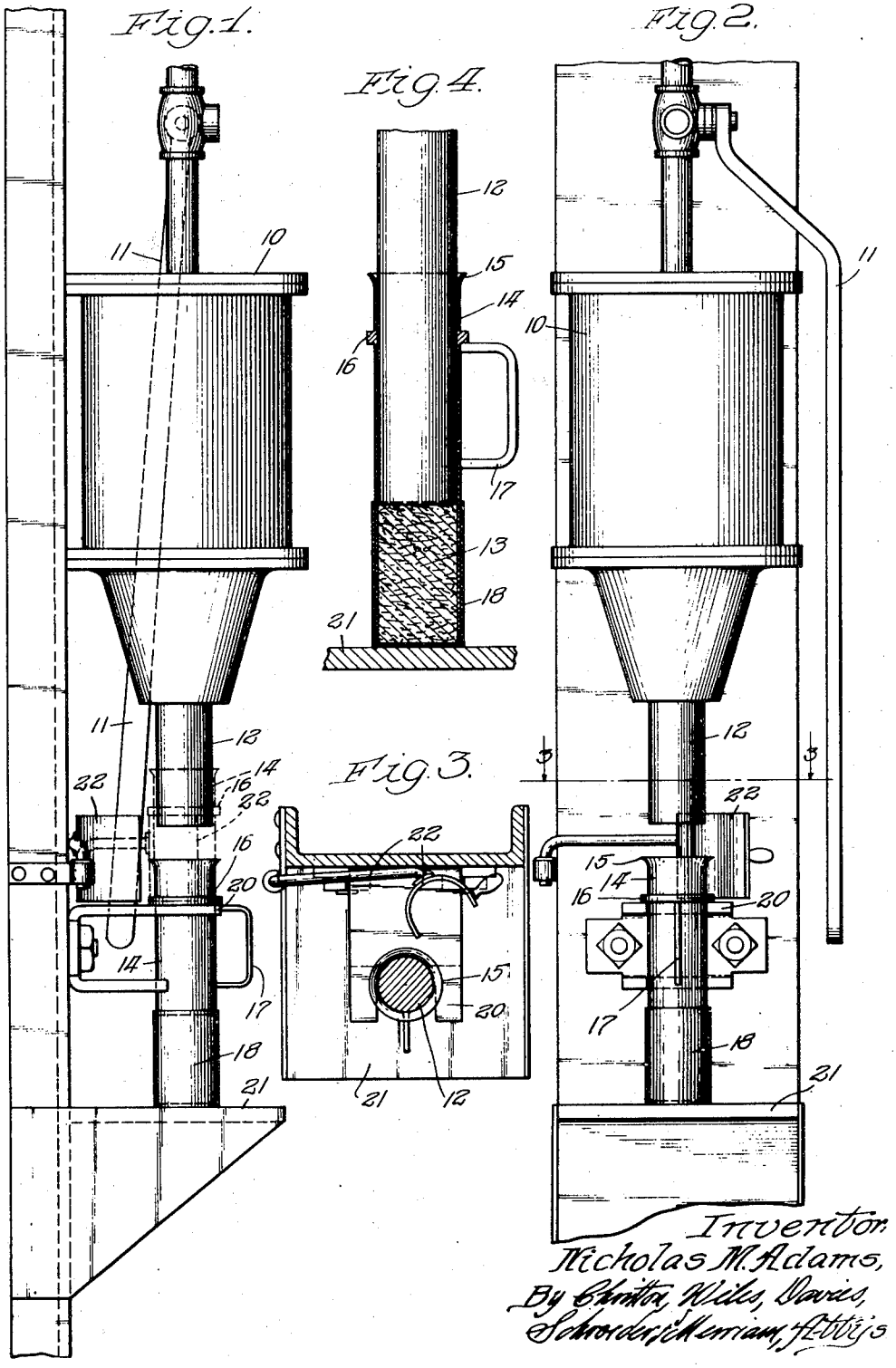
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COMPESSING DEHYDRATED FOODS

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COMPRESSING DEHYDRATED FOODS

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9 Claims. (Cl. 99—171)

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This invention relates to a method of compressing dehydrated foods and to the package so produced.

Dehydrated food products have been produced for many years but one of the disadvantages thereof has been the bulk of the material in reference to its weight. Many of these products will compress but when efforts are made to package the goods a large loss ensues because the compressed products have a property of expanding slowly after compression, as a result of which they frequently rupture or distort the containers.

In accordance with the present invention, a very simple method of overcoming this breakage and distortion is provided, by compressing the product within a thin rigid sleeve whose outer dimension and shape is that of the ultimate container, and then extruding the material from the sleeve into the container after compression. The thickness of the sleeve is selected with reference to the product and to the container so that the expansion of the material tightly fills the container, but does not distort or rupture.

The invention is illustrated in the drawings, in which Figure 1 is a side elevation partly in section of a suitable apparatus for carrying out the method; Figure 2 is a front elevation likewise partially in section; Figure 3 is a sectional plan view taken along the line 3—3 in Figure 2; and Figure 4 is an enlarged sectional elevation showing the sleeve, container and compressed material before withdrawal of the sleeve.

The apparatus comprises a conventional hydraulic press 10 operated by the arm 11 and provided with a plunger 12. Dehydrated material 13 to be compressed is inserted within the filling tube or sleeve 14 to the desired level. The sleeve is provided with a flared neck 15 below which is a supporting collar 16 and a handle 17. Each end of the tube is of course open. The inner diameter of the sleeve corresponds to the outer diameter of the plunger 12, and the outer diameter of the sleeve is such as to fit closely within the container 18. The container is here illustrated as circular in cross-section but the invention is not limited to any particular cross-section of container. Usually the container is of metal, but with the present invention it may be made from non-ductile material as well. The container should, however, be uniform in cross-section from bottom to top. After the sleeve has been filled to the desired level (during which operation it may be placed upon a suitable table to close the bottom), it is carried by the handle 17 and placed within the bracket 20 which supports the collar

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16. The container 18 is already in place on the table 21 and the sleeve is fitted within it and rests upon the bottom of the container. The plunger 12 is then forced down through the sleeve upon the dehydrated material and compresses it to the form shown in Figure 4. The pressure employed is conventional and may amount to, for example, 1400–1500 lbs. per sq. in. Of course the amount of pressure and the amount of compressive movement of the plunger will vary with different types of materials. In some cases it may be necessary to heat or cool the material in order to produce proper compressive conditions, but these conditions are not part of the present invention.

After the material has been compressed within the sleeve and container, the sleeve is lifted from the bracket 20 and the pivoted bracket 22 swung into position below the plunger, and the sleeve then inserted in it, as shown by the dotted line in Figure 1. The plunger is again actuated and forces the compressed material from the sleeve into the container.

It will be observed that by this method the compressed material forms a block, smaller on each side by the thickness of the sleeve wall than the container. The space remaining, which is filled by air, is evacuated under suitable evacuating equipment, and the container hermetically sealed in suitable fashion. The compressed material then slowly expands until it comfortably fills the container without rupturing it or distorting it.

A suitable amount of space is provided in a circular cylindrical container 2¾ inches in internal diameter at the seam by employing a sleeve having that external diameter and an internal diameter of 2⅝ inches. With these dimensions, such products as meat, rice, hash and potatoes may be suitably compressed under normal pressures and will then exert no substantial pressure against the tin or container.

The products herein referred to are dehydrated sufficiently so that they will normally keep in the atmosphere. Usually this means a moisture content below 10%, usually 6–7%.

The operations illustrated herein are manual but may obviously be carried out entirely by automatic means through the use of suitable machinery.

The term "cylinder" is not limited to a circular cylinder.

The foregoing detailed description has been given for clearness of understanding only, and no unnecessary limitations should be understood therefrom.

What I claim as new, and desire to secure by Letters Patent, is:

1. The method of packaging compressed dehydrated food material having a substantial tendency to expand slowly to a limited degree after compression, which comprises first compressing the material within a cylindrical sleeve having a thin wall and an outer diameter slightly less than the inner diameter of a predetermined container having substantially rigid walls, the amount of compression being of the order of 1500 lbs. per square inch, then extruding the material from the sleeve after the compressing in a block into the predetermined container, and sealing the same.

2. The method as set forth in claim 1, in which the container is placed under high vacuum immediately prior to sealing.

3. The method as set forth in claim 1, in which the compressed material is largely dehydrated meat.

4. The method as set forth in claim 1, in which the compressed material is largely dehydrated potatoes.

5. The method as set forth in claim 1, in which the compressed material is largely dehydrated rice.

6. The method as set forth in claim 1, in which the bottom of the sleeve is closed by the container during the compression operation.

7. The method of packaging compressed dehydrated food material having a substantial tendency to expand slowly to a limited degree after compression, which comprises first compressing the material within a cylindrical sleeve having a thin wall and an outer diameter slightly less than the inner diameter of a predetermined container having substantially rigid walls, the amount of compression being such as substantially to decrease the volume of the material and to impart thereto a substantial and powerful tendency slowly to expand after release of the pressure, then extruding the material from the sleeve after the compressing in a block, introducing the block into the predetermined container, and sealing the same.

8. The method of packaging compressed dehydrated food material having a substantial tendency to expand slowly to a limited degree after compression, which comprises first compressing the material within a sleeve having a thin wall and an outer diameter slightly less than the inner diameter of a predetermined container having substantially rigid walls, the amount of compression being such as substantially to decrease the volume of the material and to impart thereto a substantial and powerful tendency slowly to expand after release of the pressure, then extruding the material from the sleeve after the compressing in a block, introducing the block into the predetermined container, and sealing the same.

9. The method of packaging dehydrated meat products in a container having substantially rigid walls which comprises first compressing the meat product to substantially its minimum volume within a cylindrical sleeve having a thin wall and an outer diameter slightly less than the inner diameter of the container, then extruding the compressed material from the sleeve in a block into the container, substantially removing air from the container, and sealing the same.

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