(No Model.)

A. C. LUTZ.

METHOD OF MAKING PAPER TUBES.

No. 537,053. Patented Apr. 9, 1895.

Fig. 1.

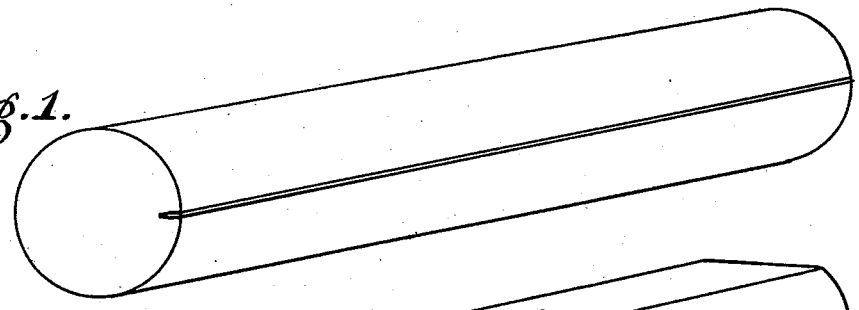
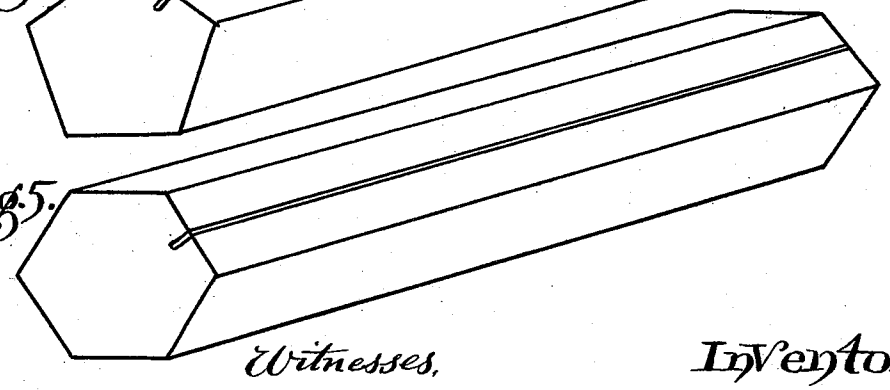


Fig. 2.

Fig. 3.

Fig. 4.

Fig. 5.



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UNITED STATES PATENT OFFICE.

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METHOD OF MAKING PAPER TUBES.

SPECIFICATION forming part of Letters Patent No. 537,053, dated April 9, 1895.

Application filed July 30, 1894. Serial No. 518,927. (No model.)

To all whom it may concern:

Be it known that I, ALBERT C. LUTZ, a citizen of the United States, residing at Cleveland, in the county of Cuyahoga and State of Ohio, have invented certain new and useful Improvements in Methods of Making Paper Tubes, of which the following is a specification.

This invention relates to the manufacture of paper tubes, and has for its object to facilitate the making of perfected paper tubes for all the purposes to which they are applicable, and it consists in the manner and means employed substantially as hereinafter described and pointed out in the claims.

In the accompanying drawings:—Figure 1 represents a round roller. Fig. 2 represents a roller having two flat sides. Figs. 3, 4, and 5, represent angular or many sided rollers. Each of said rollers is provided with a longitudinal groove.

In carrying out my method I proceed as follows: First, I take any one of the rollers and insert the edge of a sheet of paper or strawboard, (or both fine paper and strawboard, if I wish to line the tube with smooth or fancy paper,) into the groove, bending down the sheet to form a flange. Next I revolve the roller to wind the sheet once around, then coating the balance of the sheet with paste or sizing, then revolving the roller and wrapping the moist sheet tightly upon itself until the whole sheet is rolled up. The moistened sheet expands and is rolled and wrapped under a tension, and is then left to dry, and in drying the contraction of the paper on the roller renders the tube stiff, strong and solid.

To remove the shrunken tube from the roller I cut a longitudinal slit in the tube by placing a knife in the groove by the side of the flange, taking care not to sever it, desiring to sever the tube from end to end. The flange is again utilized for reuniting the tube, which is done by means of paste or any adhesive substance, and joining the cut edge of the tube onto said flange.

There are two principles involved in this method which are taken advantage of to facilitate and expedite the making of paper tubes. The first is the flange, and the second is the expansion and contraction of the paper stock. The first answers a double purpose, that is of enabling the paper to be wrapped under tension, and for reuniting the tube after being removed from roller, the second enabling the paper to be wrapped under expansion and to be dried while contracting, thus making a superior article of tubing from paper material.

Having described my invention, I claim—

1. The method herein described for making paper tubes, which consists in providing round or angular rollers having a longitudinal groove in one side, then inserting the edge of the paper or strawboard in said groove, bending down the paper or board to form a flange, then once revolving the roller, next pasting or sizing the balance of the paper and revolving the roller to complete the tube, then severing the tube along the groove in the roller for removing it from the roller substantially as described.

2. The method herein described for making paper tubes, which consists in providing round or angular rollers having a longitudinal groove in one side, then inserting the edge of the paper or strawboard in said groove, bending down the paper to form a flange, then once revolving the roller, next pasting or sizing the balance of the paper and revolving the roller to complete the tube, then severing the tube along the groove for removing it from the roller, and then reuniting the tube by pasting the flange and attaching it to the cut edge of the tube substantially as described.

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