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METHOD AND MEANS FOR PACKING COLLAPSIBLE TUBES AND THE LIKE

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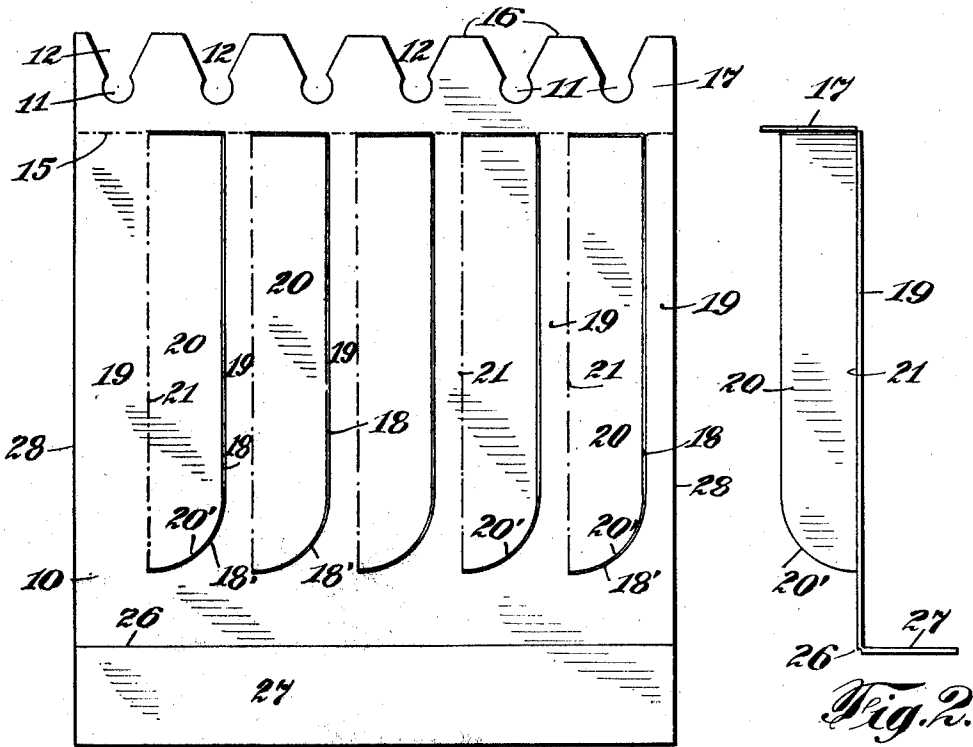


Fig. 1.

Fig. 2.

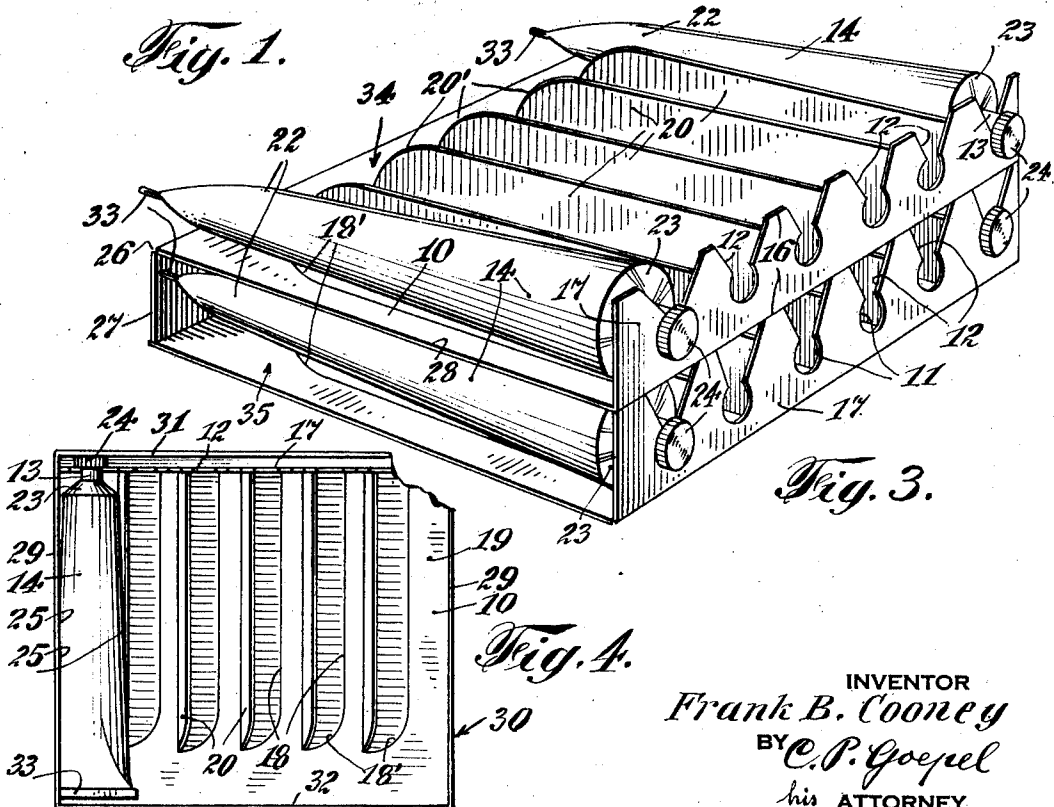


Fig. 3.

Fig. 4.

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METHOD AND MEANS FOR PACKING COLLAPSIBLE TUBES AND THE LIKE

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This invention relates to the art of packing articles for carriage and shipment, the invention being more particularly related to an improved method and device whereby to pack small articles of a soft and delicate character in a safe, non-shiftable and non-injurious manner.

The invention is peculiarly adapted, although not confined, to the production of packing for firmly mounting and safely retaining soft and pliable collapsible tubes of the kind commonly employed in marketing pastes, cements and other substances or commodities.

More particularly the purpose and object of the invention are to provide certain improvements in that type of packing which is produced from blanks or sheets of pasteboard, cardboard or the like, the improvements relating in a manner as hereinafter set forth, to the mode in which the blanks are scored, cut, folded and assembled for the support and protection of the collapsible tubes.

By the packing which I have produced, the tubes are accommodated in individual cells or compartments and they are individually held at their rigid outlet necks at determinate positions. The spaces constituting the cells for the tubes are not entirely walled in, but are open at opposite sides where the soft symmetrically rounded bodies of the tubes are easily distorted. According to a feature of my improved packing, the tubes in respect of their widthwise dimension between their longitudinal edges are established obliquely, so that their rounded or bulging front and rear faces, which are most easily distorted, confront either open spaces or empty corners, while their longitudinal edges obliquely contact with swingable pasteboard flaps which constitute divisions or partitions between the tubes.

The packing devices of my invention may consist of a plurality of units, each of which is adapted to contain a plurality of collapsible tubes. The units can be brought together or loosely assembled in a compact symmetrical structure adapted to fit snugly within a box or carton and so as to avoid any crushing or distortion of the tubes during shipment.

In brief, the object and purpose of the invention are to provide a simple, practical and efficient packing, by the use of which the product of the manufacturer will reach the dealer in a presentable condition for sale or for display on the counter.

With the foregoing and other objects in view, the invention consists in the mode of production, and in the construction and relative ar-

rangement of parts so combined as to coact and cooperate with each other in the accomplishment of the results herein contemplated, and comprises in its development the simple and practical examples illustrated in the accompanying drawing, wherein similar reference characters designate corresponding parts throughout the several views, and in which—

Figure 1 represents a plan view of a blank form which is cut and creased for the production of a packing according to my invention;

Fig. 2 represents an end view of a packing unit produced from the blank form;

Fig. 3 is a perspective view showing an assembly of two packing units for installation in a box, carton or the like, certain collapsible tubes being mounted in place in their units, and

Fig. 4 is a front elevational view, showing a packing unit as it appears when disposed in a box.

Referring in detail to the accompanying drawing, the reference character 10 designates a sheet of cardboard, pasteboard or other suitable stock material from which inexpensively to produce a packing unit.

This sheet along one edge is cut so as to provide a series of spaced apart eyes 11 and converging openings or entrance ways 12 leading to the eyes. These open eyes may be given any particular form or shape as may be necessary in order firmly to secure therein the articles to be packed. In the present embodiment, the eyes are represented as of circular form for receiving the rigid neck or outlet ends 13 of the collapsible tubes 14.

The sheet 10 is provided with a crease or score line 15 which extends transversely thereof and parallel with the edge 16 containing the entrances to the open eyes. Said score line is located at such distance from the edge 16 as will provide a shelf or flange 17 of a width sufficient to permit the accommodation therebelow of the articles to be packed. As clearly represented in Fig. 2, the shelf is bent laterally along the score line 15 so as to occupy a position substantially at right angles to the body of the sheet 10, the purpose being to retain the pack alongside the body of the sheet 10 the articles which are engaged in the open eyes 11.

The body of the sheet 10 is cut to produce alternating slots and webs 18 and 19; and the material resulting from the production of the slots 18 constitutes flaps or partitions 20 which are integral with the webs, being swingably joined therewith along the lines 21. The slots 18, webs

19 and flaps 20 extend longitudinally of the body and the ends thereof, adjoining the shelf 17, coincide with the line of crease 15. In the present instance, the slots, webs and flaps are of elongated form in correspondence with the elongated forms of the collapsible tubes 14. The slots and flaps, at the ends thereof remote from the shelf 17 are rounded as at 18' and 20' in order best to compensate for the rounded portions 22 of the collapsible tubes.

As previously pointed out, the collapsible tubes are attached to the shelf by inserting their rigid neck portions 13 in the open eyes 11, and it will be noted in this connection that the application of the neck portions to the eyes is so made that the cone-shaped ends 23 of the tubes come at the inner face of the shelf while the caps 24 of the tubes engage over the outer face of the shelf. Preferably and as shown, the tubes are applied to the eyes in such manner that the widthwise thicknesses of the tubes between their opposite longitudinal edges 25—25 occupy positions obliquely with respect to the plane of the sheet 10. In this way the rear faces of the tubes confront the slots 18 and empty corners between the webs 19 and adjacent flaps 20 while the front faces of the tubes confront the open sides of the structure which exist between the partition flaps 20. Moreover, under this arrangement, one of the longitudinal edges of each tube confronts the open corner along the line of mergence 21 of the flap 20 and its web 19 while the opposite longitudinal edge confronts the free edge of the opposite flap. In this way, the tubes are best packed so as to avoid any crushing or distortion of their soft bodies.

According to an important feature of my invention, the flaps 20 which constitute partitions between adjacent tubes, are in engagement with the inner face of the shelf 17 so as to prevent any sagging of the shelf due to the weight of the tubes which are attached thereto.

The end of the sheet 10, opposite to the shelf 17 may, if desired, be provided with a crease line 26 from which may be bent a foot portion 27. In the case of single tray units, the foot portion may be entirely omitted; for the flaps 20 may themselves be utilized as spacing means whereby to space the body of the sheet 10 from an opposite side wall of the box or carton into which the tray unit is placed. Said foot 27, which may be bent in a direction opposite to the bending of the shelf 17 as best shown in Fig. 2, lies in a plane parallel with the plane of the shelf 17, and said foot 27 when thus established, has special utility as a spacer in connection with a similar adjoining tray unit.

The single tray unit, with or without a foot portion as 27, is made in such size that when the shelf 17 thereof is bent into lateral position for engagement with the laterally extending flaps, it will fit snugly within the walls of the shipping box or container. Thus, in Fig. 4, it will be noted that the opposite edges 28—28 of the sheet 10 have frictional contact with the opposite sides 29—29 of the shipping container 30. The caps 24 of the collapsible tubes, positioned at the outer face of the shelf 17, engage with one end 31 of the container; and with the opposite end 32 of the container, the free edge of the sheet 10 at that side is also in frictional engagement. If the sheet 10 carries a bent foot 27, the latter lies flatwise upon the end 32 of the container. The parts of the tray are so arranged and proportioned that the ends 33 of the collapsible tubes

are in spaced relation to the end wall 32 of the container in which the unit is placed. By this provision, the free ends 33 of the collapsible tubes cannot become crushed or distorted. Since the shelf 17 is held against sagging by the plurality of flaps 20 and since the caps 24 of the tubes are maintained in firm engagement with the inner face of the carton wall 31, the collapsible tubes are firmly held against any shifting movement tending to bring about crushing or distortion of their soft bodies. The provision of the flaps 20 as partitions between the tubes also render service by way of preventing distortion of the bodies, since such flaps are hingedly engaged for free movement and consist of relatively yieldable pasteboard or the like.

In Fig. 3, an assembly of two tray units is illustrated. The upper unit 34 is made precisely like the unit illustrated in Fig. 1 and includes the foot portion 27 bent in a direction opposite to that of the shelf so as to afford spacing means between the upper unit 34 and the lower unit 35. Said unit 35 is also similar in all respects to the unit illustrated in Fig. 1, except that the foot 27 is omitted. It will be noted that these two units are assembled with their shelves in a common plane; and that the shelf for the unit 35 constitutes spacing means for such unit at the end thereof opposite to the foot 27. These two units, as a compact structure, may be installed in a box or carton of proper size, in the same way as described in connection with the installation of the single unit illustrated in Fig. 4.

From the foregoing description, taken in connection with the accompanying drawing, it will be seen that I have provided a very simple, practical and efficient packing device for collapsible tubes and similar articles, and one which is composed of few parts, cheap to manufacture, apply and assemble in units.

Although in the present embodiment of the invention, there is shown in Fig. 3 a packing structure comprising two tray units, it is to be understood that any number of units could be employed as this does not affect the principle of the invention.

It will be manifest that I have disclosed a thoroughly satisfactory mode of packing collapsible tubes and a mode which embodies the features of advantage enumerated in the statement of the invention and the above description, and while I have, in the present instance, shown and described the preferred form of the tray device for carrying out the invention in practice, it is to be understood that the particular construction of the tray device is susceptible of modification in various particulars without departing from the spirit or scope of my invention or sacrificing any of its advantages.

I claim:

1. Means for packing collapsible tubes and the like comprising sheet stock having elongated alternating webs and slots, with the material of the slots forming lateral flaps integral with the webs, a shelf engaging over the flaps at one end thereof and bent from the stock, said shelf having openings in relation to the slots for receiving therein the head ends of the tubes for the retention of the tubes between the flaps and at the confines of the slots which avoid crushing the tubes.

2. Means for packing collapsible tubes and the like comprising sheet stock having elongated alternating webs and slots, with the material of the slots forming lateral flaps integral with the webs,

a shelf engaging over the flaps at one end thereof and bent from the stock, said shelf having openings in relation to the slots for receiving therein the head ends of the tubes for the retention of the tubes between the flaps and at the confines of the slots which avoid crushing the tubes, and a foot on the stock bent therefrom and lying in a plane substantially parallel with the plane of the shelf.	
3. Packing means for a collapsible tube comprising sheet stock having a slot shaped to suit the tube and a lateral protective flange along one side of the slot, a shelf engaging over one end of the flange, bent from the stock and provided with an opening for receiving and holding the head end of the tube for the retention of the tube at the confines of the slot adjacent said lateral flange.	
4. Packing means for collapsible tube comprising sheet stock having a slot shaped to suit the tube and having integral lateral protective flaps at opposite sides of the slot, a shelf engaging over one end of the two flaps, bent from the stock and provided with an opening for receiving and holding the head end of the tube for the retention of the tube at the confines of the slot and between the two protective flanges.	
5. Packing means for collapsible tubes comprising sheet stock having a series of alternating webs and slots, lateral flanges for the protection of the tubes integral with the webs, a shelf engaging over one end of the flanges for support thereon, said shelf being bent from the stock and provided with openings for receiving and holding the head end of the tubes for the retention of the tubes at the confines of the slots and between the protective flanges.	80
6. A packing tray for collapsible tubes and the like, including sheet stock, the material of the stock being cut to produce alternating slots and webs, flaps integral with the webs extending laterally therefrom and consisting of the material cut from the slots, said slots and flaps being shaped to suit the tubes to be packed, a shelf engaging over the flaps at one end, bent from the stock and provided with openings wherein to secure the head end of the tubes for retaining the tubes at the confines of the slots and between the flaps, said flaps being movable on the webs and relatively to the shelf which they support for aiding in retaining the tubes at the confines of the slots.	85
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