

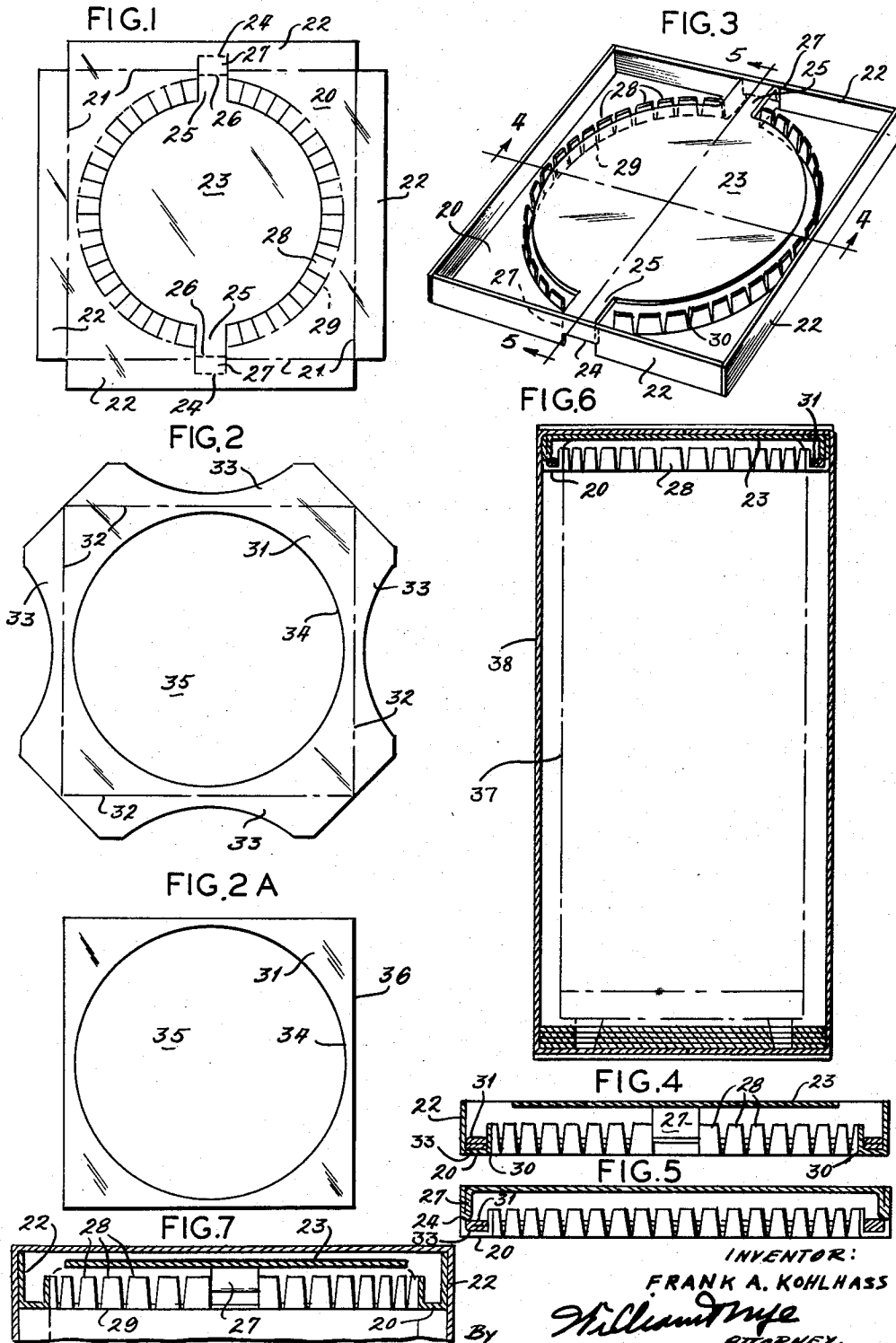
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POSITIONING AND RETAINING MEMBER

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POSITIONING AND RETAINING MEMBER

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The invention pertains broadly to improvements in an interior positioning and retaining device for an article carrying container having a top closure, said retaining device constructed of solid fibre, corrugated fibreboard or any other suitable bendable material. In particular the invention pertains to a retaining assembly that may be inserted over and in engagement with an article such as a water heater in a container, positioning and retaining the article in a fixed spaced relation to the side walls and the top closure of the container.

The positioning and spacing devices commonly used to fixedly position the upper portions of a water heater in a container engage the protruding pipe nipples extending above the outer shell of the heater. This has proven to be a highly satisfactory method, however, in some models of water heaters, in particular electric water heaters, the pipe nipples are not conveniently located to permit this procedure. It is then necessary to retain the heater by means encircling or engaging the perimeter of the outer shell of the heater. Such a procedure is contemplated in the present invention.

Since the shell of the heater is easily deformable and subject to damage and defacing it is necessary that a retaining means engaging said shell be accurately and fixedly positioned in the container to engage the heater at only the desired points of contact and further, this retaining means must afford a contacting surface in flatwise relation to the shell of the heater rather than an edgewise abutting relation as commonly used in retaining means engaging pipe nipples.

There has been a continuing need for a means of retaining the upper portion of a water heater or other article in a fixed spaced relation to the side walls and top closure of a container in the absence of durable and rigid top projections such as pipe nipples. In is therefore, an object of this invention to provide an internal positioning and retaining means to retain an article in a fixed spaced relation within a container.

An important object is to provide in a container an internal assembly that may be positioned over and in engagement with an article to render said article in a fixed spaced relation to the side walls and top closure of a container.

Another important object is to provide a retaining member in a container adapted to engage a transverse section of an article and having a foldably connected portion adapted to overlie the article, the retaining member being suspended therefrom.

Another object is to provide a retaining member having marginal flaps with free end edges in abutment with the inner face of the top closure of the container and thereby spacing the member in a fixed spaced relation to the top closing panel of the container.

Other objects and advantages of this invention will be apparent to those skilled in the art upon a full and complete understanding of the construction of the positioning and retaining member. The accompanying draw-

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ings illustrate an embodiment of the invention and form a part of the specification. Like numerals and symbols therein appearing refer to like parts wherever they occur.

In the drawings:

Fig. 1 is a plan view illustrating the retaining member of the internal retaining and positioning assembly;

Fig. 2 is a plan view illustrating the reinforcing member with marginal flaps of the internal retaining and positioning assembly. Fig. 2A illustrates the alternative simplified form without the additional reinforcement of the marginal flaps;

Fig. 3 is a perspective view of the erected retaining member of the internal retaining and positioning assembly;

Fig. 4 is a cross sectional view through line 4—4 of Fig. 3, with the reinforcing member of Fig. 2 included;

Fig. 5 is a cross sectional view through line 5—5 of Fig. 3 with the reinforcing member of Fig. 2 included;

Fig. 6 is a cross sectional view of a container showing the internal positioning and retaining assembly and a bottom positioning pad retaining a water heater in fixed position;

Fig. 7 is a cross sectional view of a container cut-away to show a retaining member without reinforcing member adapted to hold a relatively small article in fixed relation to the sides and top closure of the container.

The blank for the retaining member, illustrated in Fig. 1, comprises a central panel 20 defined by flap scores 21. The outer marginal flaps 22 are hingedly connected to the central panel 20 by flap scores 21. A partially disconnected panel portion 23 is foldably connected to at least two marginal flaps 22 at terminal scores 24 by means of the extensions 25 of the panel portion. Extension scores 26 in combination with scores 24 define a vertical spacing panel 27 of the extensions.

The internal upturned flanges 28 are hingedly connected to the central panel 20 by scores 29 defining an opening 30, illustrated in Figs 3 and 4, adapted to receive a water heater 37 shown in Fig. 6 or other article in a container 38.

The blank for the reinforcing member, illustrated in Fig. 2, comprises a panel 31 defined by flap scores 32 which in turn define reinforcing marginal flaps 33. An internal marginal edge 34 defines an article receiving opening 35. The reinforcing marginal flaps 33 are adapted to fold downwardly and inwardly about flap scores 32 through 180° to a contacting flatwise relation to the panel 31. The combined reinforcing marginal flaps 33 in the folded position are coextensive to the central panel 31.

Another embodiment of the reinforcing member is illustrated in Fig. 2A wherein the panel 31 is defined by marginal edges 36 and having an internal marginal edge 34 defining article receiving opening 35.

The reinforcing member panel 31, Figs. 2 or 2A is coextensive to that part of the area of the retaining member central panel 20, Fig. 1, determined by flap scores 21 and internal flanges scores 29.

In order to erect the positioning and retaining assembly as illustrated in Fig. 3 the marginal flaps 22 are folded upwardly about flap scores 21 to a right angular relation to central panel 20. Simultaneously the vertical spacing panels 27 are folded upwardly about terminal scores 24 and the panel portion 23, foldably connected at extension scores 26, thereby attains a spaced relation to the central panel 20.

The reinforcing member shown in Fig. 2 may then be inserted between the central panel 20 and the panel portion 23 and positioned in juxtaposed coinciding relation to the central panel, the internal marginal edge 34

substantially coinciding with the internal flange scores 29 of the retaining member and the outer marginal edge, defined by flap score 32, abutting the inner facing of the upturned marginal flaps 22 of the retaining member. A cross sectional view is illustrated in Fig. 4 taken through lines 4—4 of Fig. 3 illustrating the embodiment of the reinforcing member Fig. 2. Fig. 5 illustrates another cross sectional view of the reinforcing member through lines 5—5 of Fig. 3.

The positioning and retaining assembly is positioned over a water heater or other article in a container as illustrated in Fig. 6. The internal flanges 28 are automatically folded upwardly by the article being packaged as the assembly is placed in position, the external facing of the flanges 28 abutting the internal marginal edges 34 of the reinforcing member and the internal facing thereof in flatwise contacting relation to a perimeter of the article, engaging and retaining said article in a fixed relation to the side walls of the container.

Simultaneously the spaced panel portion 23, in flatwise contacting relation to the top end of the water heater or other article is in fixed spaced relation to the central panel 20 which is in turn in fixed spaced relation to the top closure of the container by the abutment thereto of the free end edges of the marginal flaps 22, retaining the packaged article in a fixed contacting relation to the top closure of the container.

An embodiment of the invention illustrated in sectional view, Fig. 7, is adapted to the retention within a container of relatively smaller, lighter articles, as for example table radios. In this embodiment the marginal flaps 22 are of relatively greater length than the spaced relation of the panel portion 23 to the central panel 20 of the retaining member. The abutment of the free end edges of the marginal flaps 22 against the inner face of the container top closure provides a definite spaced relation between the article being packaged and the container top closure.

It is to be understood that the embodiments herein described are illustrative and not restrictive, and it is also to be understood that the invention may be susceptible of embodiment in other modified forms, and that all such modifications which are similar and equivalent hereto come equally within the scope of the claims next appearing.

What I claim is:

1. In a container, having opposed pairs of upstanding side walls and top and bottom closure panels, for packaging a water heater or other fragile article; an interior positioning and retaining assembly comprising a retaining member and a reinforcing member encircling and retaining the upper portion of the packaged article in a fixed spaced relation to the side walls of the container, the two members of the assembly coactive in an interleaved relation, the retaining member having a central panel coextensive to a transverse section of the container and upturned outer marginal flaps, the free end edges of said marginal flaps in abutting relationship to the interior face of the container top closure, in the central panel of the assembly retaining member, a partially disconnected panel portion hingedly connected to at least two marginal flaps, the central panel of the retaining member having internal upturned flanges defining at least in part an opening, said flanges being in essentially right angular relation to the central panel of the member and in flatwise contacting relationship with the side walls of the article packaged, the reinforcing assembly member interleaved between the central panel of the retaining member and the partially disconnected panel portion thereof, said assembly reinforcing member coextensive to the central panel of the retaining member and having an internal margin defining a void, said internal margin in abutting relation to the upturned internal flanges of the retaining member; whereby, the positioning and retaining assembly will overlies and engage a packaged article in fixed spaced relation to the side walls and top closure of the container.

2. The interior assembly set forth and claimed in claim 1, wherein the reinforcing member is further reinforced by means of flaps hingedly connected to the outer margins of the panel of the reinforcing member, said reinforcing flaps being folded downwardly and inwardly 180° to a flatwise contacting relation and coextensive with the panel of the reinforcing member.

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