April 5, 1938. O. KASDORF 2,113,481

PAPER RECEPTACLE

Filed Jan. 28, 1936 2 Sheets-Sheet 1

Fig.1

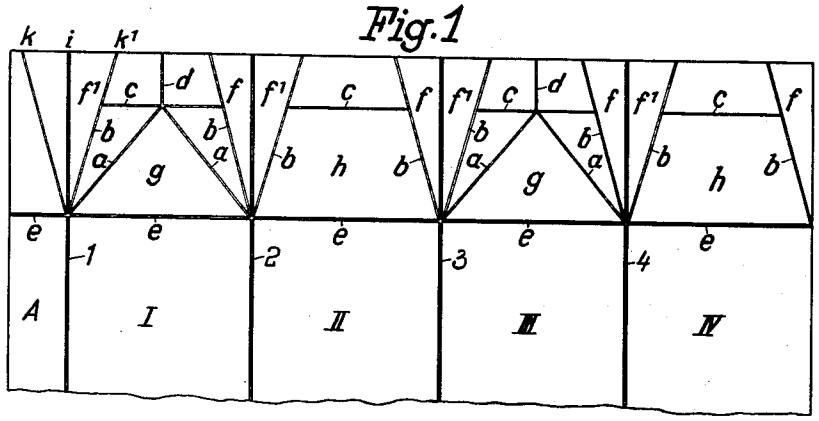


Fig.2

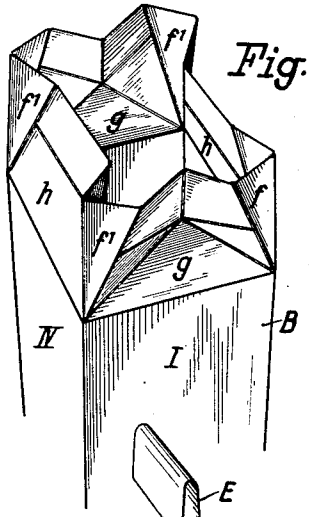


Fig.3

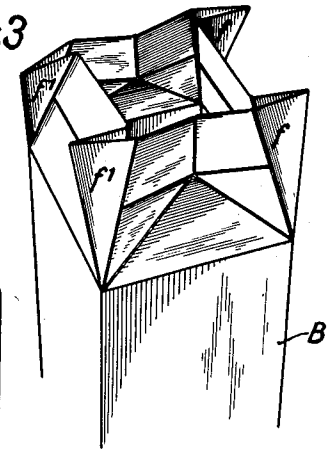
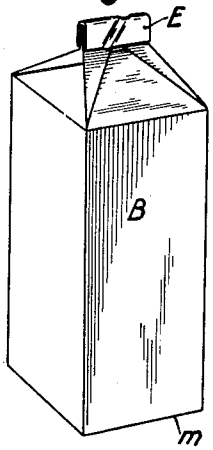


Fig.5



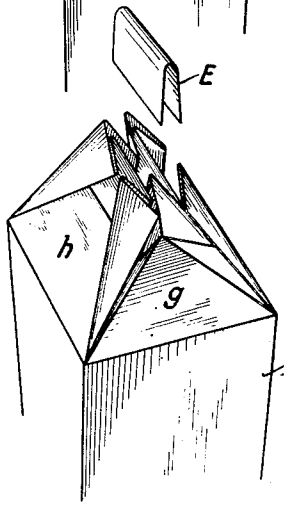
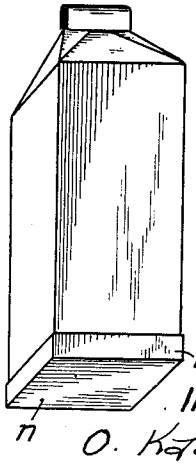


Fig.4

Fig.6



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PAPER RECEPTACLE

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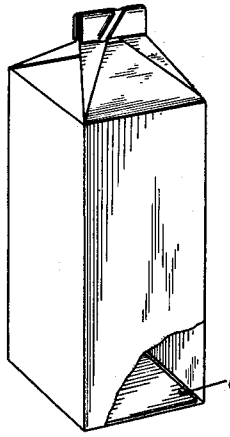


Fig. 7

Fig. 8

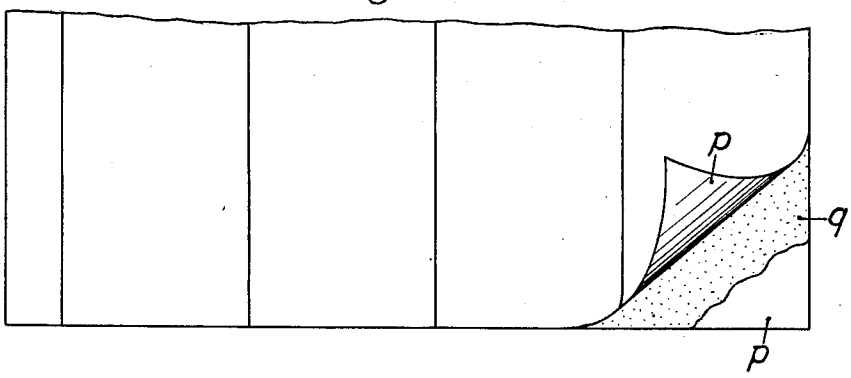
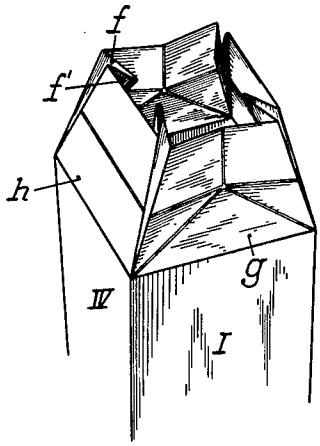


Fig. 9



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Patented Apr. 5, 1938

2,113,481

UNITED STATES PATENT OFFICE

2,113,481

PAPER RECEPTACLE

Otto Kasdorf, Montevideo, Uruguay

Application January 28, 1936, Serial No. 61,223
In Argentina January 29, 1935

6 Claims. (Cl. 229—37)

My invention relates to improvements in paper receptacles, and more particularly in paper receptacles which are rectangular at their top parts and are closed by having the top portions of their opposite side members bent inwardly and closed in a suitable way for example by means of a clamping member embracing the edges of the said inwardly bent top portions. In receptacles of this type such as are now in use the portion of the receptacle which is provided by thus bending the top parts inwardly extends the whole breadth of the receptacle, and therefore a comparatively long clamping member is needed. The object of the improvements is to provide a receptacle of this type in which the top part of the receptacle to be closed by the said clamping member or the like is reduced in length, and with this object in view my invention consists in providing the said top part of the receptacle at its corners with substantially triangular folded portions which are placed on the inwardly bent top portions of the receptacle.

Another object of the improvements is to provide a strong receptacle, and with this object in view my invention consists in manufacturing the receptacle from a plurality of superposed blanks which are united by a suitable adhesive such as casein and albumin to produce a multiply receptacle.

Finally an object of the improvements is to provide a receptacle which has a reinforced bottom, and with this object in view my invention consists in reinforcing the said bottom by means of a sheet of paper or cardboard which is applied internally or externally to the folded bottom.

For the purpose of explaining the invention several examples embodying the same have been shown in the accompanying drawings in which the same reference characters have been used in all the views to indicate corresponding parts. In said drawings,

Fig. 1 is a plan view of the blank from which the receptacle is formed.

Fig. 2 is a perspective view showing the top part of the receptacle, the top portions of the side members being partly folded inwardly,

Fig. 3 is a similar view showing the top part in the next stage of folding the same,

Fig. 4 is a similar elevation showing the top parts of the side members folded inwardly substantially to their complete form, the clamping member being about to be placed on the edges of the inwardly folded portions for closing the receptacle.

Fig. 5 is a perspective view showing the finished and closed receptacle,

Fig. 6 is a similar elevation showing a receptacle having a reinforced bottom,

Fig. 7 is an elevation similar to the one illustrated in Fig. 5 and showing a modification, the bottom part being partly broken away from showing a reinforcing piece of cardboard applied internally to the bottom,

Fig. 8 is a plan view showing a blank composed of two plies of paper having a water-proofing layer placed between the same, and

Fig. 9 is a perspective view similar to the one shown in Fig. 3 and showing another modification.

The receptacle is made from paper or other suitable material.

As is shown in Fig. 1, it is formed with longitudinal creases 1, 2, 3, 4 dividing the same into four portions I, II, III and IV from which the side members of the receptacle are made and into a flap A which is glued to the portion IV for forming the tube. Further, the blank is formed with a crease *e* disposed transversely of the creases 1, 2, 3 and 4 and extending the whole breadth of the blank, the said creases providing the top portions of the side members I, II, III and IV which are to be bent inwardly for closing the receptacle. The top portions are provided with creases *b* disposed angularly of the top parts of the creases 1, 2, 3 and 4 and with creases *c* spaced from the upper edges of the portions and located parallel to the said edges and between the angular score lines *b*. The top portions of the side members I and III are further provided with angular creases *a* intersecting in the creases *c* and thus providing triangular portions *g*, and from the apices of the said triangles *g* a crease *d* disposed parallel to the creases 1, 2, 3 and 4 extends to the upper edges of the said top portions. The bases *i*, *k* and *i*, *k'* of the triangles *f* and *f'* included respectively between the longitudinal score lines 1, 2, 3 and 4, the score lines *b* and the upper edge of the blank have a length substantially equal to one quarter of the breadth of the side members I, II, III and IV.

The blank is cut and the creases or scores are made in suitable punching and creasing machines by means of which also printed matter may be applied to the blanks.

From the blank shown in Fig. 1 a tube is made by wrapping the same around a suitable mandrel and gluing the flap A to the member IV. Now the bottom is produced by folding the bottom part of the said tube inwardly in any known or pre-

ferred way. After the receptacle has been filled it is closed at its top as follows: The top portions *h* of the side members II and IV are first slightly bent inwardly into the position shown in Fig. 2, thus providing a pair of roof-shaped faces which are narrower at their top parts than at their bottom parts. In a similar way the top portions *g* of the side members I and III are slightly bent inwardly and between the previously bent portions *h*. In this operation the portions *f* and *f'* are likewise bent angularly to provide substantially pyramidal corners. As the top parts are further bent inwardly into the position shown in Fig. 3 an opening is provided at the top which is smaller than the cross-sectional area of the receptacle, and the portions *f* and *f'* are placed on each other to provide corner flaps. Now these corner flaps are placed on the portions *h*, and the portions *h* are further bent inwardly until their edges meet, the portions *g* being further folded inwardly and between the portions *h*, as is shown in Fig. 4. Now the receptacle is closed at its top and it is necessary only to unite the top edges thereof. For this purpose a clamping member E is placed on the top part so as to embrace the upper edges, the said clamping member E being firmly pressed on the said edges. The said clamping member E preferably consists of sheet metal. But it may also be made from paper or cardboard which is glued to the edges of the receptacle. The final shape of the receptacle and its closure is shown in Fig. 5.

In the construction so far described the corners *f*, *f*[1] are placed externally on the portions *h*. In Fig. 9 I have shown a modification in which the corners *f*, *f*[1] are folded inwardly and placed internally on the portions *h*.

If the receptacle is made from a material which is not waterproof it may be impregnated with paraffin, casein, albumin or other suitable water-repelling material.

In a modification the receptacle is made particularly strong and waterproof by composing the same of two or more plies of paper united by means of intermediate layers of a suitable waterproof adhesive such as casein or albumin. This blank is shown in Fig. 8 in which the superposed plies of paper and the waterproofing layers have received respectively the reference characters *p* and *q*.

My improved receptacles are strong as against the usual strains to which they are exposed while they are filled and shipped. However, it is preferred to reinforce the bottom at its corners, and for this purpose I prefer to reinforce the bottom by means of a sheet of paper or cardboard which is glued internally or externally to the bottom. In Fig. 7 I have shown a receptacle which has a sheet *o* of cardboard applied internally to its bottom, and in Fig. 6 I have shown a modification in which a piece of cardboard *n* is glued externally to the said bottom, the said sheet being preferable shaped with upwardly directed flanges *n'* to provide a cap embracing the bottom part of the receptacle.

I claim:

1. The herein described receptacle comprising a tubular body formed with a bottom and pairs of opposing side members, the top portions of the opposing side members being turned inwardly in converging relation, the corners of the inturned portions being folded into substantially triangular shape to provide corner flaps, both said inturned portions and said flaps being extended in contacting relation beyond the point of convergence of said inturned portions to form a closure, said corner flaps being folded on the faces of adjacent portions, and means for uniting the upper edges of the contacting portions.

2. A receptacle as claimed in claim 1 in which the upper contacting edges are united by means of a U-shaped clamping member.

3. A blank for folding receptacles comprising a body part from which the tube is to be made, and a top part which is separated from the body part by a transverse score line and having longitudinal score lines dividing the blank into side members, the portions of the top part lying between the longitudinal score lines being provided with angular score lines extending from the points of intersection of the transverse and longitudinal score lines outwardly to the outer edge of the top portions, the base lines of the triangles formed by the longitudinal score lines, the angular score lines and the edge of the top portions, having a length equal to about one-fourth of the breadth of said side members, certain of said top portions being formed with angular score lines extending from the points of intersection of said transverse and longitudinal score lines and converging at a point lying inside of the edge of the top portion.

4. A receptacle as claimed in claim 1 characterized in that the base lines of the triangular flaps are located at the top edge of the body and extend for approximately one-fourth of the width of said side members.

5. A receptacle as claimed in claim 1 characterized in that said flaps are folded against the external surface of the container.

6. A receptacle as claimed in claim 1 characterized in that said corner flaps are folded against the internal surface of the receptacle.

OTTO KASDORF.