

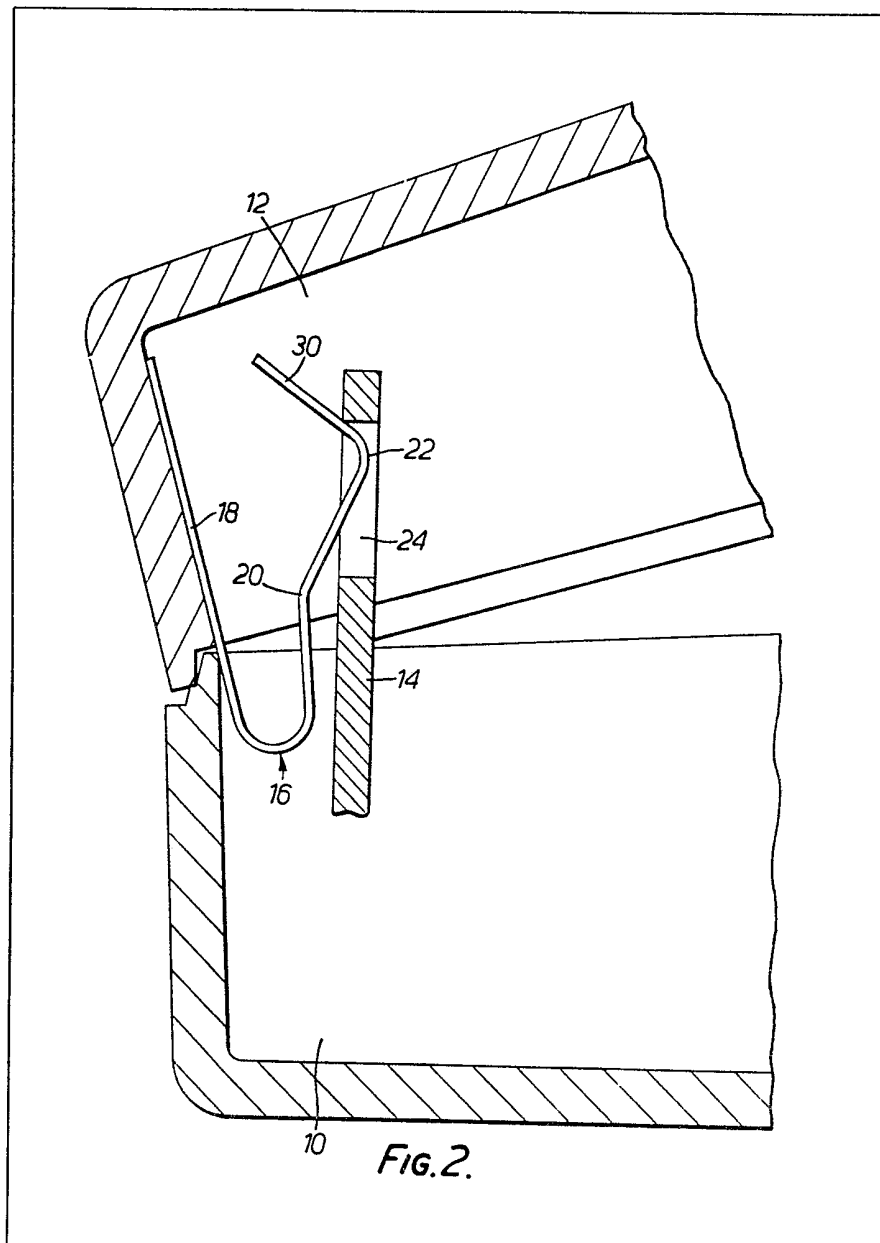
(12) UK Patent Application (19) GB (11) 2 101 191 A

- (21) Application No 8118220
- (22) Date of filing 12 Jun 1981
- (43) Application published 12 Jan 1983
- (51) INT CL³ B65D 55/04
- (52) Domestic classification E2A 105 410 CAF U1S 22 15 E2A
- (56) Documents cited GB 0450641 US 4220252
- (58) Field of search E2A B8P
- (71) Applicants The Plessey Company plc (Great Britain), Vicarage Lane, Ilford, Essex
- (72) Inventor David John Hickling
- (74) Agents The Plessey Company plc (Great Britain), Vicarage Lane, Ilford, Essex

(54) **Fastener for a hollow body**

(57) The fasteners 20 for two parts of a body and is wholly contained within the body and not visible when the two parts are joined and comprises a resilient member 16 secured inside the first part of the body projecting internally of the body and an orifice 24

formed inside the second part of the body. The resilient member is shaped to enter the orifice and verge the two parts together and to permit separation of the two parts by a relative pivoting movement adjacent to the abutting joint between the parts whereby the resilient member is retracted from the orifice.



GB 2 101 191 A

1/3

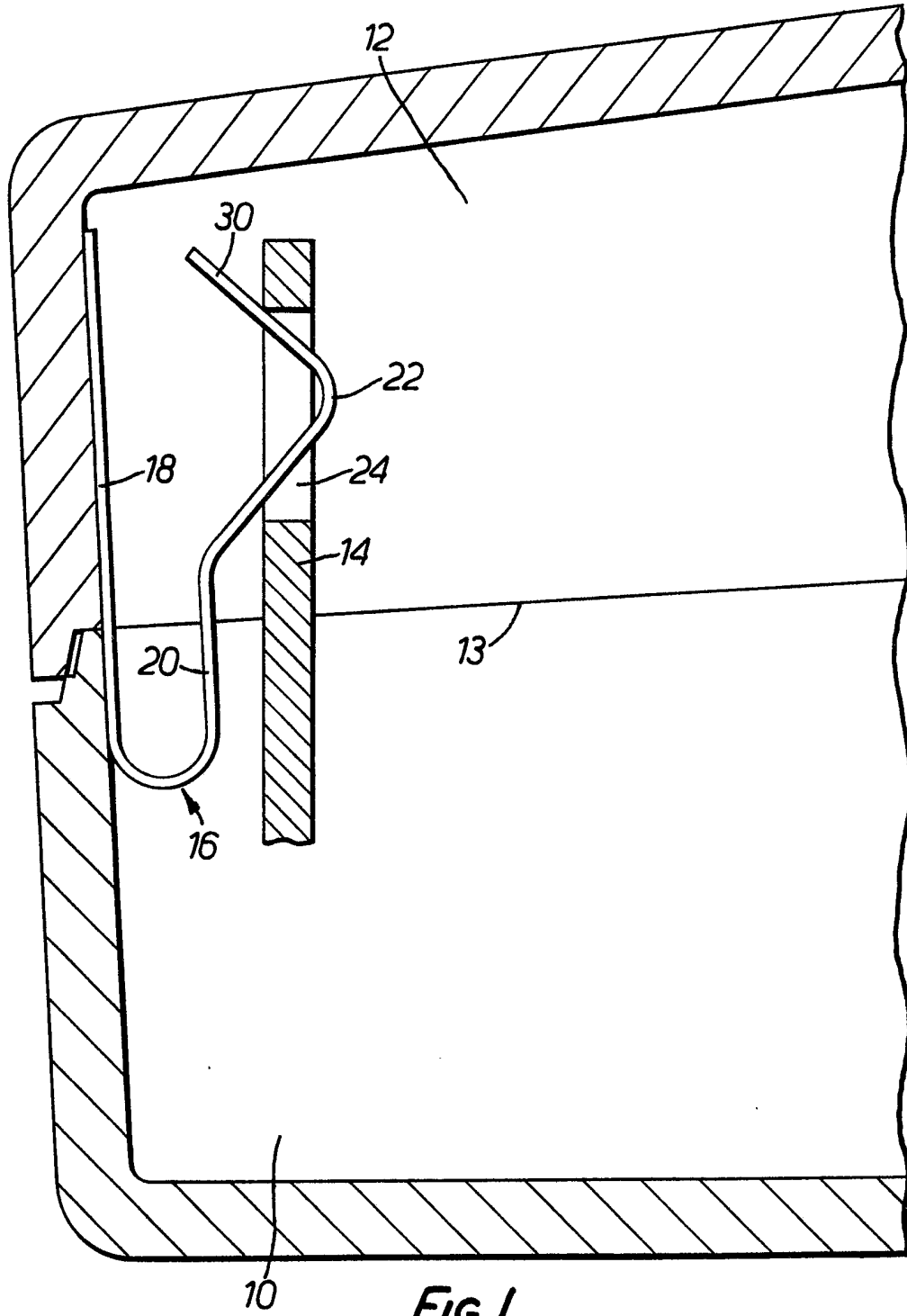


Fig. 1.

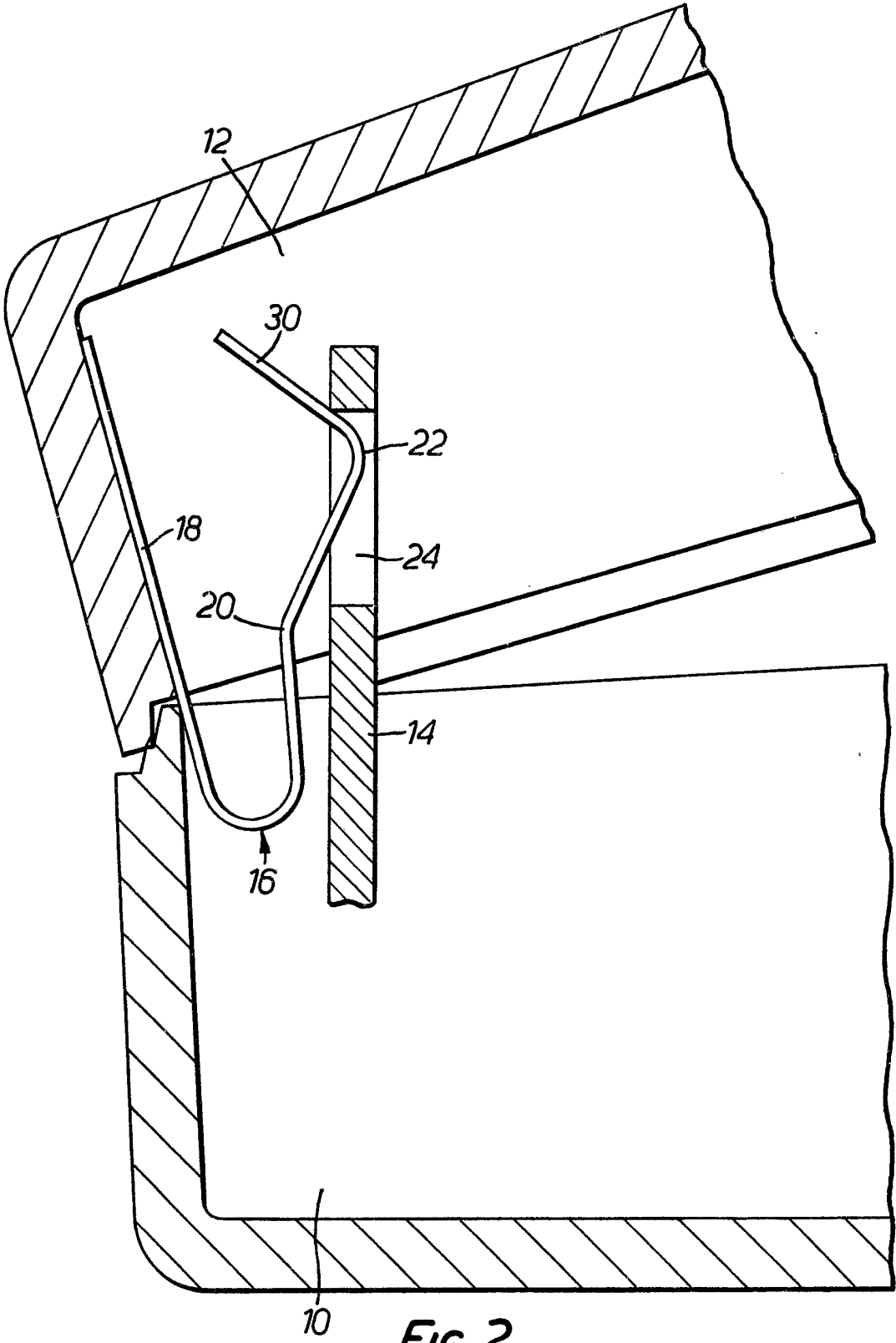


FIG. 2.

3/3

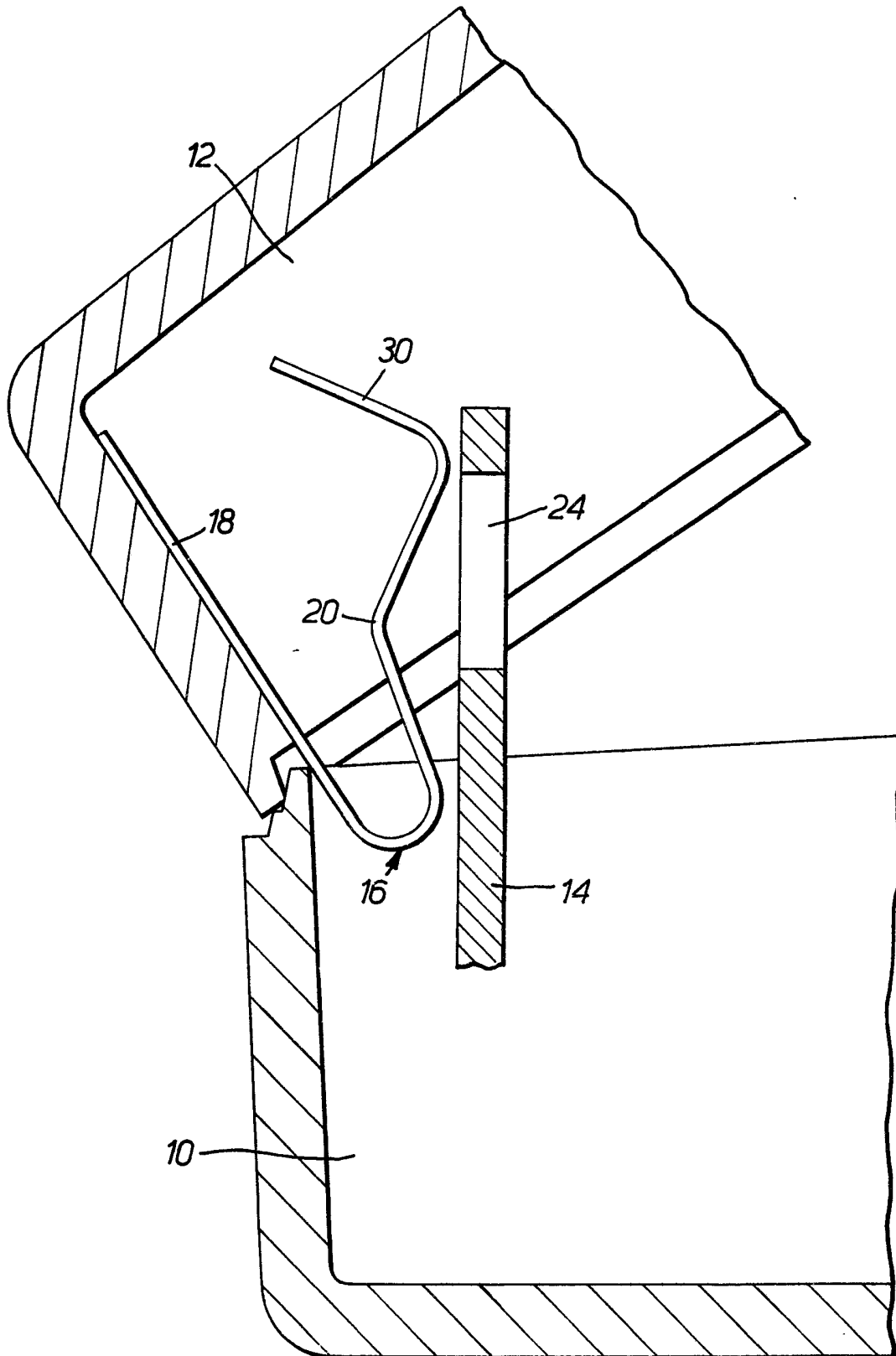


FIG. 3.

SPECIFICATION

Improvements in or relating to fasteners

This invention relates to fasteners and more particularly to fasteners for two parts of a body where it is required that no securing means is normally visible externally of the body. Such an example is a styled subscribers telephone apparatus made of two or more parts having visible joining lines between the parts, and external fastening arrangements would spoil or otherwise mar the appearance of the telephone.

It is an object of the present invention therefore to provide a fastener for two parts of a hollow body which is wholly contained within the body when the two parts are secured together, although the use of further fastening means for the two parts is not excluded.

According to the present invention a fastener for two parts of a hollow body comprises a resilient member secured internally to a first part of the hollow body and projecting inwardly thereof and an orifice formed internally of a second part of the hollow body, the resilient member being shaped to enter the orifice and to urge the two parts together and to permit separation of the two parts by a relative pivoting movement adjacent to the abutting joint between the parts whereby the resilient member is retracted from the orifice. The resilient member preferably comprises a substantially V-shaped strip, the apex of the V projecting inwardly of the first part. Preferably it comprises a substantially U-shaped strip one of the legs of the U-shape being straight and the other leg having a substantially V-shaped portion formed therein, the straight leg being adapted to be secured to the inner surface of the first part.

The orifice may be formed in a flange formed inside the second part of the body and spaced from the wall of the second part. Alternatively the orifice may be formed in a detachable web or other member removably mounted in the second part of the body.

An embodiment of the invention will now be described by way of example only with reference to the accompanying drawings in which:—

Figure 1 is a cross-sectional view through a portion of a hollow body having a fastener in accordance with the present invention,

Figure 2 is a cross-sectional view showing the fastener in a partially engaged position and

Figure 3 is a cross-sectional view through the body showing the fastener in a disengaged position.

The figures show a portion of a hollow body having a lower base part 10 and an upper cover part 12 which may be any type of mechanism such as, for example, a subscribers telephone apparatus. The base 10 is adapted to contain the basic mechanism and circuitry of the telephone which is mounted on a separate chassis, part 14 of which is shown, the chassis being suitably secured inside the base 10. The telephone dial or push button module, handset contacts, etc. are adapted to project through the holes formed in the

cover 12, the joint 13 between the cover and the base being positioned about half-way up the body and hence being normally visible.

The base and the cover are secured together at one end by a suitable nut and bolt arrangement (not shown) and at the other end by a fastener according to the invention.

The fastener comprises a spring steel strip 16 bend into a substantially U-shape with one straight leg 18 and one leg 20 formed

substantially into a V-shape. The straight leg 18 is adapted to be secured to the inside of the cover 12 either by bonding, fitting into slots or any other suitable means so that the apex 22 of the V-shape formed in the other leg 20 projects inwardly of the cover 12.

A hole 24 is formed conveniently in the chassis 14 which is spaced from the end of the base 10 so that the V-shaped leg of the spring steel strip 16 projects into it.

In the position shown in Figure 1 the leg 20 is urged towards the other leg 18 and the V-shaped leg 20 is urged downwards by the reaction between the top edge of the hole 24 and the end 30 of the leg 20. This arrangement thus forces the cover 12 down on to the base 10 and the cover 12 cannot be vertically removed from the base 10 unless an excessive force is applied upwardly to the cover 12 such as by prising a suitably thin tool into the joint 13 which would normally result in breakage or deformation of the cover and/or the base.

To remove the cover 12, the nut and bolt assembly is removed and the cover pivoted along the joint between the cover 12 and the base 10 as illustrated in Figure 2. This pivoting movement causes the end 30 of the leg 20 to slide out of the hole 24 in the chassis 14 until the whole of the V-shaped leg 20 is withdrawn from the hole 24 (see Figure 3). The cover 12 can now be simply lifted off the base 10.

Fitting the cover 12 is the same procedure in reverse. The cover 12 is placed at the angle shown in Figure 3 so that the spring 16 just clears the chassis 14. As the cover is pivoted downwards the V-shaped leg 20 of the spring 16 enters the hole 24 and the end 30 slides over the top edge of the hole 24 until the position shown in Figure 1 is reached.

The fastener is thus hidden inside the hollow body and does not interfere with the external styling of the body. Furthermore the fastener is secure in that it cannot be released without the pivoting action, and all that is required in a reasonably symmetrical shaped body is a single nut and bolt at the opposite end to the fastener. Such a nut and bolt could easily be hidden under a name plate or other cover member.

CLAIMS

1. A fastener for two parts of a hollow body comprising a resilient member secured internally to a first part of the hollow body and projecting inwardly thereof and an orifice formed internally of a second part of the hollow body, the resilient

- member being shaped to enter the orifice and urge the two parts together, and to permit separation of the two parts by a relative pivoting movement adjacent to the abutting joint between the parts
- 5 whereby the resilient member is retracted from the orifice.
2. A fastener as claimed in claim 1 in which the resilient member comprises a substantially V-shaped strip, the apex of the V projecting
- 10 inwardly of the first part of the hollow body.
3. A fastener as claimed in claim 2 in which the resilient member comprises a substantially U-shaped strip, one of the legs of the U-shape being straight and the other leg having a
- 15 substantially V-shaped portion formed therein, the straight leg being adapted to be secured to the inner surface of the first part of the hollow body.
4. A fastener as claimed in any preceding claim in which the orifice is formed in a flange formed
- 20 inside the second part of the body and spaced from the wall of the second part.
5. A fastener as claimed in any preceding claim in which the orifice is formed in a detachable web or other member removably mounted in the
- 25 second part of the body.
6. A fastener constructed and adapted to operate substantially as hereinbefore described with reference to the accompanying drawings.