H. LEIMAN.

METHOD OF MAKING BOXES AND COVERS.

APPLICATION FILED AUG. 12, 1915.

1,174,876.

Patented Mar. 7, 1916.

2 SHEETS—SHEET 1.

FIG. 1.

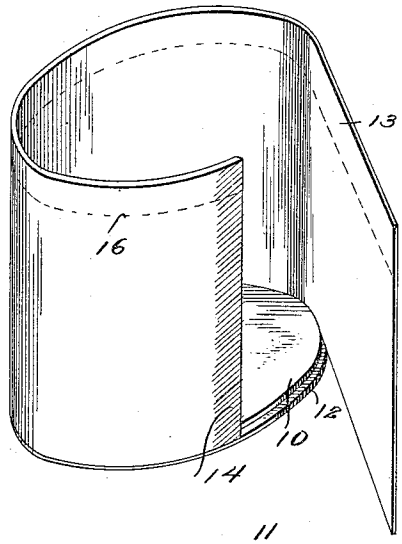
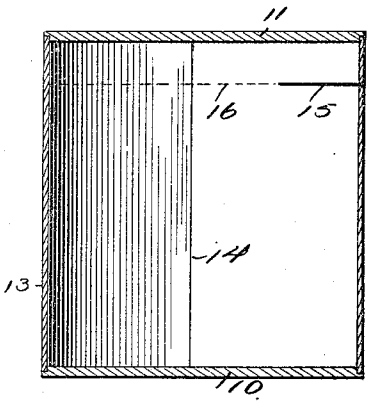


FIG. 2.



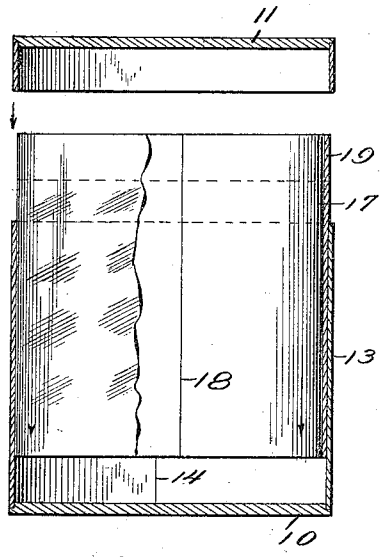


FIG. 3.

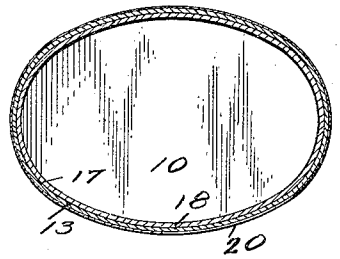


FIG. 7.

Inventor

Henry Leiman

By Mason Fenwick & Lawrence,

Attorneys

Witnesses

R. F. Trogner,

Albert L. Kay.

THE COLUMBIA PLANOGRAPH CO., WASHINGTON, D. C.

H. LEIMAN.

METHOD OF MAKING BOXES AND COVERS.

APPLICATION FILED AUG. 12, 1915.

1,174,876.

Patented Mar. 7, 1916.

2 SHEETS—SHEET 2.

FIG. 5.

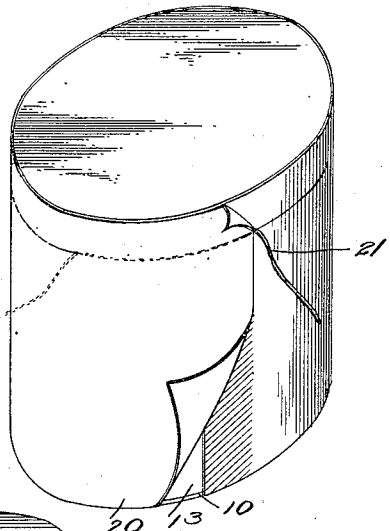


FIG. 4.

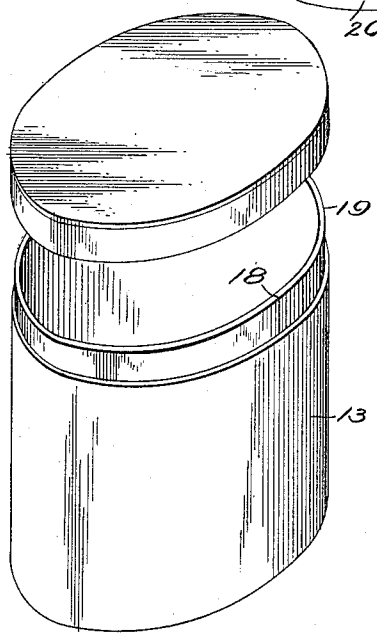
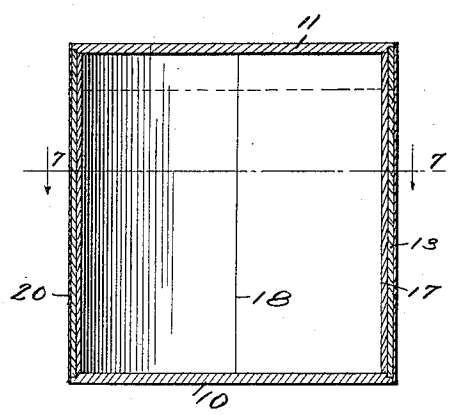


FIG. 6.



Witnesses

R. F. Trogner.

Albert L. Krug.

Inventor

Henry Leiman

By Mason Fenwick & Lawrence,

Attorneys

UNITED STATES PATENT OFFICE.

HENRY LEIMAN, OF TAMPA, FLORIDA.

METHOD OF MAKING BOXES AND COVERS.

1,174,876. Specification of Letters Patent. Patented Mar. 7, 1916.

Application filed August 12, 1915. Serial No. 45,240.

To all whom it may concern:

Be it known that I, HENRY LEIMAN, a citizen of the United States, residing at Tampa, in the county of Hillsborough and State of Florida, have invented certain new and useful Improvements in Methods of Making Boxes and Covers; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to paper manufactures, and more especially to box machines; and the object of the same is to produce an improved method for making boxes which are preferably mostly of paper or paper stock, although the same method may be employed if certain parts of the boxes are of wood as will be explained.

It has been common heretofore to wind a strip around and cement it to the edges of two heads so as to produce a cylindrical container, and meanwhile possibly to sever the wall of the container to divide it into a box proper or body and a cover. Also means have been provided for making a box and its cover, attaching the lower portion of the cover-skirt to the wall of the box-body, and then severing this portion from the upper portion while the parts were assembled, and on three or possibly all sides of the box. But care had to be taken that the cutting knife did not extend through the wall of the box-body, nor cut into the same or the wrapper or cover upon its outer face. My present invention comprises these main steps, carried out in detail in a novel way.

With these and other objects in view the invention consists in a method involving certain novel features as will be hereinafter more fully described and claimed.

In the drawings: Figure 1 is a perspective view of one of the heads with the sheet wound partially about the head showing the first step in my method. Fig. 2 is a sectional view showing the two heads in position relative to the sheet and the cover partly slitted away from the body thus illustrating the second step. Fig. 3 shows in section the body and cover slightly removed therefrom with the lining material being slipped into place by the third step. Fig. 4 shows in perspective the body already lined and the cover spaced slightly therefrom, ready to be borne down as required in the fourth step. Fig. 5 illustrates the result of the fifth step. It shows in perspective the box practically completed with the covering sheet in position and secured except at the corners. Fig. 6 is a vertical sectional view through the completed box. Fig. 7 is a horizontal sectional view through the completed box taken on line 7—7 of Fig. 6.

The method of producing the improved box which forms the subject-matter of this application contemplates the use of two heads 10 and 11 similar in all respects having rabbets 12 formed about their peripheries, and a sheet 13 having overlapped edges as indicated at 14. The sheet 13 is pasted or cemented upon the rabbets of both the heads 10 and 11 to produce the wall shown in section in Fig. 2, after which a slit 15 is cut along the dotted line 16 to sever a portion as shown at Figs. 3 and 4. The portion being removed, a lining 17 is slipped into the body of the box, such lining being so proportioned that its edges abut as shown at 18.

As the present box is designed for packaging and marketing cigars, it is desirable that the ends or heads 10 and 11 and the lining 17 be composed of such wood as usually employed for packaging cigars, for instance, as cedar. The lining 17 is slidably inserted to touch the bottom head 10, but is longer than the body wall to form a neck 19 which extends above the upper edge of the body wall as shown more particularly at Fig. 4. As the skirt of the cover is a part of the original sheet 13 it is obvious that the lining 17 fitting snugly within the body of the box will also fit snugly within the cover skirt, causing the upper edge of the body to form a flange to hold such cover in position—the relation of the body, flange and cover being shown more particularly at Fig. 4.

The box having been filled with the intended material, as with cigars, an outer wrapper 20 is pasted about the box and cover, thereby uniting the box and cover to prevent the accidental removal of the cover from the box. Before winding the sheet 20 about the box a thread 21 is wound in the crack between the meeting edges of the cover skirt and the body wall, and the covering sheet 20 pasted over such thread with the end extending outwardly as shown at Fig. 5. When the box is to be opened the end of the thread is pulled outwardly and around the box, thereby cutting the sheet 20 and re-

leasing the cover from the box. With the placing of revenue stamps or the like over the dividing line between the cover and the box they will likewise be severed by the use of the thread 21 the same as cutting the sheet 20.

The first step of my improved method—fairly well shown in Fig. 1 with the exception that the upper head or top 11 is omitted—may therefore be said to consist in winding the sheet 13 around and cementing it to the edges of the heads, and preferably cementing its ends in the rabbet 12 thereof.

The second step consists in cutting completely through the upright wall of the cylindrical container thus formed, on the line 15, and by any suitable knife or other means which follows the dotted line 16; and this step is well shown in Fig. 2.

The third step consists in slipping the lining 17 into the open upper end of the box body as seen in Figure 3. This lining is preferably of wood as stated, and its edges come together on the line 18. At this time it is of a size to fit closely within the wall 13 of the box body, and it is by preference of greater height than said wall as shown. It may be pushed down to about the point shown in this view, and left there.

The fourth step shown in Fig. 4 consists in putting the cover into position above the lining as it was left in Fig. 3, and pushing it downward thereon.

A part of the fifth step (whose completed article is shown in Fig. 5) consists in laying the thread or cord on the shoulder formed between the upper edge of the body-wall 13 and the outer face of the projecting portion or neck 19 of the lining, and this step will doubtless occur before the cover is put in position as seen in Fig. 4. Then when the cover is borne downward the cord is carried with it.

The fifth step whose results are seen in Fig. 5, consists in applying and pasting the wrapping paper 20 in place outside the box-wall and cover-skirt, and over the string or cord, leaving the extremity of the latter projecting as already described. The finished article then has the appearance best seen in the sectional views Figs. 6 and 7, and the box is opened as already explained.

I am not aware that the lining has been slipped into place during the method of making a box of this character, and the result of this step of my method is that the lining may be made as tall as desired. If it is of such size that it projects above the body-wall the same distance as the vertical dimension of the cover-skirt, it will contact with both heads in the finished article as seen in Fig. 5. If the projecting portion or neck 19 were not so tall, the result would then be that the upper end of this neck would contact within the top 11 when the parts were closed together, and be pushed down into the body as far as necessary, although the cord would still be retained as above described. If the lining were taller than shown in Fig. 3, the cover-skirt would not come down onto the upper edge of the body-wall, and quite a space would be left, although the cord might still be retained therein by the outer wrapper 20 when applied as described. Therefore the insertion of the lining at this time gives the maker the privilege of selecting a lining having the height desired. As to its horizontal dimension, if it is of exactly proper width its edges will abut on the line 18, but this is not important. As to its material, he can of course select such material and such grade of stock as is desirable in the box being made, according to the uses to which said box is to be put. In anv event, the cutting of the slit 15 along the dotted line 16 occurs at a time when there is no lining within the box, and therefore it is quite obvious that the lining is not injured, extreme care need not be taken in doing the cutting, and the lining might even be of metal as my method avoids injury to the cutting device.

When the box is constructed in the preferred manner, that is to say with the outer box and wrapper substantially non-absorbent and impervious to moisture while the lining composed of a veneer of red cedar is absorbent, a function is provided which is novel in this construction. The function is that in the packaging of cigars the cigars are placed in the package in a moist condition, and it is desirable to maintain the cigars in a moist condition but not in a condition of such moisture as will mold or decay. The cedar veneer lining being absorbent absorbs from the fresh cigars the moisture given off and by reason of the non-absorbent and impervious condition of the outer covering retains such moisture in its pores until through the lapse of time the cigars have become somewhat dry when the cedar gives off its moisture retaining the cigars in moist and merchantable condition for a long space of time, the action being the same as the action of a humidor. The initial taking up of the moisture of the cigars reduces the moisture to such a degree that the cigars do not mold or decay and the later giving off of such moisture retains the cigars in the required degree of moisture. While the present invention is not limited to the construction of a box with a non-absorbent and impervious exterior and absorbent interior lining, the preferred form is of this nature.

I claim:—

The herein described method of making boxes consisting in first winding a sheet around and attaching it to the edges of the box-heads and connecting its own edges with

each other, next cutting through the wall thus produced and on a line parallel with the uppermost head so as to separate the box body from the cover, next bending a flexible lining until its edges contact with each other and inserting it within the body-wall, next applying the cover to the top of said lining and pushing the latter downward, and finally applying and securing an outer wrapper sheet to the outer faces of said skirt and wall, all as hereinbefore set forth.

In testimony whereof I affix my signature in presence of witnesses.

HENRY LEIMAN.

Witnesses:
W. B. WILLIAMSON,
ROLAND A. WILSON,
S. M. HANES.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."