

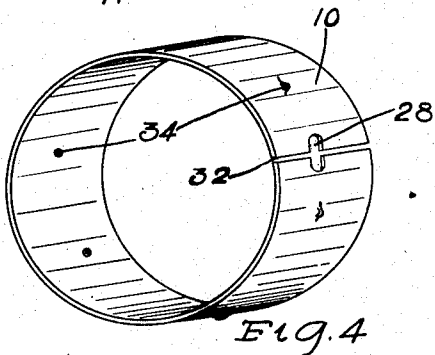
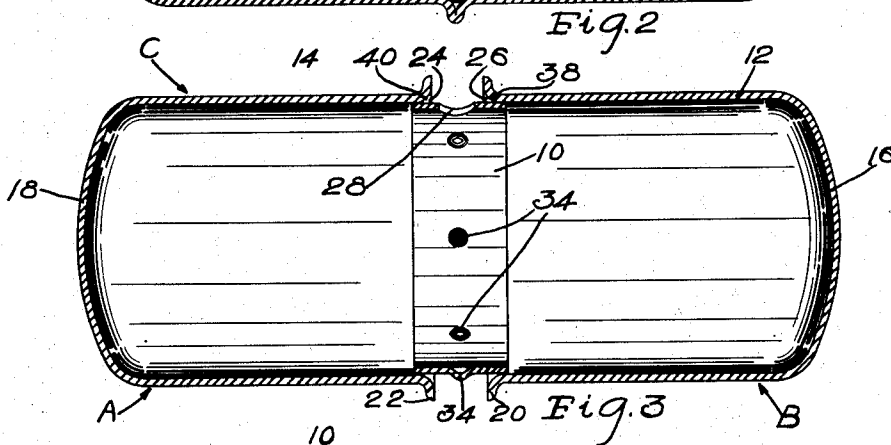
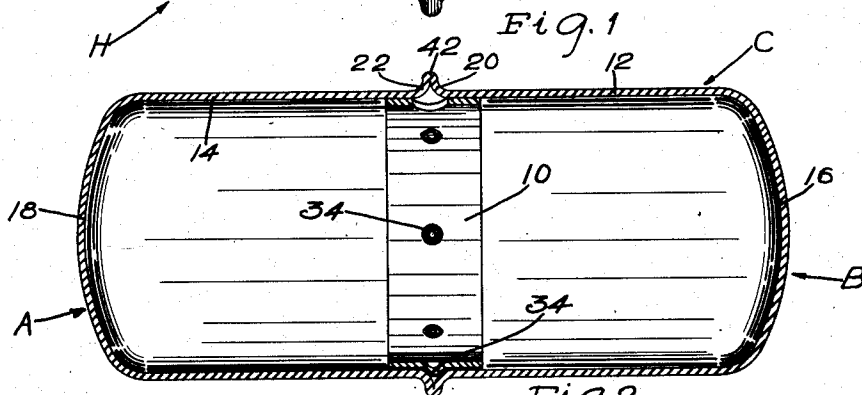
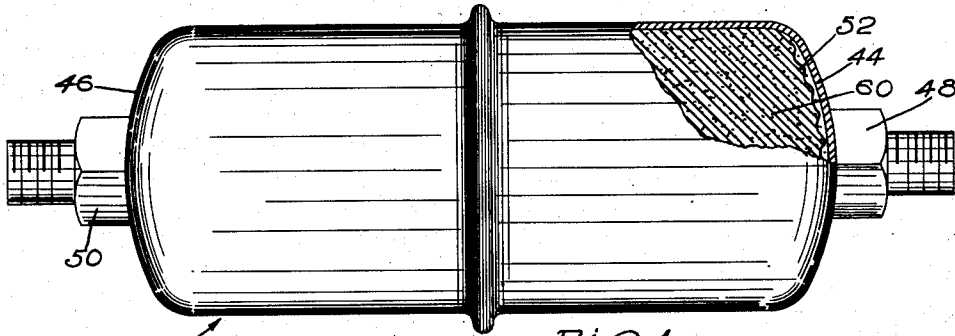
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METHOD OF FILLING AND SEALING METAL CONTAINERS

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METHOD OF FILLING AND SEALING METAL CONTAINERS

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This invention relates to a method for assembling, filling, and sealing containers or receptacles made of metal.

An object of this invention is to provide a method of assembling and filling metal containers which includes the steps of extending the container prior to filling and bringing the parts of the container to the normal position when the filling is completed.

Another object of the invention is to provide a method for filling metal containers in which the total outside area is decreased after filling to compact the contents.

A further object of the invention is to provide a method for sealing filled metal containers by welding in which the heat required for fusion of the metal is kept away from the contents of the container.

Still another object of this invention is to provide a method of filling and sealing in a container, material which it is desirable to compress.

Our invention further resides in the combination, construction and arrangement of parts shown in the accompanying drawings, and while we have illustrated therein preferred embodiments it is understood that the same are susceptible of modification and change without departing from the spirit of our invention.

In the drawings:

Figure 1 illustrates one form of this invention provided with fittings for the reception of conduits.

Figure 2 is a longitudinal cross sectional view of the device of this invention after it has been sealed.

Figure 3 exemplifies the device in Figure 2 in assembled and extended position to be filled.

Figure 4 is a perspective view of the heat dissipating or connecting element used in practicing this invention.

Referring in detail to the drawings and more particularly to Figure 3 the letter C indicates generally one form of the embodiment of this invention in which the side walls 12 and 14 are integral with the end walls 16 and 18 respectively. The side walls 12 and 14 have annular flanged or outturned portions 20 and 22 respectively which cooperate when the shell A, which is comprised of the end wall 18 and side wall 14, and the shell B, comprised of the end wall 16 and side wall 12, are brought together, as shown in Figure 2, for fusing.

The shells or sections A and B may be of any gauge metal depending on the use to which the

container is put, the size, shape, etc. of the container. The present embodiment shows the container as a round drum construction but it is understood that this is for illustration only and the construction is not to be limited in the manner shown. As a matter of fact it may be rectangular, conical and divers other geometrical figures. The present embodiment shows the sections A and B symmetrical in construction and similar in shape but this too is only for purposes of exemplification. The shells A and B may be totally unlike in construction so long, of course, as the annular flanged ends 20 and 22 cooperate to form a joint which can be fused.

A connecting or heat dissipating element 10 slidably fits into the openings 24 and 26 of the shells A and B. This element 10 has many functions. It forms a connecting means between the shells A and B, provides a means for filling the container with comminuted or finely divided particles and allows for compressing of the contents if this is desirable, and provides a heat dissipating element or shield which prevents excess heat from entering the container during the fusion of the shells.

The element 10 is divided or disjoined at 32 to give a spring effect to the element so that it will frictionally engage the shells A and B into which it slidably moves axially. Raised portions 34 are formed on the element 10 and co-act with the rounded edges 38 and 40 of the side walls 12 and 14 respectively to limit the axial travel of the heat dissipating element. This construction assures the centering of the filling element 10 below the joint 42. Contents not adaptable for insertion through the opening 28 may be put into the container before it is assembled, that is, before the shell A or B has been slipped over the element 10.

Figure 1 illustrates one application of a modified form of the invention applied to a refrigeration circuit, not shown. The modified form is substantially of the same construction as the form previously described except the end walls 44 and 46 are provided with openings for the reception of fittings 48 and 50 which are adapted to connect a refrigeration line, not shown. The fittings 48 and 50 may be secured to the end walls 44 and 46 respectively in any suitable manner such as welding. The container illustrated in Figure 1 is filled with a dehydrating material 60—in this case silica gel—and is used to remove moisture from a refrigeration system. A screen 52 disposed in the ends of the receptacle H covers

the openings into the fittings 48 and 50 to prevent the finely divided particles of the silica gel from passing into the system, not shown. The container H has the side walls, heat dissipating element, and annular flange the same as the container C heretofore described.

If the device of this invention is used as shown in Figure 1 where it is desirable to have the contents thereof compact but not in a compressed state the volume of the container may be calculated in the sealed position shown in Figure 2 and the volume of dehydrating agent corresponding to this calculated volume put into the container while in its extended position and then the shells A and B moved axially toward each other until the flanges 20 and 22 contact. It is while the flanges are in this abutting position that they are fused. The degree of compactness of the substance in the container can be regulated by varying the extension of the shells A and B during filling and/or by the amount of substance added to the container when filling.

During the fusing heat is dissipated which would be thrown directly onto the contents of the container if it were not for the heat dissipating element 10 which absorbs the heat and transfers it along the side walls 12 and 14 where it is radiated to the outside surrounding media. This heat transfer to the side walls prevents the fusion and/or firing of the contents of the container.

Having described the invention we claim:

1. The method of filling and sealing a drum having a plurality of sections and one less connecting element than sections, the connecting element having an opening therethrough, which includes the steps of spacing said sections axially to provide access to the interior of said sections,

connecting the sections by the element with the opening therein exposed, filling said sections through the opening through the element, bringing the adjacent ends of said sections into juxtaposition to cover the opening in the connecting element, and joining the adjacent ends of said sections by fusion thereof.

2. The method of assembling, filling, compressing and sealing the material in a container comprising a plurality of sections and having one less connecting element than sections, said connecting element having an opening therethrough which includes the steps of spacing said sections axially, inserting the connecting element between each two of said sections, filling said sections through the opening in said element while said sections are all in spaced relation, bringing the adjacent ends of said sections into abutting relation and thereby covering the opening in said element and compressing said material, and fusing the abutting ends of said sections.

3. The method of forming a plurality of sections and a connecting element into a container, said element having an opening therethrough filling and sealing the same which includes the steps of spacing said sections axially, connecting each two of said sections by the element substantially coterminous with the ends of said sections, filling said sections through the opening in said element, bringing the adjacent ends of said sections into contact and thereby covering the opening in and enclosing said element within said sections, and fusing the contacting ends of said sections.

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