

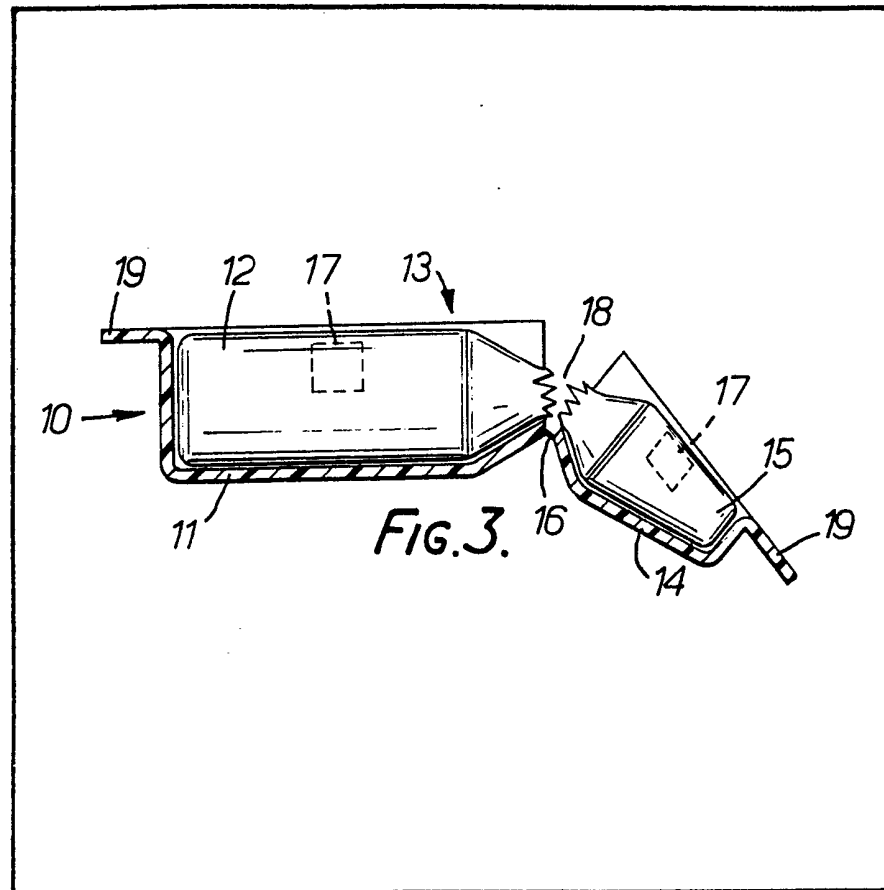
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(54) **Device for Opening a Container**

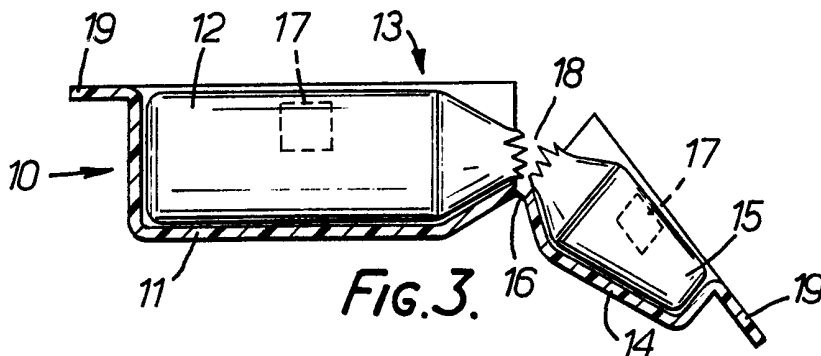
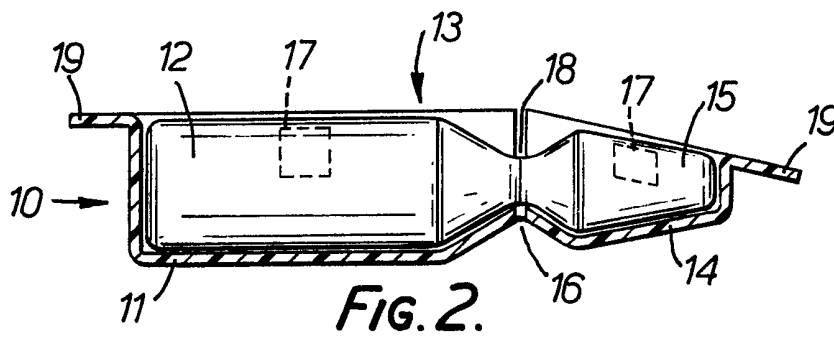
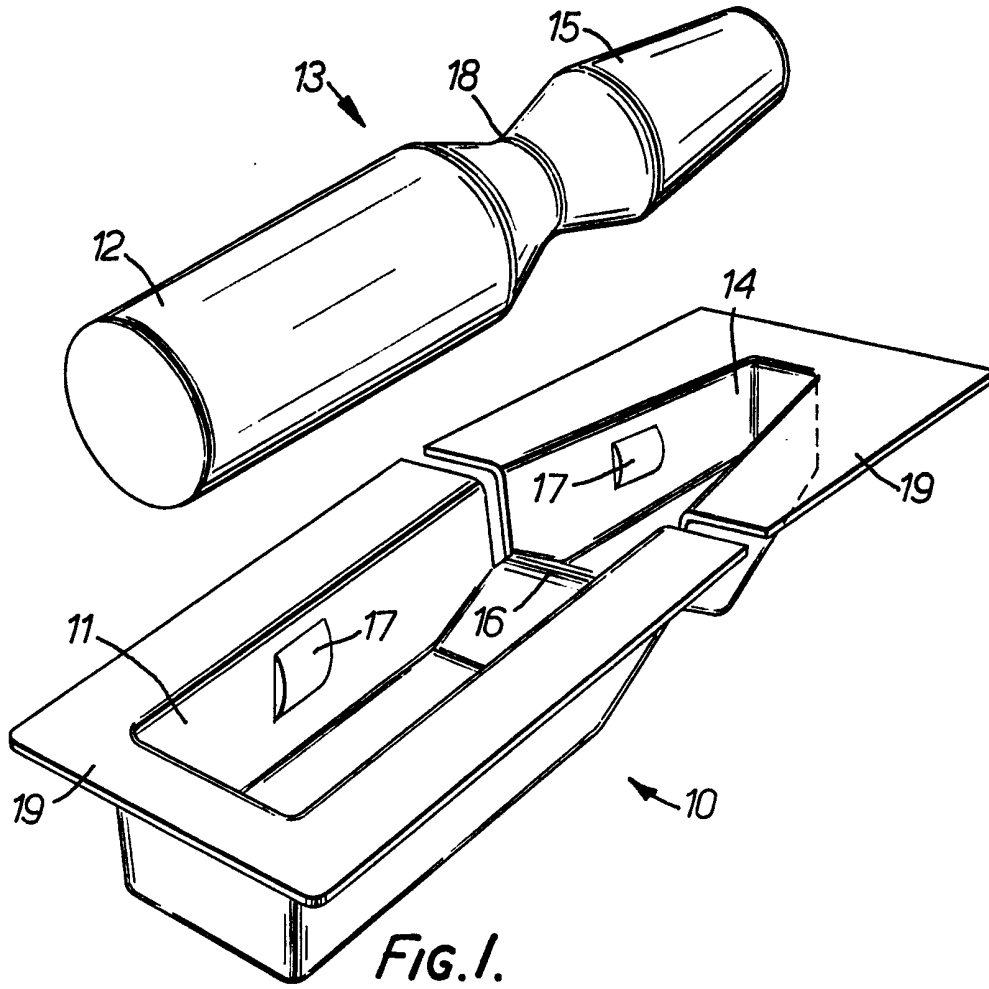
(57) A device 10 has open-topped box portions 11 and 14, connected by hinge 16, which receive and grip at 17 a glass phial 13. The head 15 of the phial may safely be snapped off at the hinge 16 by gripping the device, and

the phial within it, either side of the hinge and rotating the two portions in opposite directions. The device saves the hands of the user from contact with the fracture faces, protects the phial in transport prior to use and permits easy and safe disposal of the empty phial.



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SPECIFICATION

Device for Opening a Container

This invention is concerned, in particular, but not exclusively, with opening of glass phials containing liquids for medical treatment.

A number of drugs manufacturers are at present supplying liquid solutions for use in medical applications in glass phials. These phials have proportionally large cylindrical body section intended to carry the solution, a narrow neck and a long hollow head which when broken off allows access to the phial contents. (The contents are then generally removed by syringe). The hollow head is snapped off by hand and, even where weak point is carefully provided by the manufacturer in the neck, it is often not possible to do this without first having further weakened the neck by scoring it with a file or saw.

Even after such further weakening, the effort required to open the phial is still sufficiently great that it is difficult to control hand movements at the moment of fracture of the neck. As soon as the neck snaps there are two exposed sharp glass edges which can, and regularly do, cause cuts particularly to the fingers, during the inevitable 'hand jerk' that occurs at the moment of fracture.

It is an object of the present invention to mitigate these inconveniences, dangers and disadvantages.

According to the invention there is provided a templet for use in opening a container with a frangible neck of brittle material intermediate a hollow body and a head, the templet comprising a first portion to receive the body, a second portion to receive the head and a hinge connecting the first and second portions, said first and second portions being so shaped as, together with the associated parts of the container, to be gripped securely between digits of a user whereby, when the first and second portions are turned relative to one another about the hinge to fracture the neck of the container, the templet serves, after said fracture, to maintain the relative positions of the container fragments and the digits which provide the grip of the user, thereby saving said digits from contact with the fracture surfaces of the container neck.

The invention provides a templet with a simple mechanical hinge positioned against the phial such that the hinge point or line lies adjacent the narrow neck section. The hinge provides a pivot around which the phial body and head are rotated in opposite directions to exert a breaking force on the neck. Each of the body and head sections moves, with one of the 'wings' of the hinge, apart from the other after fracture. The templet steadies hand movements to prevent accidental cutting of the fingers and hands and, in preferred embodiments, provide a physical barrier between the sharp edges of the broken neck and the hands and fingers of the user.

While the invention has particular application to the opening of vessels made of glass and containing drugs it is also applicable to other

65 containers, particularly those made entirely of brittle materials, regardless of their contents.

In order that the templet may be cheap enough to provide as a disposable one with each phial, it may be produced as a one-piece, injection moulded component made in polypropylene.

70 Polypropylene is preferred because it is a plastics material which has the property of being suitable for moulding with an integral hinge. The use of other plastics, however, is not ruled out,

75 particularly when the device is to be used only once, in which case the long-lasting, hinge action properties of polypropylene are not necessary.

In one preferred embodiment, the templet has two open-topped box portions one each for the body and head sections of the phial, connected at the neck pivot point by an integral hinge. The phial lies just below the level of the open top of the templet and is protected by it. Such a templet doubles as part of the packaging necessary to protect the phial during handling, transit and storage.

Advantageously snap-fit formations are built into the templet so that when the phial is put into position against the templet it is held in place.

90 This helps ensure good support and protection and has the additional advantage that, when the phial has been opened and the contents removed, the glass parts are still held in place giving easier and safer disposal.

95 The portion of the templet which receives the body of the phial may be so shaped that the phial is cradled therein and the templet is free-standing in an upright position after the neck has been fractured. This is useful in particular where the phial contains sufficient liquid for more than one dose.

100 It may be desirable to give the hinge some resilience so that it tends to straighten after fracture, so bringing together the fractured edges of the neck and thereby reducing the risks of accidents caused by contact with discarded, fractured phials.

105 For a better understanding of the invention, and to show how the same may be carried into effect, reference will now be made by way of example to the accompanying drawings, in which:

Fig. 1 is a perspective view of one embodiment of templet according to the invention, and of a glass phial about to be inserted into the templet;

110 Fig. 2 is a view from one side of the templet, with the templet shown in section, of the phial housed within the templet; and

Fig. 3 is a view similar to that of Fig. 2, after fracture of the neck of the phial.

120 In the drawings, a polypropylene templet 10 has a first portion 11 in the shape of an open-topped box of dimensions appropriate to receive the body part 12 of a glass phial 13, a second portion 14 also in the shape of an open-topped box and with dimensions appropriate to receive the head part 15 of the phial 13, and a hinge formation 16 connecting the first 11 and second 14 portions. Projections 17 provide a snap-fit retention of the phial 13 within the templet 10 so

that the neck 18 of the phial lies over the hinge 16, as shown in Fig. 2, which also demonstrates that the phial is well protected from damage prior to use by the walls of the templet 10.

5 To snap off the head 15 of the phial 13, the first portion 11 and body part 12 are gripped between the fingers and thumb of one hand of a user, and the second portion 14 and head part 15 are gripped in the other hand. With the phial held
10 such that the contents will not run out at the neck, the hands are flexed to rotate them in opposite directions to snap the neck 18 at the hinge 16. For this purpose, the hinge 16 contacts the neck 18, although in other embodiments this may not be necessary. Fig. 3 shows the neck 18 broken, with the phial fragments safely retained in the templet 10 by the snap-fit projections 17.

15 The templet 10 has wide marginal portions 19 which absorb pressure from the digits of the user during use. The phial is protected from accidental damage at all times and the jagged edges of the broken neck 18 are held safe within the templet 10 after use of the phial.

Claims

25 1. A templet for use in opening a container with a frangible neck of brittle material intermediate a hollow body and a head, the templet comprising a first portion to receive the body, a second portion to receive the head and a
30 hinge connecting the first and second portions, said first and second portions being so shaped as, together with the associated parts of the container, to be gripped securely between digits of a user whereby, when the first and second
35 portions are turned relative to one another about the hinge to fracture the neck of the container, the

templet serves, after said fracture, to maintain the relative positions of the container fragments and the digits which provide the grip of the user, thereby saving said digits from contact with the fracture surfaces of the container neck.

40 2. A templet as claimed in claim 1 wherein the first and second portions have the form of an open-topped box.

45 3. A templet as claimed in claim 1 or 2 and provided with snap-fit formations for holding the container in place relative to the templet.

50 4. A templet as claimed in any one of the preceding claims, so shaped as to support the container in an upright position of the container after the neck of the container has been fractured.

55 5. A templet as claimed in any one of the preceding claims wherein said hinge is resilient thereby endowing the templet with a tendency to straighten after fracture of the neck of a container so bringing together the fracture surfaces of the neck.

60 6. A templet as claimed in any one of the preceding claims, being a one-piece moulding of a plastics material.

7. A templet as claimed in claim 6 wherein said plastics material is polypropylene.

65 8. A templet substantially as hereinbefore described with reference to, and as shown in, the accompanying drawings.

9. A templet as claimed in any one of the preceding claims, in combination with a container.

70 10. A templet as claimed in claim 9 wherein said container is a glass phial.

11. A templet as claimed in claim 10 wherein said phial contains pharmaceutical composition.