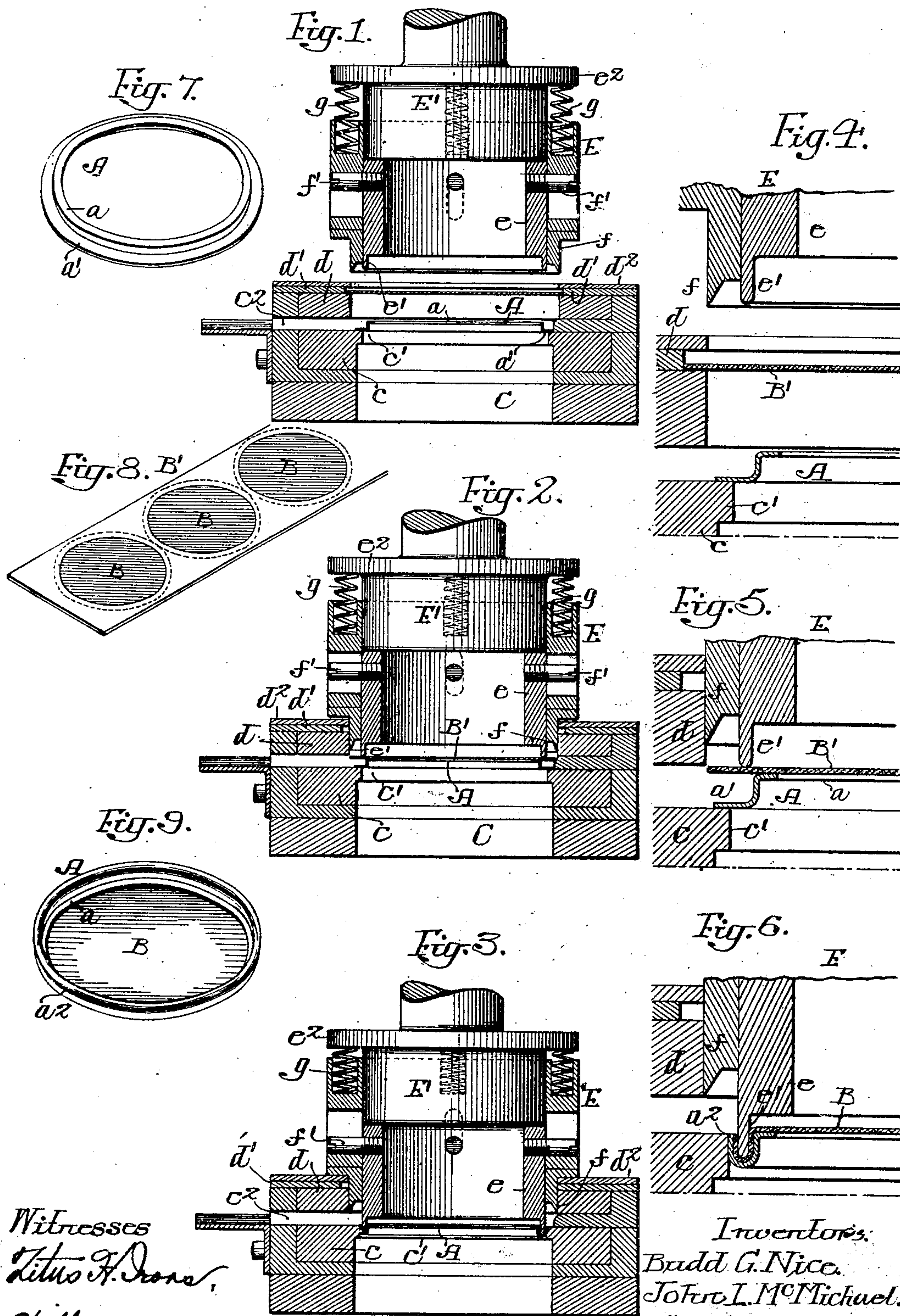


B. G. NICE & J. L. McMICHAEL.  
 PROCESS OF MANUFACTURING BOTTOMS OR LIDS FOR BOXES.  
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Witnesses  
 Titus A. Irons,  
 Will A. Burrows

Inventors  
 Budd G. Nice,  
 John L. McMichael,  
 by Eric S. Edwards,  
 Attorney



# UNITED STATES PATENT OFFICE.

BUDD G. NICE, OF OGONTZ, AND JOHN L. McMICHAEL, OF PHILADELPHIA,  
PENNSYLVANIA.

PROCESS OF MANUFACTURING BOTTOMS OR LIDS FOR BOXES.

962,851.

Specification of Letters Patent. Patented June 28, 1910.

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*To all whom it may concern:*

Be it known that we, BUDD G. NICE and JOHN L. McMICHAEL, citizens of the United States, residing in Ogontz, Pennsylvania, and Philadelphia, Pennsylvania, respectively, have invented certain Improvements in the Processes of Manufacturing Bottoms or Lids for Boxes, of which the following is a specification.

10 This invention relates to certain improvements in the process of making bottoms or lids for paper boxes.

15 The object of the invention is to simultaneously shape the metal ring and the paper closure forming the top or bottom.

In the accompanying drawing, Figure 1, is a sectional view of a machine for carrying out our improved process, the punch being raised; Fig. 2, is a similar view to Fig. 1, with the punch in the mid position; Fig. 3, is a view similar to Fig. 1, with the punch in its final position; Figs. 4, 5 and 6 are enlarged views of part of Figs. 1, 2 and 3 respectively; Fig. 7, is a perspective view of the ring before being inserted in the machine; Fig. 8, is a perspective view of the paper blank before being cut and assembled with the ring, and Fig. 9, is a view showing the finished article.

30 In the manufacture of certain classes of paper boxes or canisters, the body portion is made of paper and the top and bottom are made of paper secured to the body portion by a ring flanged so as to extend from the end of the body portion, and then the flange is embedded in the body portion so as to confine the ring and the bottom or top to the body portion, making a very satisfactory box or container in which no metal is exposed in the interior of the box.

45 Heretofore it has been the usual practice to mount the plain disk forming the top or bottom on the end of the body portion and to apply the metal ring, breaking down the paper lid so that it will extend over the end of the body portion, but this is found impractical except when very light paper is used to form the lid. Where heavy material is used it is liable to break down the body portion in the endeavor to make the flange on the lid. By our invention we flange the lid simultaneously with flanging the metallic ring prior to the application of the bottom

or lid to the body portion, so that comparatively heavy paper can be used for the bottom or lid, yet the proper flange of the paper is always insured.

Referring now to the drawings, A is a metallic ring having an internal flange  $a$  and an external flange  $a'$ . This external flange is flat when introduced into the machine and when it is pressed by the machine it is bent to form a channel  $a^2$  for the reception of the body portion.

B is the bottom or lid made of paper and punched from a strip B' on the dotted lines shown in Fig. 8. The machine first punches the paper then forces it over the ring and finally bends up the ring and paper to form a groove.

C is the die having a ring  $c$  provided with a flange  $c'$  upon which rests the metallic ring A and above the ring  $c$  of the die is a ring  $d$  which supports the paper disk B'. There is a space  $c^2$  between the two rings to allow for the insertion of the metallic ring A into position. Above the die ring  $d$  are plates  $d'$  forming a guide for the strip B' of paper, from which the bottoms or tops are made, and  $d^2$  is a plate having a circular opening. This plate overhangs the guiding strip  $d$  so as to prevent the lifting of the strip after the punch has cut the paper.

E is the punch made up of a plunger E', an annular pressing member  $e$  having a flange  $e'$  at its lower end and an annular cutter  $f$  slotted for the reception of pins  $f'$  carried by the ring section  $e$ , and between the cutter and the flange  $e^2$  on the plunger E are springs  $g$  which tend to force the edge of the cutter down below the end of the flanged ring  $e$ , so that when the plunger is moved toward the die the cutter  $f$  will first come in contact with the paper strip E' and will cut the disk B from the paper and the plunger will then force this paper disk through the die on to a metallic ring A, as illustrated in Fig. 5. On the continued movement of the plunger the flange  $e'$  will bend the paper disk over the metallic ring A and at the same time will bend up the flange  $a'$  of the ring A with the edge of the paper bottom or cap D' forming the channel for the reception of the body portion, as indicated in Fig. 6, the plunger forcing both the ring and the paper disk through the die.

Pressure thus exerted confines the paper and the metallic ring so that both can be placed upon the body portion and crimped.

We claim:

- 5 1. The process herein described of making bottoms or lids for boxes or other containers, said process consisting in first assembling a flat sheet of material with a metallic ring having a flat flange, simultaneously  
10 pressing the flange and the edge of the sheet of material so as to form a groove in both elements for the reception of the edge of the body portion of the container.
- 15 2. The process herein described of making bottoms or lids for boxes or other containers, said process consisting in first cutting a

disk of paper to form the bottom or lid of the box, then pressing said disk on to a metallic ring having a flat flange, then turning up the flange of the ring simultaneously 20 with the edge of the paper disk so as to make a channel in both for the reception of the end of the body portion.

In testimony whereof, we have signed our names to this specification, in the presence of 25 two subscribing witnesses.

BUDD G. NICE.  
JOHN L. McMICHAEL.

Witnesses:

WM. E. SHUPE,  
WM. A. BARR.