

Nov. 17, 1953

J. D. BALDWIN, JR., ET AL

2,659,128

METHOD OF MAKING DEHYDRATORS

Filed Jan. 21, 1950

2 Sheets-Sheet 1

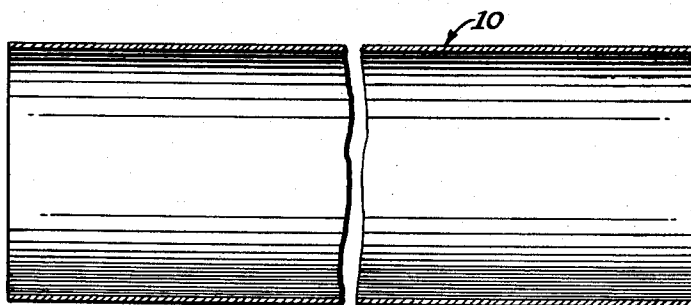


Fig. 1

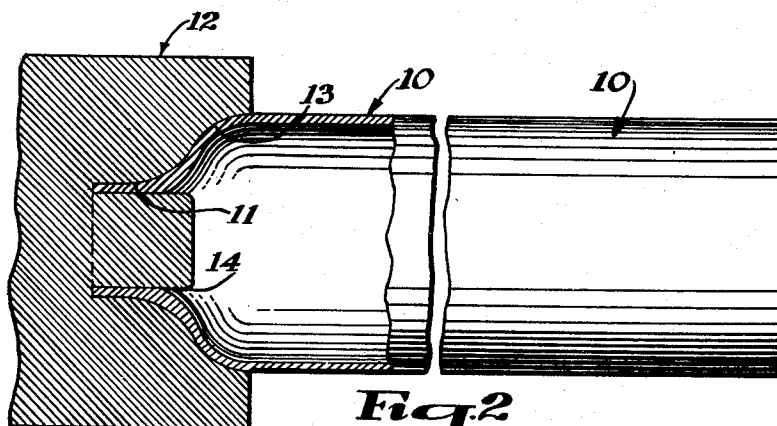


Fig. 2

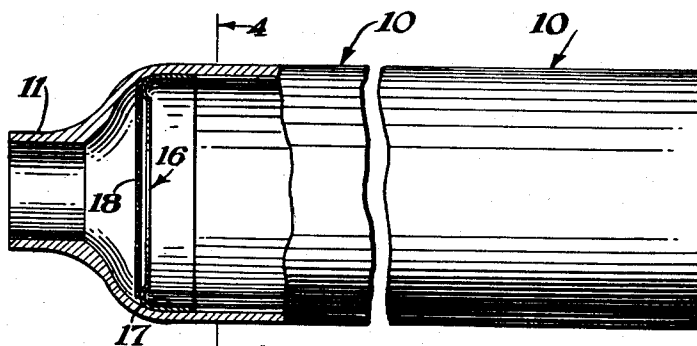


Fig. 3

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2 Sheets-Sheet 2

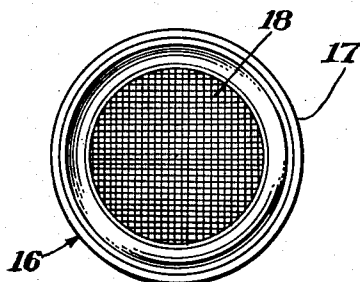


Fig. 4

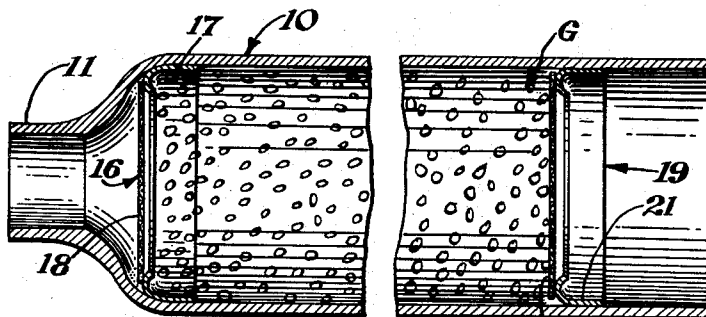


Fig. 5

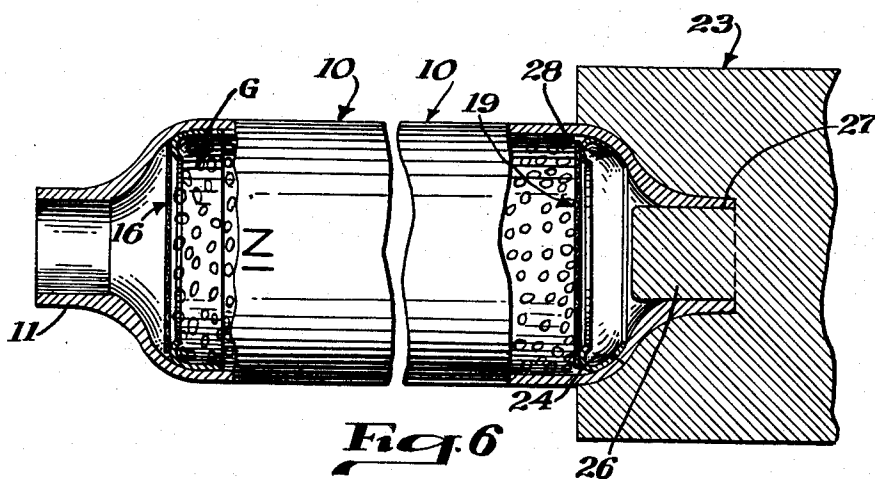


Fig. 6

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METHOD OF MAKING DEHYDRATORS

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Application January 21, 1950, Serial No. 139,944

3 Claims. (Cl. 29—148.2)

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This invention relates to dehydrators and methods of making the same. Dehydrators are now sold in the trade, particularly for use in refrigeration installations wherein a dehydrating agent such as silica gel is permanently mounted in a container, preferably between screens, the opposed ends of the container being formed for connection in the refrigeration lines.

A principal object of the invention resides in a reduction of manufacturing costs of such units, this being an important feature because in many installations the units are replaced and the old ones discarded from time to time.

Another object of the invention resides in a method of obtaining a firm packing of the dehydrating material between the screens without increasing manufacturing costs. This is accomplished by a novel operation wherein the final spinning or necking-down of one end of the container serves to move a screen mounted in the necked-down zone toward an opposed screen and firmly pack the dehydrating material between the screens.

The manner in which these and other objects are accomplished will be apparent from the following detailed description of a preferred embodiment of our invention.

In the drawings:

Fig. 1 shows a tube going to form the container;

Fig. 2 shows the first spinning or necking-down operation;

Fig. 3 shows the first screen pressed in place within the container;

Fig. 4 is an end view of the screen;

Fig. 5 shows the dehydrating material and the second screen in place; and

Fig. 6 shows the final spinning or necking-down operation and simultaneous packing of the dehydrating material.

Referring to the drawings, we prefer to form the body of the container from a suitable cylindrical or tubular element 10, or at least the end portions of the container which are to be spun or neck-down are to be cylindrical. As seen in Fig. 2, a neck 11 is formed on the container by a spinning tool 12 which may be formed in accordance with the invention of Harold A. White, Serial No. 135,903, filed December 30, 1949. The tool has a concave wall 13 for reducing the end portion of the cylinder and a pilot nose 14 which holds the neck 11 to the desired internal diameter for connection to a fitting.

After the first spinning operation a first screen

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assembly 16 (as seen in Fig. 3) is inserted. This screen has a peripheral annular flange 17 and a fine mesh screen 18 bonded thereto. Peripheral flange 17 is of such diameter that it firmly engages the wall of the cylinder and it is inserted in the container until it comes against the necked-down portion thereof.

The next step in the formation of the unit is shown in Fig. 5 wherein a measured quantity of dehydrating material such as calcium chloride or silica gel, indicated at G, is placed in the container against the first screen 16. Next, a second screen assembly 19 is slipped into place against the dehydrating material, which screen has a peripheral flange 21 and a screen element 22 bonded thereto.

The amount of dehydrating material and the dimensions of the second screen are carefully chosen so that when (as seen in Fig. 6) the associated end of the container is spun or necked-down a novel action takes place. For example, the spinning tool 23 may be a duplicate of that just described, and includes a concavity 24 and a pilot nose 26. When relative rotation between the tool and sleeve is effected, a second neck 27 is formed by the concavity 24 of the tool. This spinning operation on the container simultaneously deforms the peripheral sleeve 28 of the screen 19, the action being such that the screen 19 is urged toward the other screen 16. Thus, with the proper amount of dehydrating material having been placed between the screens, the necking-down operation packs the dehydrating material to the desired degree.

Thus, it can be seen that a container having two screens with a dehydrating material therebetween can be quickly and economically formed by two simple, rapid spinning operations, there being the additional advantage that a suitable predetermined degree of packing or compression of the dehydrating material may be provided.

Having completed a detailed description of our invention so that other skilled in the art may practice the same, we contemplate that the appended claims and not the aforesaid embodiment be determinative of the scope of our invention.

What is claimed is:

1. The method of making a dehydrator comprising the steps of fastening a screen in a container having an open mouth, placing a dehydrating agent in the container and against the screen, placing a second screen having a peripheral flange in the mouth of said container and against said dehydrating material, and

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spinning the mouth of said container around and axially outwardly of said screen to form a neck thereon with the metal at the larger diameter zone of the neck deforming the flange on said second screen to move the screen relative to the container causing it to press against said dehydrating material.

2. The method of making a dehydrator comprising the steps of necking down one end of a cylindrical container, pressing a circular screen into said container against said necked-down portion, placing a dehydrating agent in the container and against said screen, placing a second screen having a peripheral flange in the mouth of said container and against said dehydrating material, and simultaneously necking down the mouth of said container around and axially outwardly of said screen to form a neck thereon and causing the metal at the larger diameter zone of the neck to deform the flange on said second screen and move the latter toward said first screen to press the screen against said dehydrating material.

3. A method of forming a container for loose material comprising the steps of inserting a material retainer in a container engaging the walls

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of said container, placing loose material in said container against said retainer, placing a second material retainer in said container positioned against said material, and deforming said walls inwardly progressively from a point outwardly of said second retainer toward said second retainer forming inclined converging walls, a portion of said second retainer being engaged by said converging walls thereby creating an axial force on said retainer, said axial force causing said second retainer to move toward said material.

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