

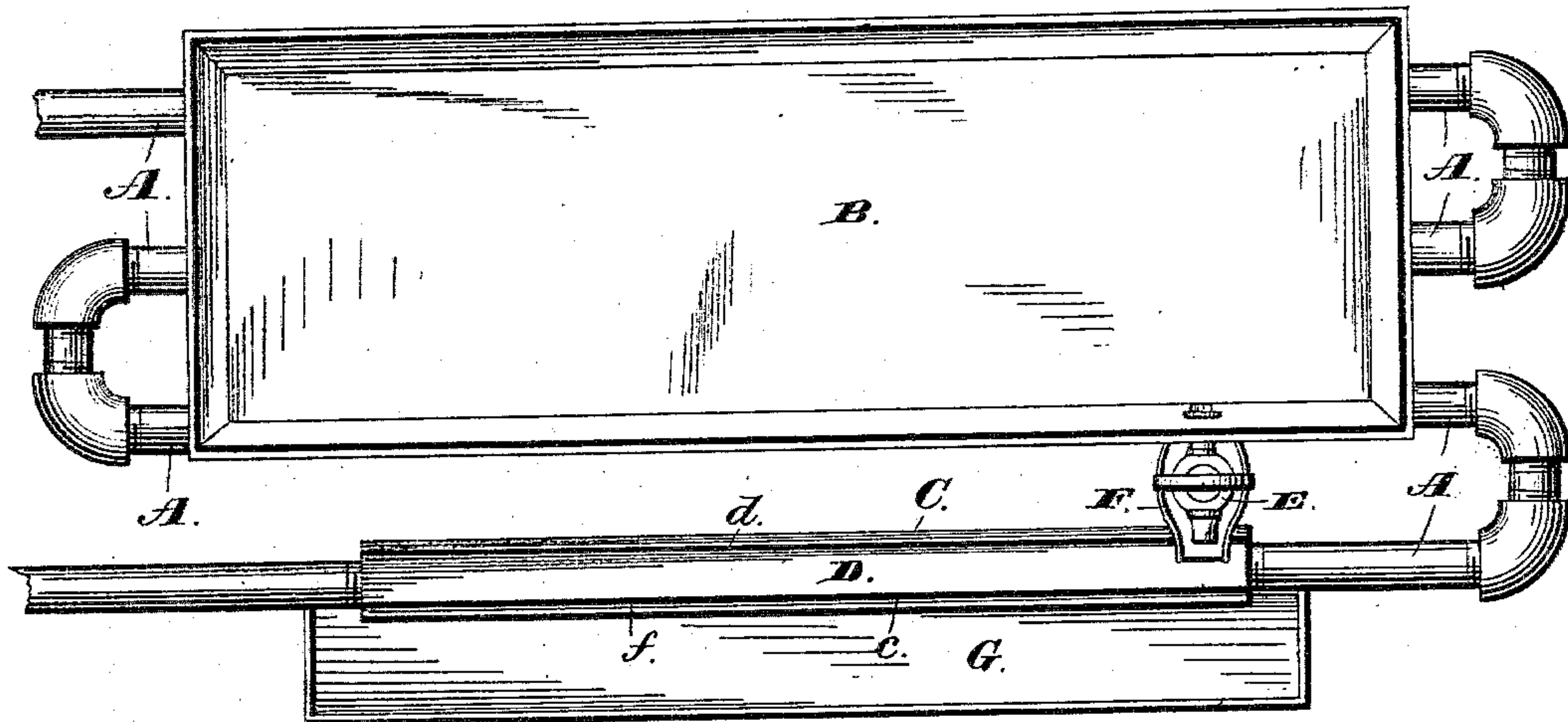
(No Model.)

J. B. DUKE.  
METHOD OF WAXING PAPER.

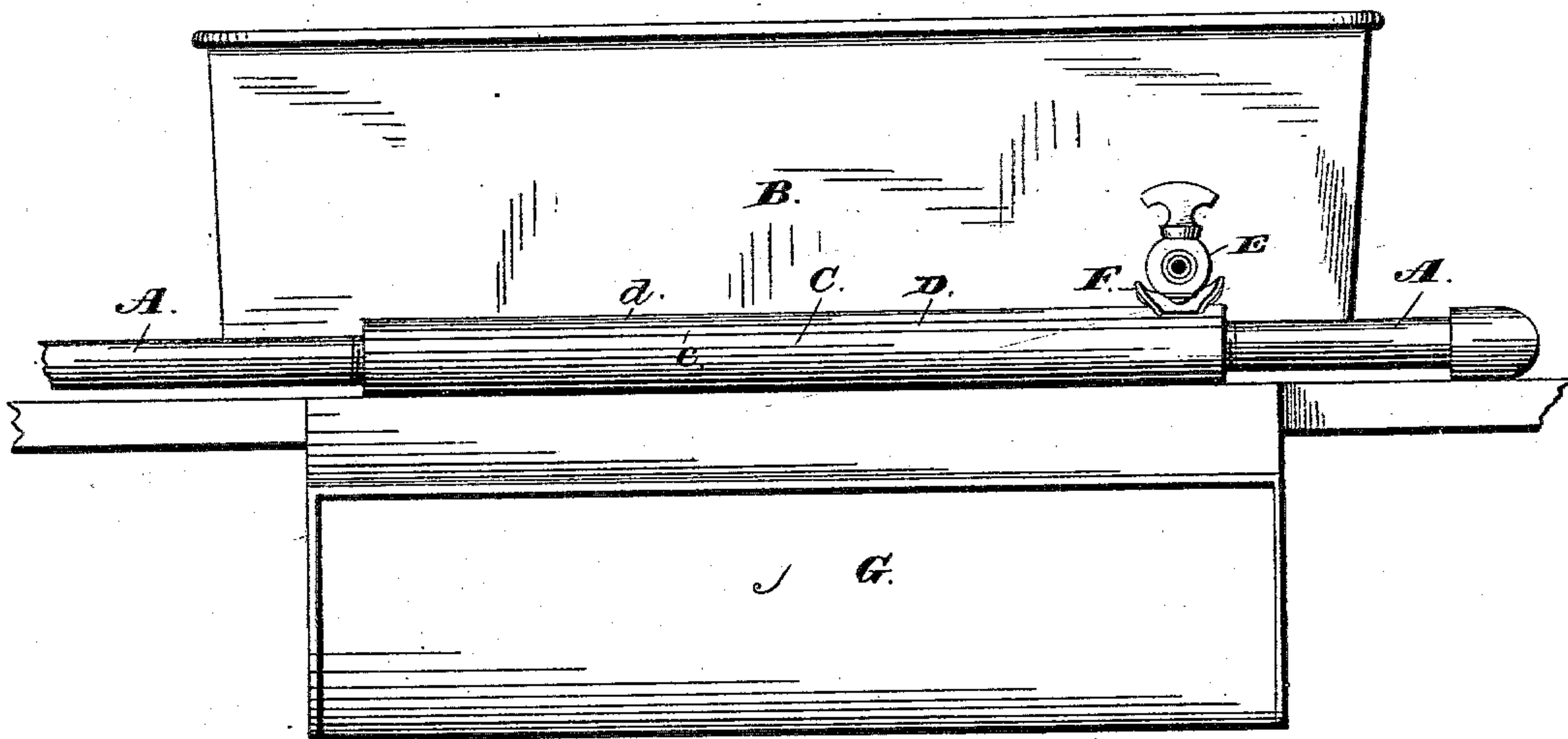
No. 286,403.

Patented Oct. 9, 1883.

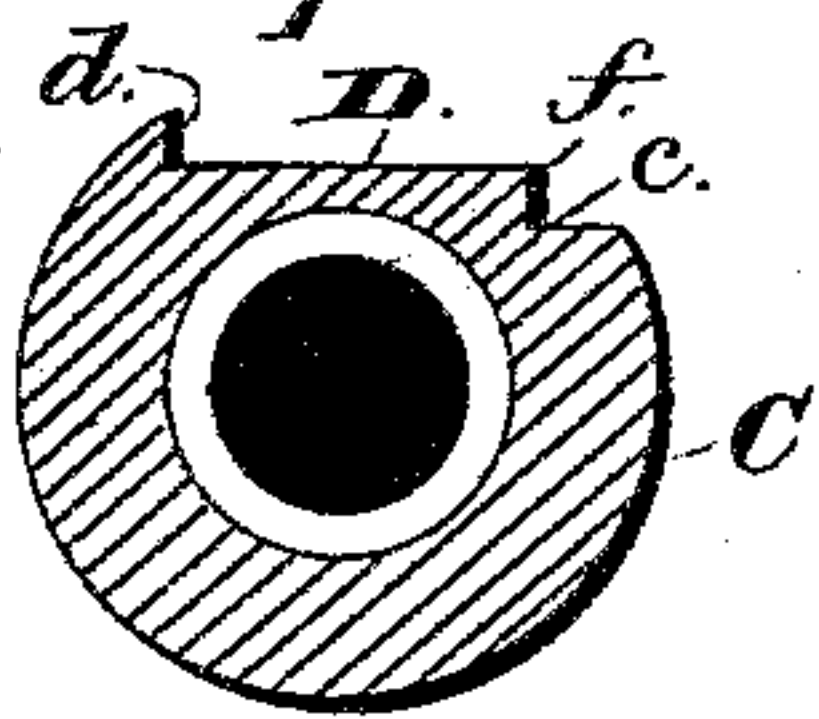
*Fig. 1.*



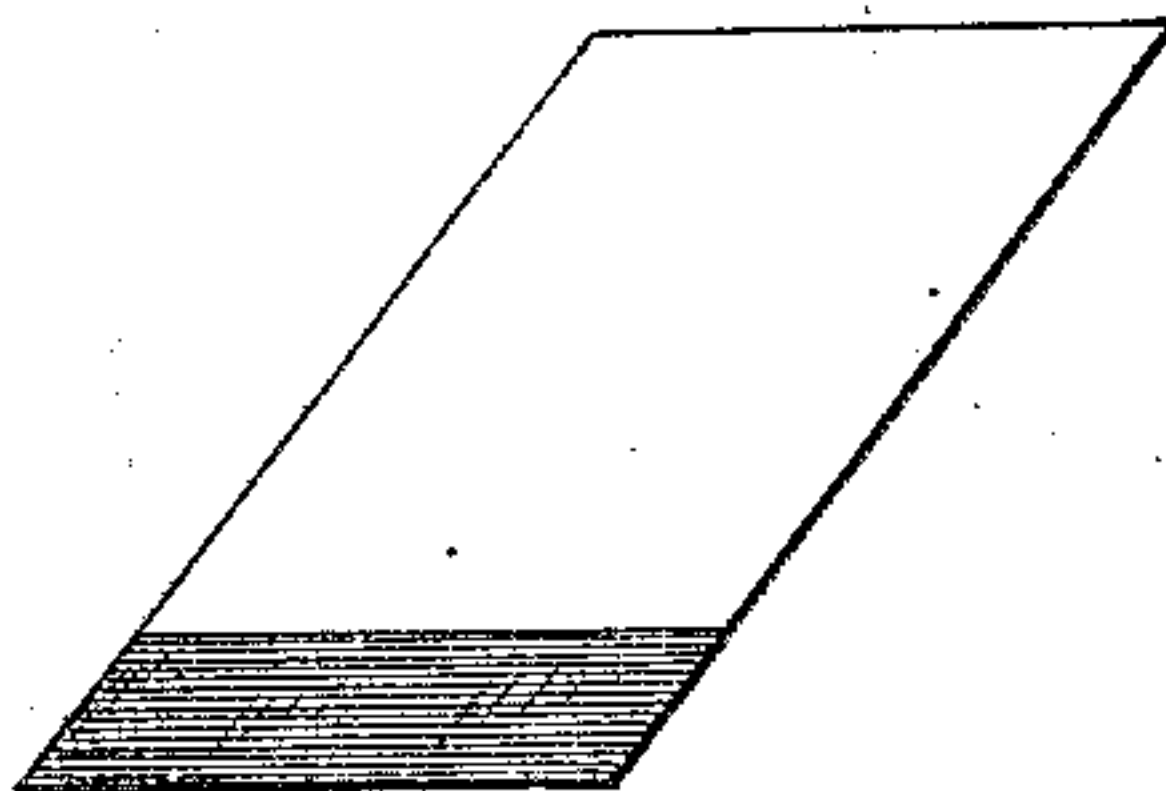
*Fig. 2.*



*Fig. 3.*



*Fig. 4.*



WITNESSES  
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# UNITED STATES PATENT OFFICE.

JAMES B. DUKE, OF DURHAM, NORTH CAROLINA.

## METHOD OF WAXING PAPER.

SPECIFICATION forming part of Letters Patent No. 286,403, dated October 9, 1883.

Application filed September 10, 1883. (No model.)

*In all whom it may concern:*

Be it known that I, JAMES B. DUKE, a citizen of the United States, residing at Durham, in the county of Durham and State of North Carolina, have invented new and useful Improvements in Methods of Waxing Paper, of which the following is a specification.

My invention relates to the manufacture of cigarette-paper, whether the same is made up and sold in the form of a book, or wrapped upon the filler and sold as a manufactured cigarette.

It is well known that the paper in general use for cigarettes is so light of texture and so extremely delicate in texture that it is readily disintegrated and broken down by the action of the saliva, causing a waste of the tobacco in the filler, which is left in the mouth of the smoker. Various means have been devised to avoid this difficulty, such as coating or saturating the paper with an impervious and neutral substance—such as wax or paraffine, and other substances—and it is the purpose of my invention to provide a novel and simple method whereby the cigarette-wrapper, or the sheet from which the wrappers are cut, may be treated for the purpose of applying thereto a coating of the kind described.

To this end therefore my invention consists in a novel method of applying to the end or ends of cigarette-wrappers a moisture-proof coating, consisting of melted wax or paraffine, or other equivalent material, whereby an impervious and insoluble coating is imparted to the paper.

The drawings hereto annexed show one form of apparatus by which I may carry out my invention, and in said drawings—

Figure 1 is a plan view. Fig. 2 is a side elevation. Fig. 3 is a transverse section. Fig. 4 is a view of a cigarette-wrapper after it has been treated by my method.

A in said drawings designates a coil or equivalent arrangement of steam-pipes of suitable form and dimensions, the pipes being arranged side by side in the horizontal plane. Resting upon this coil is a pan or similar vessel, B, adapted to contain paraffine, white wax, or an equivalent substance, which is kept in a fluid condition by the heat derived from the coil.

Mounted upon a section of the steam-pipe A, which extends in front or at one side of the trough, is a metallic sleeve, C, preferably made of metal having a high conducting-power. The upper face of this sleeve is flattened, as shown at D, a rib or feather, *d*, formed upon the rear side, rising above the flat surface B, and a groove or channel, *e*, being cut along its opposite edge, as shown in the sectional view, Fig. 3, leaving a sharp angle, *f*, which bounds the surface B in front.

In the wall of the pan B, near its bottom line, is placed an outlet-cock, E, of any suitable form, and below the same is placed a conductor, F, having its discharge end just above the surface D. This device may be arranged near one end of said surface, in which case the pipe-section should be slightly inclined. A drip-cup, G, is placed beneath the sleeve C.

With this form of apparatus my method is practiced in the following manner: By opening the cock E a limited flow of the melted paraffine or wax is permitted, which, by means of the conductor F, passes slowly to the flat surface D, the rib *d* affording a gage, which fixes and equalizes the portion of the wrapper treated. The hot melted wax or paraffine is immediately absorbed by the paper, and solidifies immediately upon removal, leaving a colorless, flexible, and perfectly neutral coating upon the end of the wrapper, the edge *f* serving to limit the application of the paraffine, and to give a straight clean cut line of demarcation between the coated and the uncoated portions.

It is evident that an entire sheet of paper may be treated by this method and afterward cut up into wrappers.

I make no claim, in the present case, upon the apparatus shown and described, as that forms the subject of a separate application.

It is evident, moreover, that the method described can be practiced with other forms of apparatus. For example, the sleeve C may be dispensed with, and in place thereof I may use a plate heated by any suitable means. The vessel B also may be heated in a variety of ways, and the conductor F may be of any length within practical limits.

Both ends of the cigarette-wrapper may, if desired, be coated in the manner set forth.



Having thus described my invention, what I claim is—

1. The method herein described of preparing the end or ends of a cigarette-wrapper to  
5 prevent it from being dissolved and broken down by the lips, said method consisting in diffusing melted paraffine or wax upon a heated metallic surface, having a suitable gage, and laying the end of the wrapper, or the edge of  
10 the sheet upon said surface, and immediately removing it and allowing the adherent material to cool, substantially as described.

2. The method set forth of applying melted wax, paraffine, and similar substances to the  
15 end or ends of a cigarette-wrapper, or the

edges of a sheet, said method consisting in melting paraffine or wax in a suitable vessel, percolating it therefrom upon a heated metallic surface, upon which it is diffused, and laying the end or ends of the wrapper or the  
20 edge of the paper sheet upon said surface, whereby it is coated with the melted material, substantially as described.

In testimony whereof I have hereunto set my hand in the presence of two subscribing  
25 witnesses.

JAMES B. DUKE.

Witnesses:

GEO. W. WATTS,  
JAMES W. SNEED.