

No. 781,306.

PATENTED JAN. 31, 1905.

H. RUNTZ.
PAPER BOX.

APPLICATION FILED MAY 14, 1904.

Fig. 1.

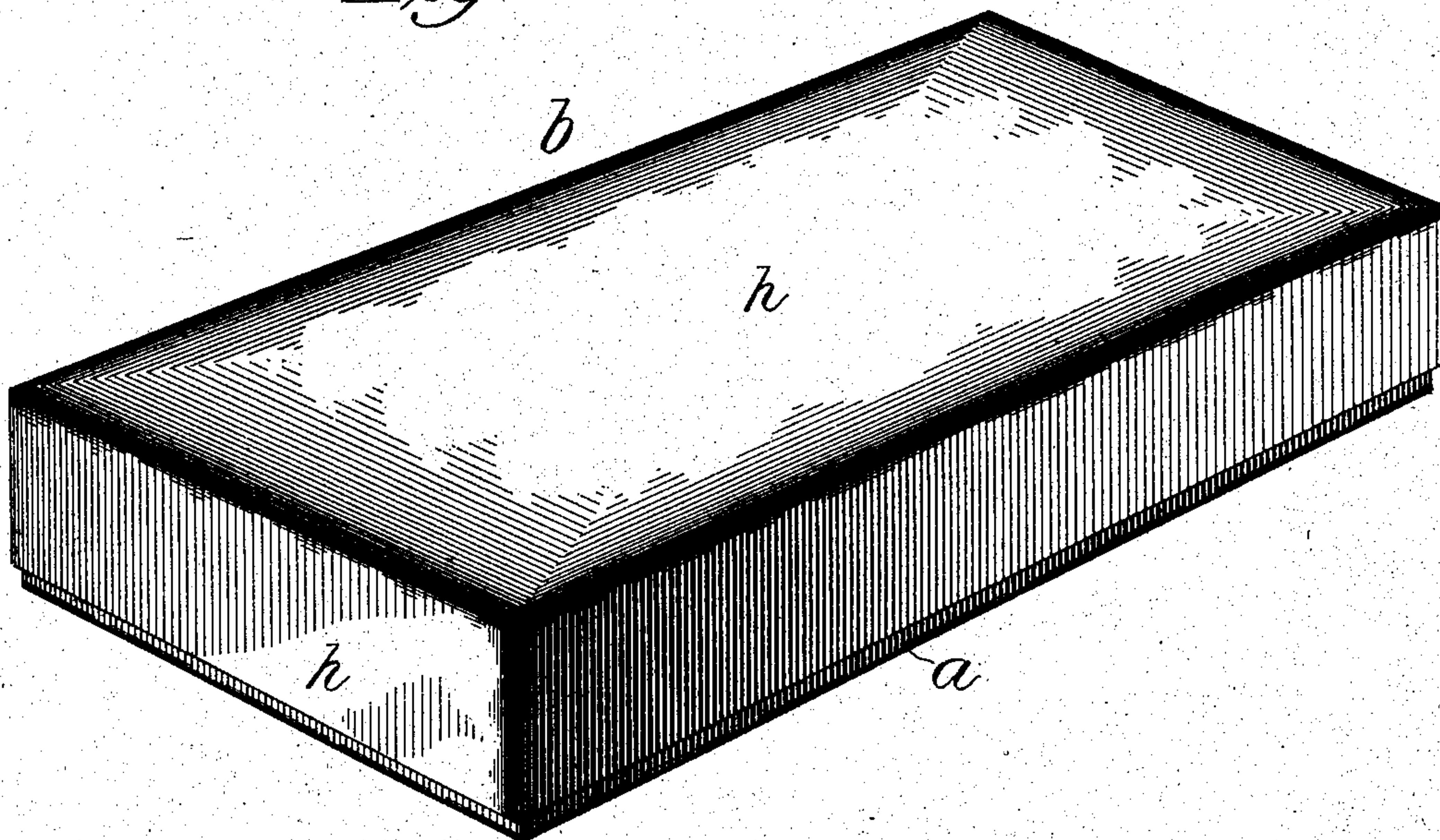


Fig. 2.

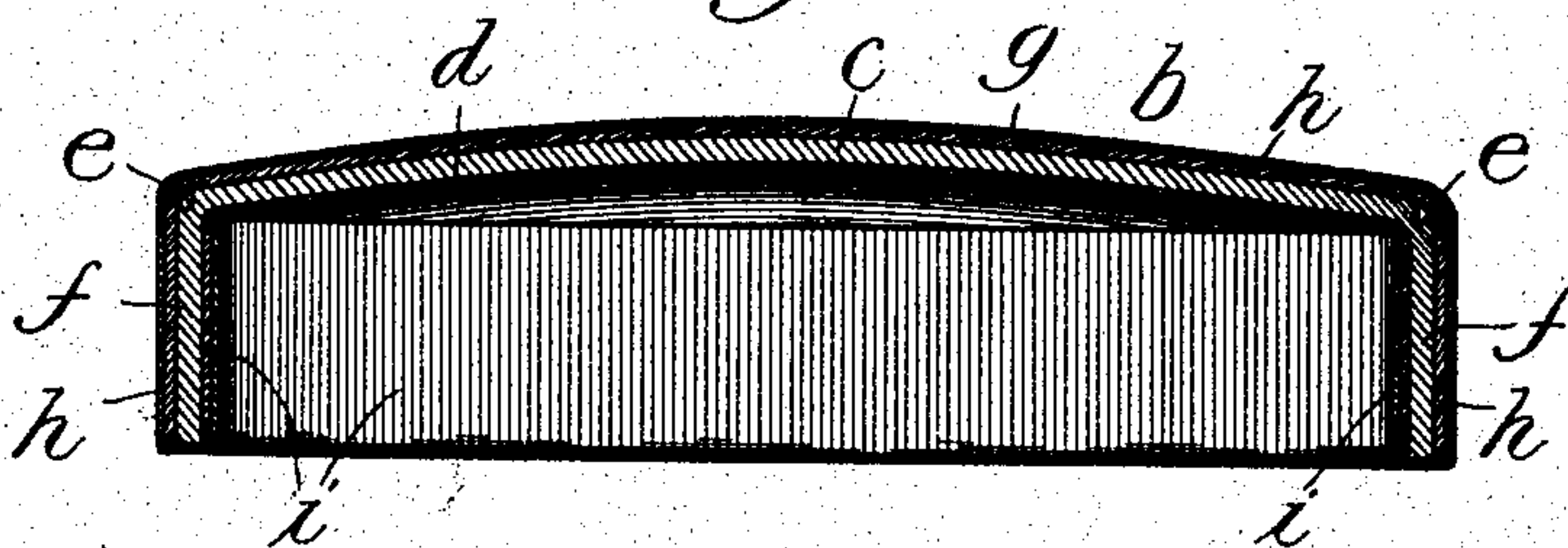
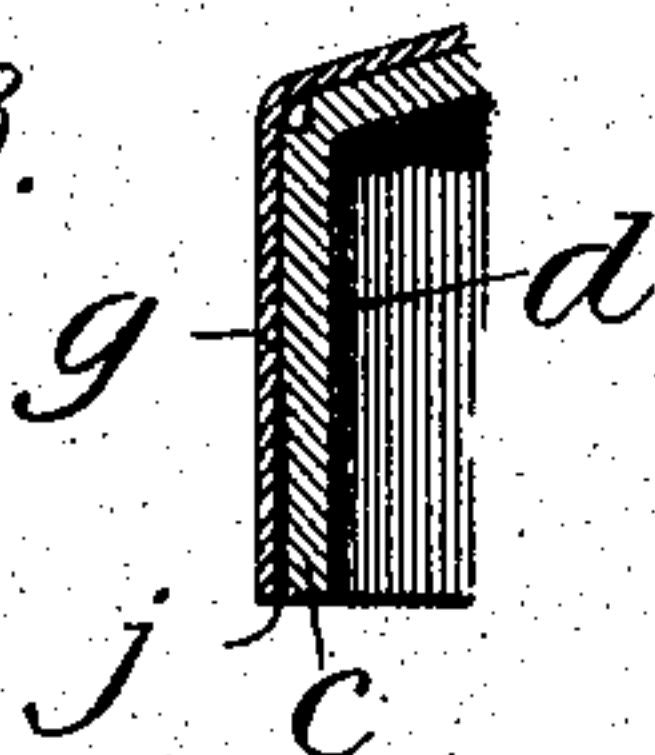


Fig. 3.



Witnesses:
Ed. J. Gaylord.
John Enders.

Inventor:
Henry Runtz
By *David H. Fletcher,*
Att'y.

UNITED STATES PATENT OFFICE.

HENRY RUNTZ, OF CHICAGO, ILLINOIS.

PAPER BOX.

SPECIFICATION forming part of Letters Patent No. 781,306, dated January 31, 1905.

Application filed May 14, 1904. Serial No. 207,989.

To all whom it may concern:

Be it known that I, HENRY RUNTZ, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have
5 invented certain new and useful Improvements in Paper Boxes, of which the following is a description, reference being had to the accompanying drawings, forming a part of this specification, in which corresponding let-
10 ters of reference in the different figures indicate like parts.

The object of my invention is to construct a paper box having a convex top without the use of molds or forms.

15 In the formation of paper boxes the tendency is for the top or bottom, or both, to become concave or to bend inwardly as soon as the outer covering of paper is applied to the cardboard or strawboard forming the body
20 of the box. This is owing to the fact that in lining and covering the strawboard both sides are dampened with adhesive material, and inasmuch as a heavier and better material is used for the cover or outer finish than for the
25 lining the force exerted by the shrinkage of the former is greater than that of the latter, and hence the outer surface becomes concave rather than convex. In order to overcome this difficulty, it has heretofore been custom-
30 ary to place the box body or top upon a mold or form of the desired shape, press it while still damp, and leave it upon the form until it is sufficiently dry to retain its convexity. This method is not only expensive, but in
35 many cases the boxes are liable to twist and warp after being removed from the shaper. I am enabled to avoid this expensive and unsatisfactory process by placing one shell or box-body of comparatively heavy stock with-
40 in another of lighter material, thereby doubling the walls of the box, lining the inner shell with the usual lining-paper, and preferably covering the outer shell with the usual covering-paper and so securing the inner
45 shell in place within the latter that it will serve as a form and support therefor without dampening or placing any adhesive material upon the meeting faces of the two shells or plies which form the top, all of which is here-

inafter more particularly described, and defi- 50
nitely pointed out in the claims.

In the drawings, Figure 1 is a perspective view of a paper box embodying the features of my invention. Fig. 2 is a transverse ver- 55
tical sectional view thereof; and Fig. 3 is a vertical sectional view of a portion of said box, showing a modification of said invention.

Referring to the drawings, *a*, Fig. 1, represents the main body of a box, which may be constructed in any well-known way or, if pre- 60
ferred, in the way in which the improved top or cover portion is constructed, (represented generally by *b*.) The latter embodies the principle of my invention and consists of a body portion *c*, Fig. 2, made from any suit- 65
able material—such, for example, as strawboard—having a facing *d* of paper pasted thereon to form a lining. The blank is then scored in the usual way, as shown at *e*, and bent so that the flanges or parts *f f* are par- 70
allel to each other, the corners being secured by reinforcements in any well-known way. The tendency of the lining *d* to shrink causes the part *c*, forming the top, to bulge upwardly in convex form, as shown. An outer ply *g* 75
of lighter stock is then made of size to fit over the part *c*. The part *g* being thinner is not scored at the corners. The part *g* is then placed over the part *c*, and a covering or facing *h* is pasted or glued over the top and 80
sides and the flaps *i* thereof turned inwardly at the bottom and pasted upon the lining *d* of the part *c*. The flaps *i* serve to fasten the inner ply *c* permanently within its envelop or shell *h*, thereby making a two-ply box 85
body, with no adhesive material between the plies which form the top. The result of this construction is that the shape of the outer conforms to that of the inner ply, which is always more or less convex. The convexity 90
of the inner ply may, if desired, be considerably increased when the box is formed and still damp by pressing it outwardly with the fingers; but this is not necessary unless a considerable degree of convexity is desired. 95

I prefer to secure the two plies together merely by means of the intumed flaps; but the same result may be accomplished by past-

ing the flanges of the two plies together, as indicated at *j*, Fig. 3, in which case the outer ply if formed from a well-finished material need not be covered.

5 It is obvious that the bottom of the box may be formed in the same manner; but inasmuch as it is not desirable to have the bottom otherwise than flat I prefer to make it in the usual way.

10 While more material is necessary in my improvement than is necessary in the ordinary construction, yet its cost is more than overbalanced by the extra labor necessary under the old methods.

15 Having thus described my invention, I claim—

1. A convex top for paper boxes having depending side and end flanges, said top comprising a main or middle supporting-ply of 20 relatively thick stock, an inner ply of thin stock secured to the inner face of said main supporting-ply by means of an adhesive ma-

terial whereby the inner face of said supporting-ply is contracted to impart convexity to the opposite face, and a covering-ply fitted 25 over said main ply and secured only to the flanges of the latter.

2. A convex top for paper boxes including the top proper with integral side and end flanges, said top consisting of two shells, one 30 inclosed within the other without adhesive material between the top portions thereof and a lining secured to said inner shell by means of adhesive material to impart convexity thereto as a result of the shrinkage of said 35 lining.

In testimony whereof I have signed this specification, in the presence of two subscribing witnesses, this 12th day of May, 1904.

HENRY RUNTZ.

Witnesses:

DAVID H. FLETCHER,
CARRIE E. JORDAN.