a blind hole formed in the back plate or in a side board of the cover.

With this latter arrangement, not only can the binding mechanism be readily fitted, for example by the user rather than during manufacture, but also the blind hole ensures that there is no protrusion, fastener head, or other part showing on the outside of the binder assembly, thus giving a very neat appearance.

At least that part of the cover in which the blind hole is formed is formed by a moulding process.

In any of the above arrangements in which the female part is formed with a head and a shank, the male part of the fastening device may also have a head and a shank, the shank passing through an aperture in the base for engagement within the female part of the fastening device on the cover.

In any of the arrangements according to the invention one part of the fastening device is preferably provided with a manipulating part by which it may be gripped, so that said one part can be secured to the other part of the fastening device by hand, and without the use of tools.

The manipulating part is preferably so connected to said one part of the fastening device that it may be readily separated therefore after the two parts of the device have been secured together. The manipulating part is preferably provided on the female part of the fastening device.

In arrangements where the male part of the fastening device is arranged for snap-in engagement with the female part, one of the parts may be provided with a spring tooth which is engageable with a recess in the other part as the two parts are snapped into engagement. The other part of the snap-in device may then be provided with a plurality of recesses spaced axially apart and into which the spring tooth may engage, whereby the two parts may be snapped together in any one of the a number

of relative axial positions so that the overall axial length of the fastening device may be adjusted according to the thickness of the parts which it connects together.

The following is a more detailed description of embodiments of the invention, reference being made to the accompanying drawings in which:

Figure 1 is a perspective view of parts of a binder assembly showing features of the invention,

Figure 2 is a part cross-section through the assembly,

Figure 3 is a similar section through an alternative construction,

Figure 4 is a perspective view of parts of a further form of binder assembly according to the invention,

Figure 5 is a partial cross-section of the parts of the assembly of Figure 4, and

Figures 6 and 7 are views, corresponding to Figures 1 and 2 respectively, of a further, and preferred binder assembly according to the invention.

Referring to Figure 1, the binder assembly comprises a cover which includes two side boards 10, 11 and a back plate or spine 12. These are hinged together at 13 and 14 to provide a generally book-shaped exterior cover in which loose papers or the like can be bound. In this case, at least the back plate 12 can be formed as a plastics moulding, for example being produced by an injection moulding process. Alternatively it may be a laminated board structure. The side boards 10, 11 may be hinged to the back plate 12 by means of integral hinges in the case where the side boards 10, 11 are also formed by moulding. Alternatively, where the side boards 10, 11 are separately formed as respective laminated board structures, the hinges may be formed by portions of one or more covering sheets which also extend over the back plate or spine 12. A number of different types of construction may be adopted.

Mounted on the back plate 12, for the purpose of securing papers removably within the cover, is a binding mechanism indicated generally at 15. The binding mechanism comprises an elongate base plate 16 on which are mounted at longitudinally spaced locations two or more spring releasable rings 17. Only one of the rings is shown in Figure 1, but it will be appreciated that any required number of rings may be spaced along the length of the binding mechanism. Each ring 17 is in two parts which are normally spring-urged together and which pass through holes in the edges of papers to be retained in the cover, the arrangement being such that the two parts of the rings may be sprung apart to enable papers to be inserted or removed.

In an arrangement of the kind illustrated, an over-centre spring system will normally be used to retain the rings in an open or closed condition. However, this is only one example of the many different types of binding mechanism which may be employed and the invention includes within its scope any form of binding mechanism having a base plate. For example binding mechanisms are known where manually operable lever systems are provided to

open or close the rings, as well as rings which are D-shaped, arch-shaped or O-shaped.

In order to secure the binding mechanism to the back plate 12 there is provided adjacent the opposite ends of the base plate 15 a fastening device 18 as also shown in Figure 2. The fastening device comprises a female part 19 which fits into a circular aperture in the back plate or spine 12 of the cover, and a male part 20 which passes through an elongate aperture 21 in the base plate 16 of the binding mechanism for engagement with the female part.

As best seen in Figure 2, the female part of the fastening device comprises a circular head portion 22 which is located against the outer surface of the back plate 12 of the cover, and an internally threaded shank portion 23 which passes through the aperture in the back plate 12. The axial length of the main part of the shank portion 23 is the same as the thickness of the back plate or spine 12 so that its extremity lies substantially flush with the inner surface of the back plate. However, the inner extremity of the shank portion is also formed with two upstanding lugs 24 which project beyond the surface of the back plate and are dimensioned to engage within the elongate aperture 21 on the adjacent end of the back plate 16 of the binding mechanism so as to locate the back plate.

Some binding mechanisms are formed with circular rather than elongate holes in the base plate, and in this case the lugs 24 will be omitted from the outer part of the fastening device.

The male part of the fastening device comprises a threaded shank portion 25 which passes through the aperture 21 in the base plate and threadedly engages the internally threaded shank portion 23 of the female part as shown in Figure 2. The male part of the fastening device also has a circular head 26 which overlies the surface of the base plate 16.

The male part of the fastening device may be provided with a manipulating part 27 which facilitates the screwing of the two parts of the fastening device together, there being provided a weakened junction 28 between the manipulating part and the head 26 so that after the fastening device has been tightly connected the manipulating part 27 may be snapped off by bending it sideways so as to leave a neat appearance to the fastening device.

Figure 3 shows an alternative form of fastening device 29 in which the shank portion 30 of the female part is integrally formed with an inwardly sprung tooth 31 which is engageable with recesses formed in the shank 32 of the male part of the fastening device. Since the tooth 31 is resilient the two parts of the fastening device may be simply snapped together by axial pressure. A plurality of recesses are formed in the shank 32 so that the device can accommodate various thicknesses of back plate 12 and base plate 16, the two parts of the device simply being pressed together and the tooth 31 automatically snapping into engagement with the appropriate recess on the shank 32 when the axial position is reached where the back plate 12 and base plate 16 are tightly held between the two parts of the fastening device.

In either of the above arrangements the fastening devices 18 or 29 may be formed from any suitable material but they are particularly suitable for moulding in a plastics material, such as Nylon.

The shank 23 or 30 of the outer, female part of each of the fastening devices described above may be square or rectangular in cross-section, instead of being circular as shown, and may be received in a similarly shaped hole in the cover. This has the advantage that the part is then held against rotation as the inner, male part of the device is fitted to it.

In the further embodiment shown in Figures 4 and 5, the binder assembly again comprises a cover which includes two side boards 110, 111, and a back plate or spine 112. These are hinged together at 113, 114 to provide a generally book-shaped exterior cover in which loose papers or the like can be bound. In this case, at least the back plate 112 is formed as a plastics moulding, for example being produced by an injection moulding process. It has a flat inner face, and a convex outer face so that the maximum depth of the moulding is in the centre of the back plate. The side boards 110, 111 may be hinged to the back plate 112 by means of integral hinges in the case where the side boards 110, 111 are also formed by moulding. Alternatively, where the side boards 110, 111 are separately formed as respective laminated board structures, the hinges may be formed by portions of one or more covering sheets which also extend over the back plate 112. A number of different types of construction may be adopted, including a one-piece moulding for the whole cover, and made-up laminated structures.

Blind holes 115 are formed near the two opposite ends of the generally rectangular back plate 112, in positions corresponding to the positions of holes 120 in the base plate 117. Each hole 115 is conveniently formed during the moulding process for the manufacture of the back plate 112. The blind holes 115 are internally screw threaded and, as seen in Figure 5, penetrate through most of the thickness of the moulding, but are open at the internal side of the cover. Since each hole is closed at the outside, no indication of the position of the hole can be seen from the exterior of the binder assembly.

Adjacent the hole 115 are two integral lugs serving as locating means. These are of shallow D-shape with their straight sides presented towards, and immediately adjacent, opposite edges of the hole 115.

The binding mechanism is similar to that in the previously described embodiment. It includes a base plate 117 and, in the example shown, the papers are again attached by means of spring releasable rings 118. It is to be understood, however, that many different types of ring binding mechanisms can again be used in conjunction with this embodiment of the invention, including those having rings of circular shape as shown, or with D or arch-shaped rings.

The base plate 117 has an oblong hole 120 near each end. The proportions of each hole 120 are such that it can encompass the hole 115 as well as the two lugs 116 on the back plate 112 of the cover. The rounded ends of the oblong hole 120 match the outer convex surfaces of the two D-shaped lugs so

that these serve to locate the base plate 117 whereby the hole 115 is aligned in the centre of the oblong hole 120 of the base plate 117.

Fastening elements 119 are used to secure the base plate 117 to the back plate 112. Each element 119 has a screw-threaded end portion 119a to engage in the corresponding screw-threaded blind hole 115 of the back plate 112, a collar 119b, and a manipulating part 119c by means of which the screw can be manually tightened or released. Figure 4 shows the parts in disassembled condition, and Figure 5 shows them in assembled state with the fastening element 119 engaged and holding the base plate 117 firmly in contact with the back plate 112. In order to ensure such firm securement, the lugs 116 on the back plate 112 must not be greater in height than the thickness of the base plate 117.

In an alternative construction, the fastening element may be in the form of a stud which is snap engaged with suitable formations in the blind hole 115. A groove in the hole may co-operate with an annular ridge on the stud, or vice versa.

Covers may include the two side boards and the back plate as shown, or alternatively one of the side boards may have the blind holes 115 formed therein. In another example, the cover may comprise only one side board in which the holes 115 are formed.

In order to provide a neater appearance, and to reduce the risk of the fastening elements 119 fouling the edges of papers in the assembly, as well as making assembly more convenient, the manipulating part 119c of each element may again be so connected to the collar 119b that it may be snapped off after the element has been secured in place. For example, a weaker fracture line may be formed in the element at the junction of the part 119c and the collar 119b, so that the part 119c may be broken off by bending it sideways. This then leaves only the collar 119b showing, which may provide a particularly neat appearance.

Figures 6 and 7 illustrate a further, and preferred form of binder assembly according to the invention. As in the previously described arrangements the cover includes two side boards 210 and 211 and a back plate or spine 212. The binding mechanism 215 again comprises an elongate base plate 216 on which are mounted at longitudinally spaced locations two or more spring releasable rings 217.

In this arrangement, however, the two-part fastening device 218 comprises a male part 219 having a head 220 disposed on the outer side of the back plate or spine 212 and a threaded shank 221 which passes through registering circular holes 222 and 223 in the back plate 212 and base plate 216 respectively. The length of the shank 221 is such that it projects beyond the surface of the base plate 216, and the projecting end of the shank is engaged by an internally threaded female part 224. A similar fastening device is provided at the opposite end of the base plate 216. In the example shown, the female part 224 is circular in external cross-section, but it will be appreciated that it may be of any other suitable external shape. For example, it may be multi-sided.

Initially, the two female parts 224 of the two

fastening devices are integrally moulded at opposite ends of a manipulating member 225 which is cross-shaped in section along most of its length. End portions 226 of the manipulating member are of circular cross-section and are of the same diameter as the adjacent female parts 224, being separated therefrom by reduced diameter portions 227. As best seen in Figure 7, the internally threaded bore 228 in each female part 224 also extends through the reduced diameter portion 227 and into the adjacent end part 226 of the manipulating member. The separating part 227 therefore consists of a short thin walled tube and thus provides a weakened connection between each female part 224 and the manipulating member 225.

The manipulating member 225 and female parts 224 are moulded from a plastics material, such as high impact polystyrene, and the male parts 219 may be formed of similar material.

Figure 7 shows one female part 224 screwed onto the projecting threaded shank of the male part 219 so as to clamp the base plate 216 firmly to the spine 212 of the cover. In the position shown the manipulating member 225 is still attached to the female part 224. However, the manipulating part 225 may be readily snapped from the female part 224, either by bending it sideways or by continuing to rotate it so as to apply excessive torque to the weakened portion 227. The female part 224 still connected at the other end of the manipulating member 225 may then be applied to the other male part of the fastening device at the opposite end of the base plate 216, in similar manner.

The integral moulding of the two female parts 224 with the manipulating member 225 facilitates manufacture and packaging of the binder assembly and reduces the risk of the comparatively small female parts being lost.

In the arrangements shown, the projecting ends of the male parts of the fastening device also serve the purpose of locating the base plate 216 in the required position before the female parts are applied.

All of the above arrangements allow the binding mechanism to be secured to the cover by simple hand operation of the fastening devices and without requiring the use of special tools. Accordingly, as previously mentioned, covers and binding mechanisms may be sold separately and may be readily assembled together by the purchaser. The fastening devices may also be sold with the binding mechanisms for fitting by the purchaser, or, in the case where a two-part fastening device is used, the covers may be sold with one part of the fastening device already fitted to each cover by the manufacturer or the retailer. In this case the binding mechanism will be supplied with only the inner part of the fastening device.

In the examples described above and illustrated in the drawings, the binder assembly has been referred to as being mounted on the back plate or spine of the cover. However, as previously mentioned, the mechanism may equally well, in each case, be mounted on one of the side boards of the cover instead. It will be appreciated that this simply

necessitates forming the holes to receive the fastening devices in appropriate positions on one of the side boards.

Claims

1. A binder assembly for securing to a cover, comprising a binding mechanism (215, Figs. 6 and 7) which includes a base, and at least one fastening device for securing the binding mechanism to the cover (210, 211, 212), characterised in that the fastening device comprises a male part (219) adapted for screw-threaded, or snap-in, engagement with a female part (224), one of said parts being provided on, or engageable with, the cover (210, 211, 212) and the other part being provided on, or engageable with, the base (216) of the binding mechanism (215).

2. A binder assembly according to Claim 1, characterised in that the two parts (219, 224) of the fastening device are formed separately from the cover and binding mechanism and are engageable therewith.

3. A binder assembly according to Claim 2, characterised in that the male part (219) of the fastening device has a head (220) and a shank (221), the shank, in use, passing through registering apertures (222, 223) in the cover and base of the binding mechanism, for engagement with the female part (224).

4. A binder assembly according to Claim 2, characterised in that the female part (19, Figs. 1 and 2) has a head (22) and a shank (23), the head being located on the outside of the cover (12), in use, and the shank passing through an aperture in the cover for engagement by the male part (20) of the fastening device.

5. A binder assembly according to Claim 4, characterised in that the extremity of the shank (23) of the female part is formed with one or more lugs (24) which project above the surface of the cover (12) and are engageable with a formation (21) on the base (16) of the binding mechanism to locate it in the required position with respect to the cover.

6. A binder assembly according to Claim 1, in combination with a cover, characterised in that the female part (115, Figures 4 and 5) is integral with the cover (112).

7. A binder assembly according to Claim 6, characterised in that the female part comprises a blind hole (115) formed in the back plate (112) or in a side board (110, 111) of the cover.

8. A binder assembly according to Claim 7, characterised in that at least the part of the cover (112) in which the blind hole (115) is formed is formed by a moulding process.

9. A binder assembly according to any of Claims 4 to 8, characterised in that the male part (20, Figures 1 and 2) of the fastening device also has a head (26) and a shank (25), the shank

passing through an aperture (21) in the base (16) for engagement within the female part (19) of the fastening device on the cover (12).

10. A binder assembly according to any of Claims 1 to 9, characterised in that one part (224, Figure 7) of the fastening device is provided with a manipulating part (225) by which it may be gripped, so that said one part can be secured to the other part (219) of the fastening device by hand, and without the use of tools.

11. A binder assembly according to Claim 10, characterised in that the manipulating part (225) is so connected to said one part (224) of the fastening device that it may be readily separated therefore after the two parts (219, 224) of the device have been secured together.

12. A binder mechanism according to Claim 10 or Claim 11, characterised in that the manipulating part (225) is provided on the female part (224) of the fastening device.

13. A binder assembly according to any of the preceding claims, characterised in that the male part (29, Fig. 3) of the fastening device is arranged for snap-in engagement with the female part (30), and in that one of the parts is provided with a spring tooth (31) which is engageable with a recess in the other part as the two parts are snapped into engagement.

14. A binder assembly according to Claim 12, characterised in that the other part (32) of the snap-in device is provided with a plurality of recesses spaced axially apart and into which the spring tooth (31) may engage, whereby the two parts may be snapped together in any one of a number of relative axial positions so that the overall axial length of the fastening device may be adjusted according to the thickness of the parts which it connects together.

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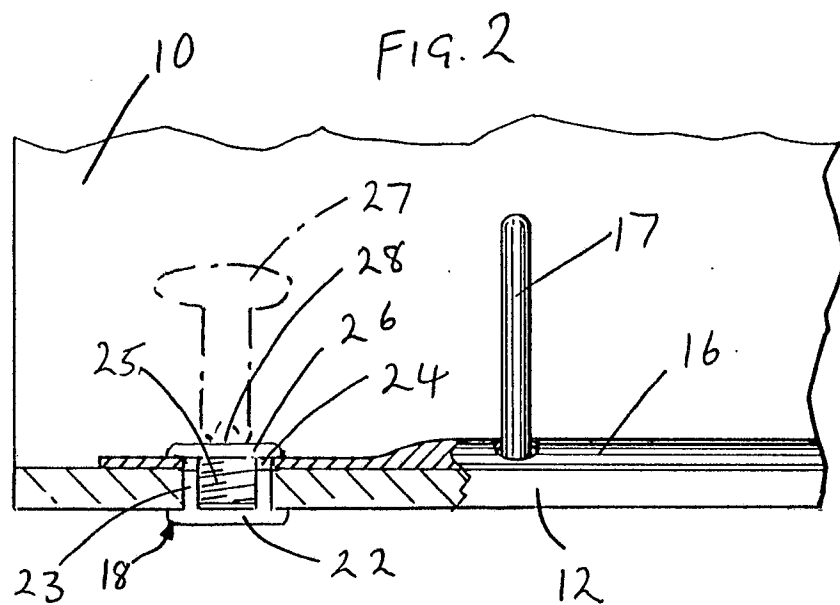
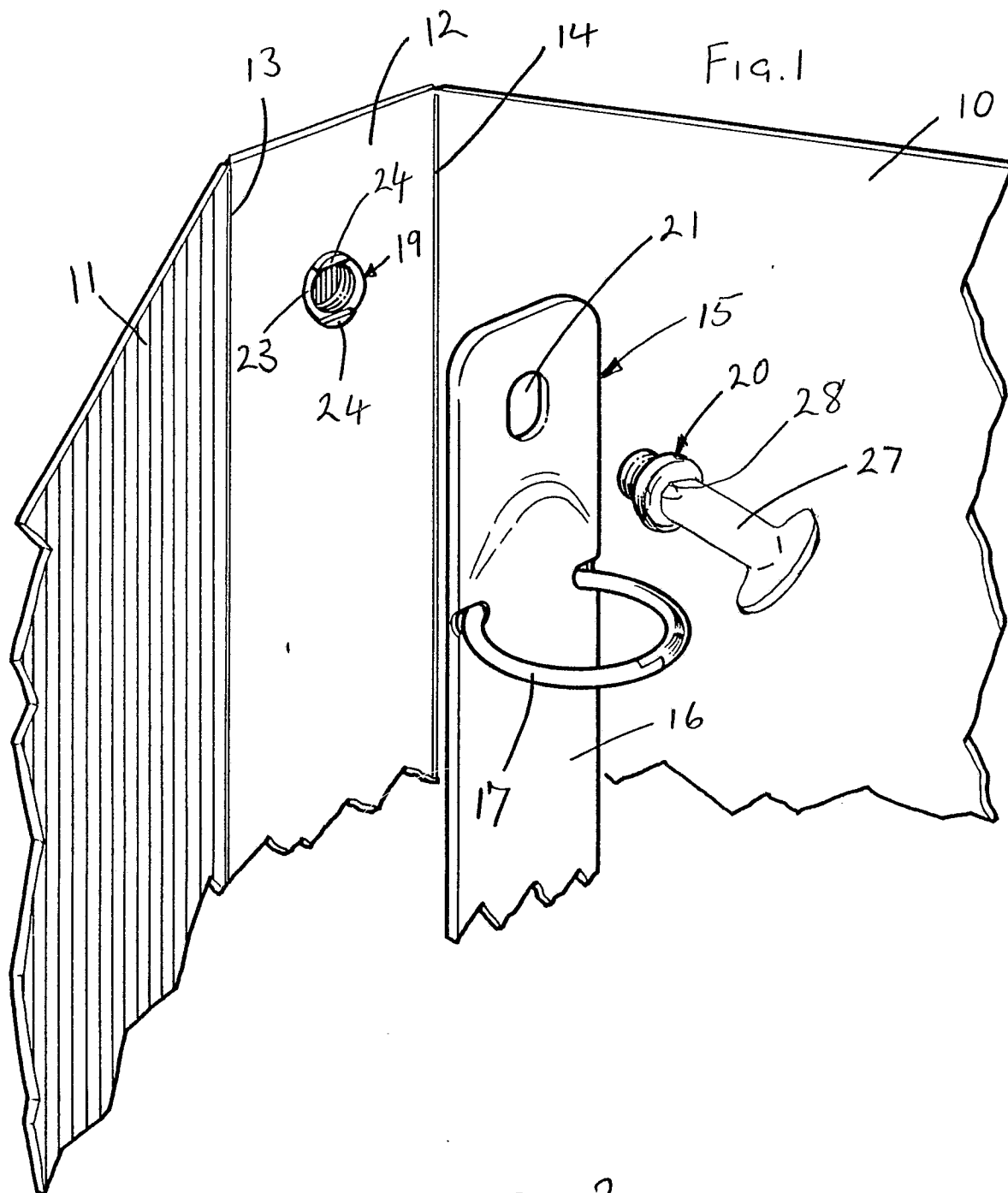


FIG. 3

