May 8, 1928. 1,668,755

G. BERGMANN

PACKING

Filed Jan. 27, 1927

Fig. 1.

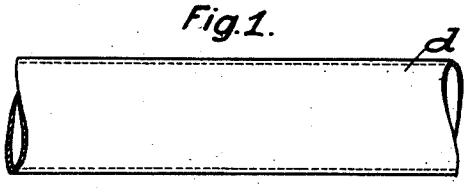


Fig. 2.

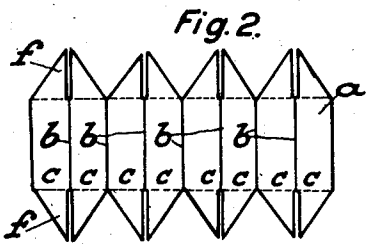


Fig. 4.

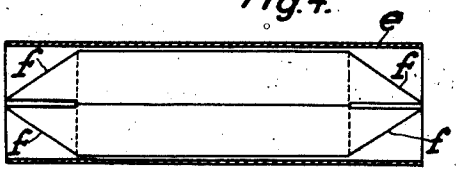


Fig. 5.

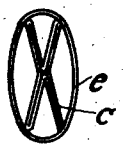


Fig. 3.

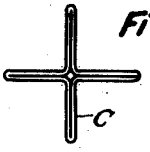


Fig. 6.

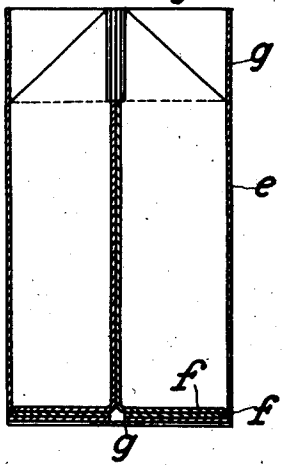


Fig. 8.

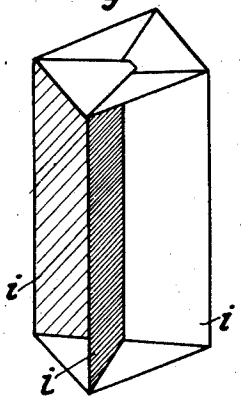


Fig. 10.

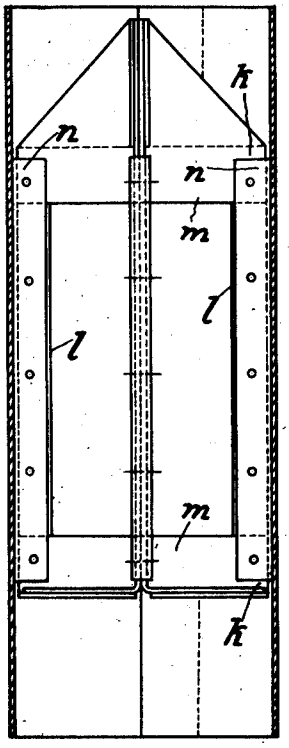


Fig. 7.

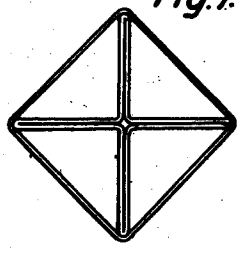
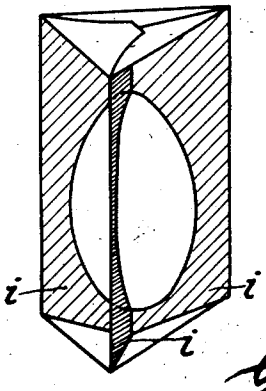


Fig. 9.



Inventor:

Georg Bergmann

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UNITED STATES PATENT OFFICE.

GEORG BERGMANN, OF BERLIN-WILMERSDORF, GERMANY.

PACKING.

Application filed January 27, 1927, Serial No. 164,110, and in Germany September 8, 1925.

My present invention relates to packings in general, and has for its object to provide a packing with transparent faces showing visibly the quality and quantity of the goods therein contained. Heretofore packings of this kind have always had the drawback of lacking stability and were apt to be easily bent out of shape so that the commodities therein contained often became damaged. They were further difficult and expensive to manufacture. The packing according to my present invention consists of two parts, to-wit, the transparent cover and the frame. The cover is cut to any required length from a piece of transparent material turned out in tubular form in any desired length. The frame consist of a strip of cardboard or similar material which is generally creased into a number of like sections and so folded together that a frame of star-shaped cross section is formed. This frame is inserted in folded condition, that is to say, with as little spacial extent possible, into the transparent tubular cover, and then opened to the desired star-shape, stretching the cover under tension into a prism which may have three or more faces according to the shape of the star-shape of the frame. The dimensions of the frame and the tubular cover must be of such proportions that the cover is drawn tight in the frame when the latter is extended. Each section of the strip out of which the frame is formed, is provided on each of its two front faces with a flaplike projection cut in such manner that it can be folded at right angles to the plane of the section, thus closing the space between the walls of the frame and the outer cover at both ends in such manner that the space formed by two adjoining sections and the cover is closed by said flaps slitted at these sections. By pasting these flaps together or with the ends of the transparent cover folded over them, or by sealing, the package is tightly closed after placing the commodities in the several compartments of the packing, formed by the star-shaped frame. By means of this sealing process the commodities can be taken out as required for use from one or more compartments separately without it being necessary to open the others. This is a great advantage for commodities which spoil easily and are used in small quantities. Commodities packed in this manner can be viewed from all sides for the purpose of ascertaining both quantity and quality.

Should a single commodity be larger than a compartment, the walls of the frame are provided with recesses shaped to fit exactly the commodity in question without it being able to move about in the package. In order to save material, especially in large packages, these recesses are formed by having the frame consist of several parts, to-wit, two short star-shaped end pieces formed in precisely the same manner as the above described frame of a strip of cardboard or the like, by folding them together, and of a number of webs of cardboard or the like connected with the walls of the star-shaped end pieces by means of fastening strips of metal or the like. These metal strips can be formed in such a manner that they simultaneously serve as reinforcements for the webs. The frames can be folded and opened in precisely the same manner as those made of one piece.

In packing large commodities it will be found more practical to wind the cover tightly around the opened frame in which the commodity is to be placed, instead of using a tubular cover, as in dealing with larger dimensions the opening up of the frame within the tubular cover would be attended with difficulties. The packing can be shipped and stored knocked down, and put together when to be filled, without any skilled labor being required.

Embodiments of my invention are illustrated in the drawings by way of example.

Fig. 1 shows a tube of transparent material of any length, the package cover being cut therefrom to the required length.

Fig. 2 shows a strip of cardboard from which the frame is folded.

Fig. 3 is a cross-section of the frame folded from this strip.

Figs. 4 and 5 illustrate the insertion of the frame in folded condition into the tubular cover, in longitudinal as well as cross-section.

Figs. 6 and 7 show in longitudinal and cross section respectively, the opened frame within the cover, bent at one end and with the cover ends folded over at this end.

Fig. 8 is a view of a finished package without contents, in the shape of a quadrilateral prism.

Fig. 9 is a view of a package in the shape of a trilateral prism, in which an egg-shaped object is packed and whereby the walls of the frame are provided with re-

cesses into which the egg-shaped object is fitted.

Fig. 10 is a frame composed of separately manufactured parts.

The frame strip *a* of cardboard or other suitable material, shown in Fig. 2, is divided by creases *b* into eight sections *c*, the package being divided into four compartments. Should more compartments be desired, the strip must be correspondingly longer and creased into a larger number of sections. All sections are gummed on one side. The two end sections are laid with the gummed sides on each other and in like manner the adjoining ones. In this manner a frame with star-shaped cross-section is formed (Fig. 3). This is inserted in flat form into the tubular cover *e* cut to the required length from a tube *d* of transparent material of any desired length, and opened star-shaped inside the tube (Fig. 6). By opening the frame in this manner the tubular cover *e* is drawn tight into a prismatic shape. The slitted flaps *f* on the various sections are bent perpendicularly to the walls of the star-shaped frame in the manner shown in Fig. 6 and gummed or sealed to the cover ends *g* folded over them. The desired star shape of the frame after insertion into the tubular cover until sealing by the flaps is best preserved by inserting wooden blocks of corresponding cross section into the compartments between the partitions of the frame. These blocks are removed when the respective compartments are closed. After removing the blocks and filling the first compartment, the second face is also closed by bending it at right angles or sealing with the cover ends *g*. The commodities packed in the various compartments may be of various kinds and can be readily detected with respect to quality as well as quantity through the transparent cover *d*. The contents of the various compartments can be taken out one after the other by merely loosening and bending up the flap *f* of the compartment in question. For packing special commodities of larger dimensions than the compartments of the packages, the walls *i* of the frame are provided with recesses which can be shaped in such manner that the commodity to be packed such as an egg-shaped object, for instance, (see Fig. 9), fits exactly into such recesses and cannot, accordingly, work loose within the package. In larger packings in which waste of material for these recesses would render the packings much more expensive, the frame may be made in several parts. The frame shown in Fig. 10 consists of two short star-shaped end pieces *k* and the webs *l* of cardboard or similar material which, by means of the U-shaped tin strips *n* which simultaneously serve as bracing, rigidly connect two corresponding walls *m* of the star-shaped end pieces *k*.

What I claim as my invention and desire to secure by Letters Patent of the United States is:—

1. Packing, comprising, in combination, a tube-shaped transparent cover, and a frame adapted to be folded into a prismatic body of smaller spacial extent, said frame consisting of two polygonal end pieces and radially disposed connecting walls, said frame being adapted to stretch said transparent tubular cover into a prismatic body.

2. Packing, comprising, in combination, a tube-shaped transparent cover, a frame adapted to be inserted into said tube-shaped cover in folded condition, said frame being further adapted to stretch said transparent tubular cover into a prismatic body, said frame consisting of two polygonal end pieces and radially disposed connecting walls, whereby the space between said end pieces is divided up into radial compartments, each of said polygonal end pieces consisting of sections adapted to be turned in line with said radial connecting walls to allow said radial compartments to be filled with the goods to be packed.

3. Packing, comprising, in combination, a tube-shaped transparent cover, a frame adapted to be folded into a prismatic body of smaller spacial extent, said frame consisting of two polygonal end pieces and radially disposed connecting walls, said frame being adapted to stretch said transparent tubular cover into a prismatic body, and recesses within said radial connecting walls, said recesses being shaped and disposed so as to cooperate in providing a central space for the reception of an object to be packed.

4. Packing, comprising, in combination, a frame work of prismatic exterior structure and comprising two end pieces and stays interconnecting said end pieces and disposed so as to form the longitudinal edges of the prismatic space enclosed by said frame structure, and a transparent film encasing said frame structure so as to form the longitudinal outer faces of the prismatic hollow body obtained by the cooperation of said frame and said transparent film.

GEORG BERGMANN.