No. 836,399. PATENTED NOV. 20, 1906.

A. OESTERREICH.

MACHINE FOR MAKING NECKS FOR PAPER BOXES.

APPLICATION FILED JAN. 16, 1904.

Fig. 1

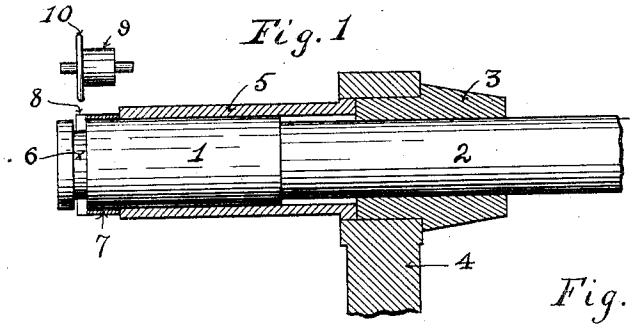


Fig. 2a

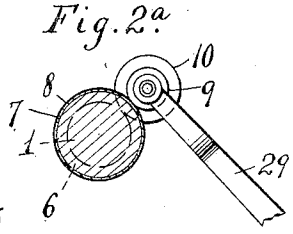


Fig. 2

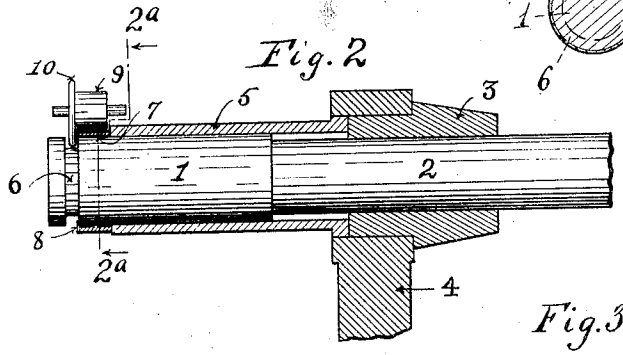


Fig. 3a

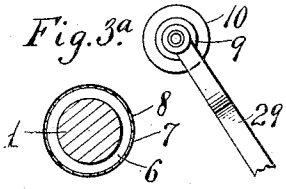
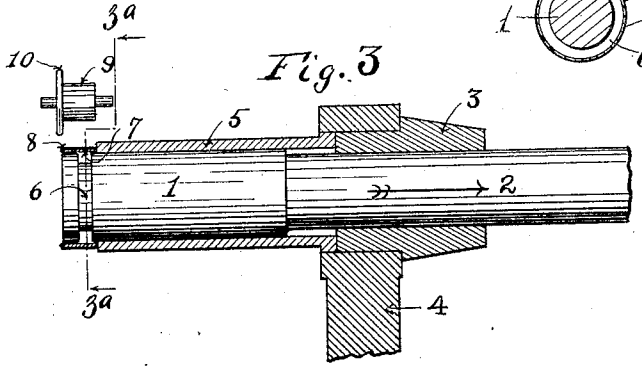


Fig. 3



Witnesses.
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UNITED STATES PATENT OFFICE.

ALBIN OESTERREICH, OF HANOVER, GERMANY, ASSIGNOR, BY MESNE ASSIGNMENTS, TO FRED N. BURT, OF BUFFALO, NEW YORK.

MACHINE FOR MAKING NECKS FOR PAPER BOXES.

No. 836,399. Specification of Letters Patent. Patented Nov. 20, 1906.

Application filed January 16, 1904. Serial No. 189,281.

To all whom it may concern:

Be it known that I, ALBIN OESTERREICH, a citizen of the Empire of Germany, and a resident of Hanover, Germany, have invented a certain new and useful Improvement in Machines for Making Necks for Paper Boxes, of which the following is a specification.

My invention relates to machines for making paper boxes, and more particularly relates to improvements in machines for forming and fixing the neck-pieces for cylindrical or polygonal paper boxes.

My invention is furthermore an improvement upon my former invention embodied in my Patent No. 815,626, dated March 20, 1906, granted on my application, Serial No. 82,669, filed November 18, 1901.

My invention has for its object to provide a machine which will carry out the process described in my Patent No. 815,858, dated March 20, 1906, granted on my application, Serial No. 210,288, filed May 28, 1904, in the manufacture of the necks or bodies of paper boxes.

In order that my invention may be fully understood, I will proceed to describe it with reference to the accompanying drawings, in which—

Figure 1 is a vertical longitudinal section of my improved device, showing the body-blank and paper covering wound onto the mandrel, the pressure-roller being out of contact with the neck or body. Fig. 2 is a similar view showing the pressure-roller in contact with the neck or body and the edge of the paper covering turned over the edge of the body-blank. Fig. 2ª is a transverse section thereof, taken on the line 2^a 2^a of Fig. 2, showing the pressure-roller supported as illustrated in my patents hereinbefore referred to. Fig. 3 is a similar view to Figs. 1 and 2, showing the pressure-roller out of contact with the neck or body and the edge of the paper covering turned over the edge of the body-blank and within the neck piece or body ready to be shoved off from the mandrel. Fig. 3^a is a transverse section thereof, taken on the line 3^a 3^a of Fig. 3.

1 is a sliding and reciprocating mandrel having a reduced part 2. The reduced part 2 is free to rotate and to slide axially in a fixed bearing 3, which is fitted to a support 4. 5 is a fixed sleeve also fitted in the support 4 against the inner end of the bearing 3. The outer end of the mandrel is formed with a circumferential groove 6.

7 is the body of the neck wound or coiled upon the mandrel 1, together with a paper covering 8.

9 is a reciprocating pressure-roller, which takes the place of the pressure-wheel 28 and is mounted upon a lever 29, shown in my patents hereinbefore referred to. This pressure-roller 9 is therefore capable of being brought into contact with the outer surface of the neck. 10 is a flange upon the roller 9, adapted to enter the circumferential groove 6.

The mechanism for advancing the body-blank and paper covering of the neck and pasting the paper-covering strip and feeding and cutting the body-blank and covering-strip is shown in my patents hereinbefore mentioned.

The mandrel 1 is given motion in rotation and axially by the same mechanism as in said patents, and the pressure-collar 9 is reciprocated as in said patents, and means for gripping and holding the incoming end of the body-strip may be employed, such as shown in said patents. For this reason I have not shown the operating mechanism in this application.

As a matter of fact, in the manufacture of paper boxes of this description a machine is made like the machine shown in the former patents referred to in this application. This machine is constructed to make the box-body, tops, and bottoms. The necks are separately made and inserted, and to make these necks what is done is to remove parts of said machine and insert the special devices herein shown and described.

The circumferential groove 6 is cut near the end of the mandrel 1 and is so positioned that the edge of the inner wall will lie in a plane with the edge of the body over which the covering-strip is to be turned. The width and depth of this circumferential groove is such as to freely permit the inturning of the paper covering, as hereinafter described. The end of the sleeve 5 is so positioned as to permit the winding of the body-blank onto the mandrel 1 in the position shown in the drawings.

I will now describe the operation of my invention. A body-blank 7 and a covering-strip 8, coated with paste, are fed in. The mandrel 1 is given motion in rotation. The

roller 9 is moved down upon the incoming material and presses the body-blank and covering-strip firmly onto the mandrel. At the same time the flange 10 turns the projecting edge of the covering-strip 8 over the edge of the body-blank 7 and into the groove 6, as clearly shown in Fig. 2. This movement completed, the roller 9 is moved out of contact and the mandrel 1 is moved axially in the direction of the arrow in Fig. 3. This causes the edge of the neck adjacent to the sleeve 5 to come in contact with the edge of said sleeve, and as the axial movement is continued the inturned edge of the covering-strip 8 will come in contact with the outer wall of the groove 6 and will be turned in and firmly pasted down upon the inner surface of the body-blank 7. Further axial movement of the mandrel 1 will withdraw it from within the body-blank 7 and the finished neck will be free to drop out of the machine. It is to be noted that while the body-blank 7 is wound snugly upon the mandrel and given the proper diameter the edge is positioned or put in plane at right angles to its axis by contact with the end of the sleeve 5. Thus while held to position the covering-strip is folded in and pasted down upon the inner surface of the body, as described, and thus the cylinder or polygonal section is fixed. The importance of this feature will be at once understood, since it is necessary that the necks make a close fit with the box-covers, with which they have telescopic connection. It will be evident that I am able to accomplish the same end by reciprocating the sleeve 5 instead of the mandrel 1.

Having thus described my invention, what I claim is—

In a machine for making necks for paper boxes a rotating and axially-sliding mandrel having circumferential groove in its projected end, a sleeve fitting over the mandrel, a pressure-roller having a flange and adapted to work in conjunction with the mandrel and the circumferential groove, and means for reciprocating the pressure-roller.

In witness whereof I have hereunto set my hand in the presence of two witnesses.

ALBIN OESTERREICH.

Witnesses:
FRIEDRICH FIEDLER,
REINHOLD LÜDER.