Jan. 12, 1943. J. H. O'BRIEN 2,308,384

PAPER BOX STRUCTURE

Filed July 8, 1940

FIG. 1.

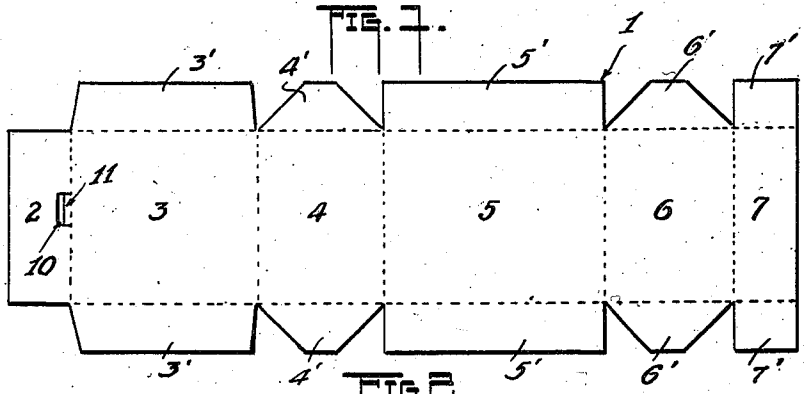


FIG. 2.

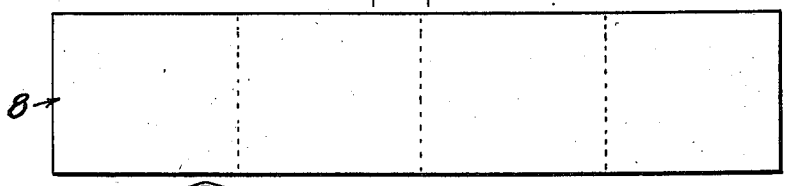


FIG. 3.

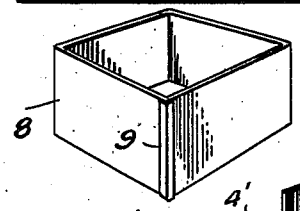
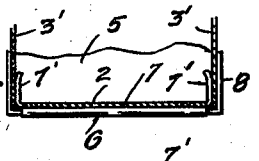


FIG. 6.



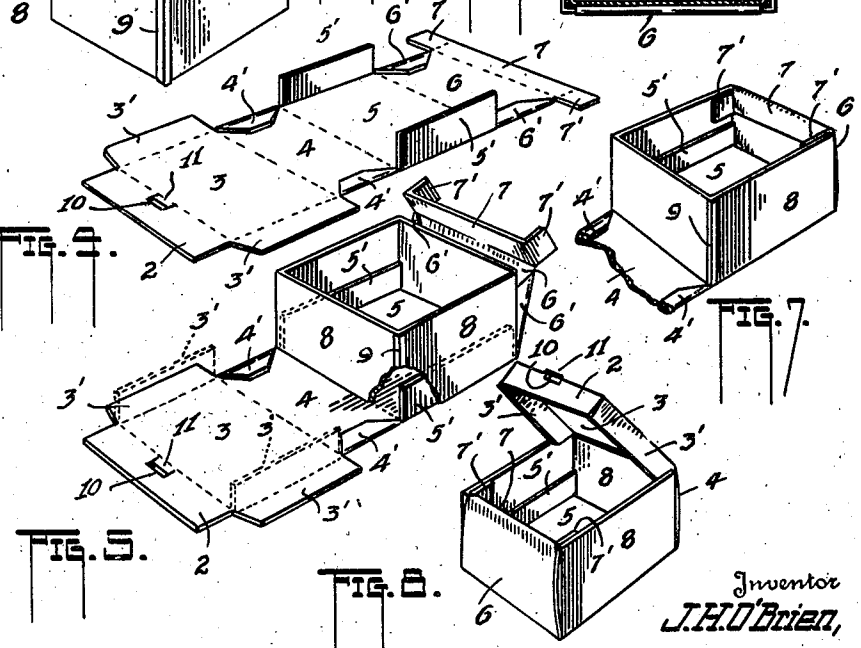


FIG. 4.

FIG. 7.

FIG. 5.

FIG. 8.

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PAPER BOX STRUCTURE

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Application July 8, 1940, Serial No. 344,342

1 Claim. (Cl. 229—23)

This invention pertains to the art of making paper boxes.

An object of the invention is to provide new and novel forms of box parts and a new and novel manner of assembling the same into a complete box of that type, for example, employed for bakery goods and the like where such a container is to be "folded" for enclosing a commodity at the time of sale of such commodity.

Another object is that of constructing a box exceedingly strong and sturdy and capable of withstanding considerable abuse due to the structure employed.

That the invention may be thoroughly understood the appended drawing is provided forming part hereof wherein:

Figures 1 and 2 are plans of the separate blanks as parts employed in constructing a box according to the invention;

Figure 3 shows in perspective a box body folded into the form shown from a blank such as illustrated in Figure 2;

Figure 4 shows in perspective the blank illustrated in Figure 1 after certain parts of said blank are folded into given positions;

Figure 5 is likewise a perspective according to Figure 4 to which other folding operations have been applied, and upon which the box body of Figure 3 has been superimposed;

Figure 6 is a plan in part section of parts of the box structure;

Figure 7 is a perspective of the appearance of parts of the box showing other folding operations in addition to those shown in Figure 5, and

Figure 8 is a perspective of the box as viewed at a side opposite that shown in Figures 5 and 7.

The box of the present invention is preferably constructed of corrugated paper having an outer covering of plain or ornamental paper and is comprised of two separate parts shown as "blanks" in Figures 1 and 2.

In order to more easily and readily identify the several parts of the box in the several figures of the drawing, the blank shown in Figure 1 is provided with several reference characters to denote certain zones thereof appearing in the balance of said several figures.

The said blank as a whole is identified by 1 and comprises zones 2, 3, 4, 5, 6 and 7, each of the zones 3, 4, 5, 6, 7 having at its opposite edges flap portions 3', 4', 5', 6', 7' respectively adapted to be bent up along the dotted lines indicated in Figure 1, which line is shown as extending throughout the length of the figure. Likewise, dotted lines extending transversely of the figure denote the boundaries of the several zones, the paper being bent along said lines in the act of creating the box as will appear later herein.

Figure 2 shows a blank 8 of the paper as a part separate from the blank just described, this being bent at three places indicated by dotted lines extending transversely of the figure. When so bent the paper strip forms a rectangular tubular member as in Figure 3, the extremities of the paper being secured relatively by a strip 9, or other suitable means, this structure forming the box body, or box frame.

In Figure 4 as the first steps in forming a box the opposite flaps 5' are bent up at right angles to the plane of the paper blank, the flaps 4' and 6' being bent over upon said blank.

It is observed now, in Figure 5, that the rectangular portion 8 which is to form the body of the finished box is placed in position upon the blank, the edges of two opposite walls thereof lying upon the latter transversely thereof between the zone 5 and adjacent zones 4 and 6 while enclosing the two upstanding flaps 5', said flaps serving to locate said portion 8 and prevent shifting thereof.

In the next step of creating the box the zone 6 is bent up toward the adjacent wall of the rectangular portion 8 as in said Figure 5, following which the zone 7 is bent over and down to lie against the inner surface of the said wall as in Figure 7 and at the same time the flaps 7' thereof may be bent at right angles to zone 7 and lie each against one of two other opposed walls. The flap 7 thus constitutes what may be termed a lock for the zone 6, holding the latter in abutment with the wall over which the flap hangs.

Figure 8 shows the nearly completed box as seen from the opposite side thereof by rotating the box through 180° about its base from the position shown in Figure 7. In said Figure 8 it will be observed that the zones 3 and 4 have been raised, the latter being made to abut the adjacent wall while the zone 3 is to serve as the cover for the completed box, the flap 3' having been bent at right angles to the plane of zone 3 as shown in said Figure 8 and in Figure 5 in dotted lines, the zone 2 also having been so bent. The said zone 2 and the flaps 3' enter the rectangular body and lie against the inner surfaces of the box walls, said flaps 3' preferably being made to lie between said walls and the flaps 7' as shown in Figure 6, in which figure the zone 2 and said flaps 3' are shown in section. By this disposal of the last named considerable friction is created between

the named parts and the top zone 3, therefore, effectively seals the enclosed space.

A slot 10 may be cut in the zone 2 in such a manner as to leave a projection 11 extending from zone 3 to form a convenient extended lip for lifting the constituted lid or cover.

While the flaps 4' and 6' may not be used it is clear that their use provides for a smooth appearance of the paper at the corners of the box rather than a cut edge were the flaps not employed.

The upstanding flaps 5' and the box portion 8 combine to provide a very strong structure at the walls of the latter at their lower extremities at the box bottom and when the lid or cover portion 2, 3, 3' is closed the flaps 3', particularly when seated between the box walls and the flap 7', completes the reinforcing of the walls at the upper extremities, the zones 6 and 7 naturally serving to add largely in the reinforcing.

In practice box portions 8 provided with the corner connecting strips 9 may be kept in stock in flat collapsed form ready for the moment of assembling the container parts for immediate use by the several steps already outlined.

While a preferred structure is shown and described it is to be understood that slight changes may be made but only such as may lie within the present invention and the claim to follow.

I claim:

A paper box structure comprising a long and relatively narrow strip of material having an upstanding flap portion at each of two opposite edges paralleling the longest measurement of said strip and spaced apart the width of the same, a tubular rectangular member open at both ends erected at one of its ends upon the strip and enclosing the said flap portions, two opposite walls of the member abutting the flap surfaces, two other walls of said member abutting the ends of the flap portions and locating the same, said strip having an extended portion at one end abutting upon a wall of the member, said portion terminating in a zone adapted to be folded over the top edge of said wall of said member at the open end thereof and engaging upon the inner surface of that wall, said zone having at each end an extended flap, each flap normally positioned adjacent the inner surface of one of two walls of the member lying at right angles to the last above named wall in the named position of said zone, the end of the strip opposite that having the named extended zone-carrying portion adapted to overlie the open end of the member, and having a pair of flap portions at its edges adapted each to engage between the named extended flaps of the zone and the walls against which said flaps normally abut.

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