

(No Model.)

W. P. MAXFIELD.

CARD CYLINDER AND MODE OF MAKING THE SAME.

No. 273,573.

Patented Mar. 6, 1883.

Fig. 1.

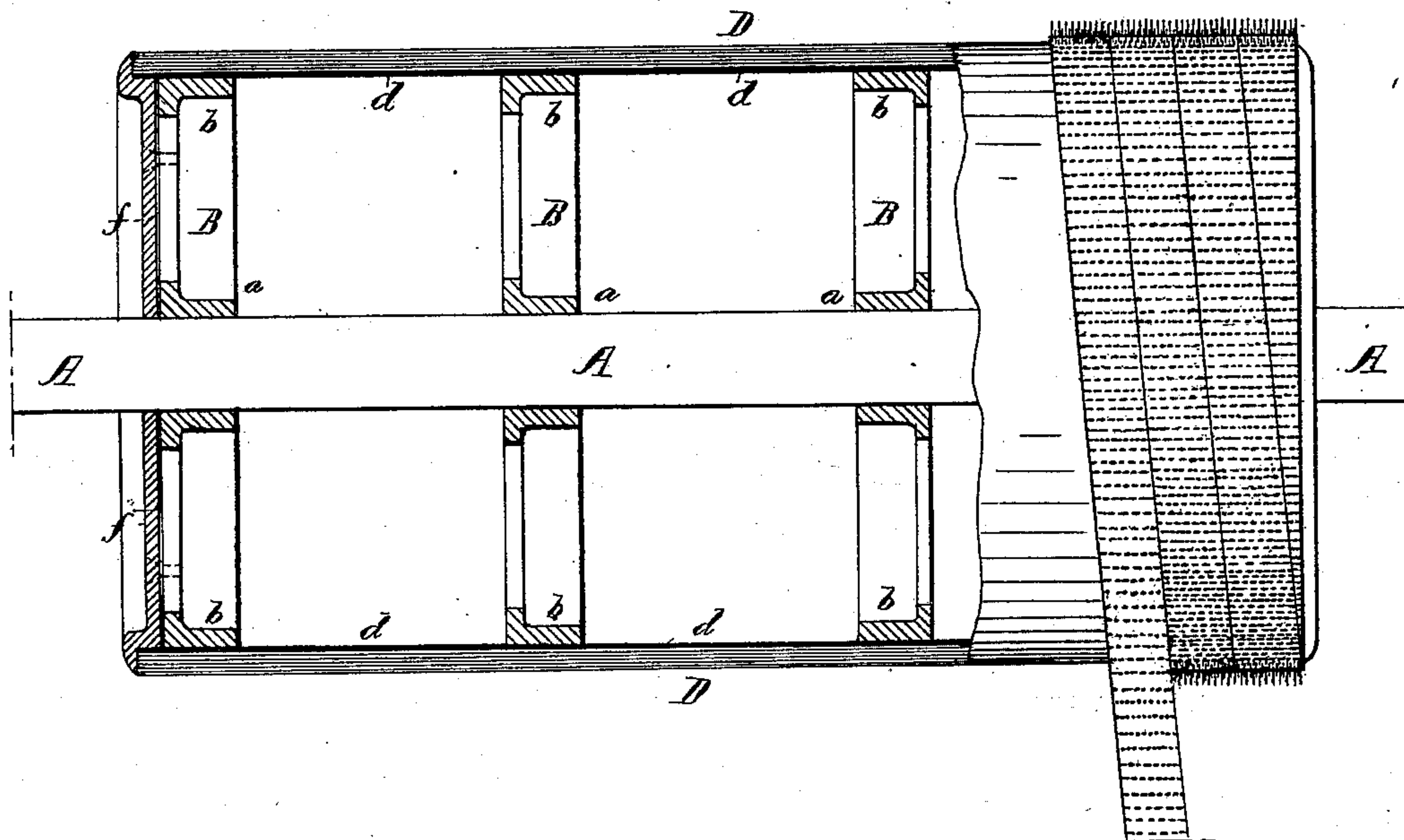
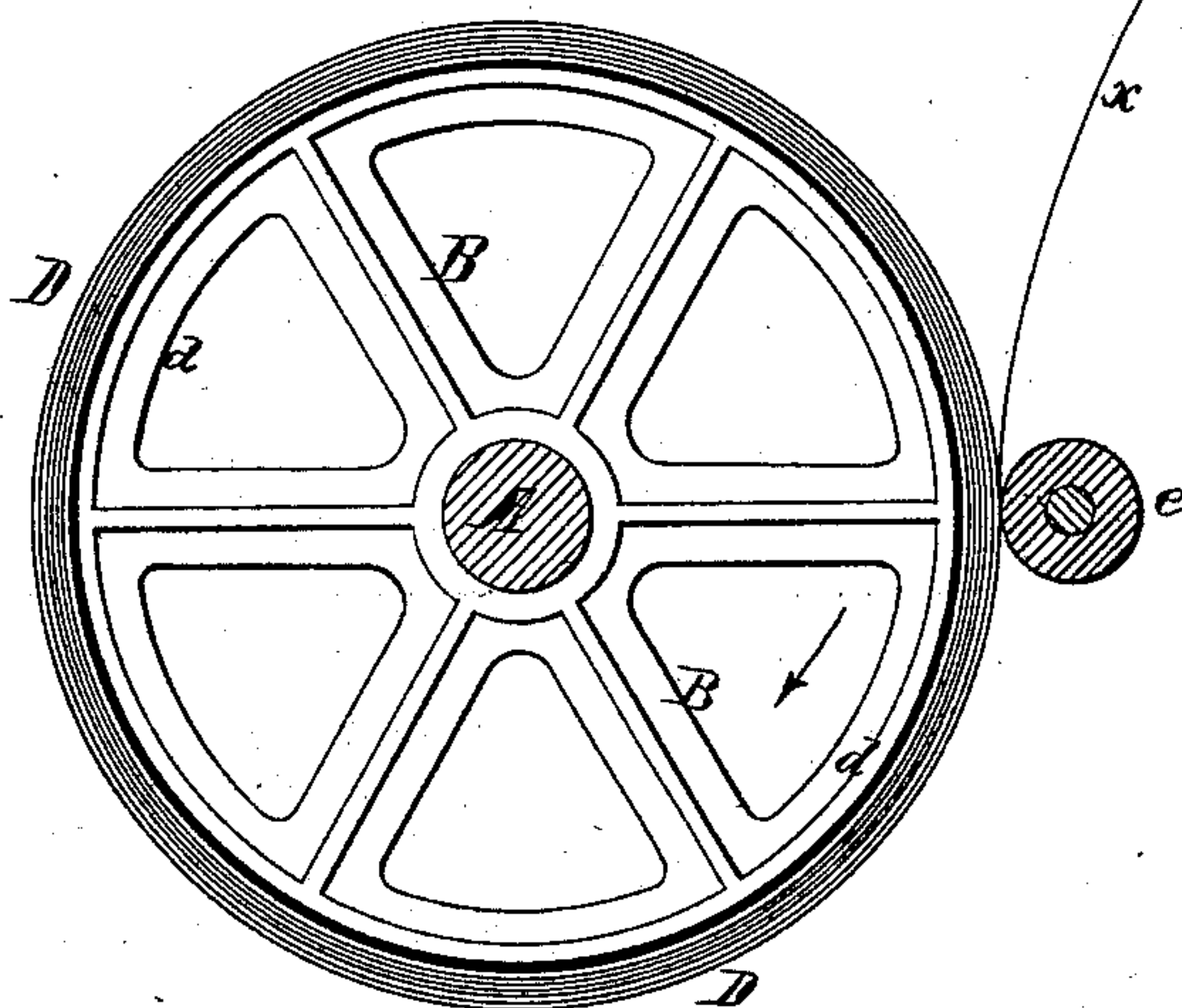


Fig. 2.



Witnesses
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UNITED STATES PATENT OFFICE.

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CARD-CYLINDER AND MODE OF MAKING THE SAME.

SPECIFICATION forming part of Letters Patent No. 273,573, dated March 6, 1883.

Application filed January 9, 1882. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM P. MAXFIELD, a citizen of the United States, residing in Philadelphia, Pennsylvania, have invented certain Improvements in Card-Cylinders and in the Mode of Making Same, of which the following is a specification.

The object of my invention is to construct a cylinder for carding-machines which will be lighter and less expensive than a metal cylinder, and not so liable as a wooden cylinder to distortion or injury due to uneven expansion and contraction. This object I attain in the manner which I will now proceed to describe, reference being had to the accompanying drawings, in which—

Figure 1 is a longitudinal section, partly in elevation, of my improved card-cylinder; and Fig. 2, a transverse section, showing the method of making the cylinder.

The cylinder comprises a central shaft, A, a number of frames, B, secured thereto, and having hubs *a* and annular flanges *b*, and a covering, D, formed by continuously coiling a sheet or sheets of paper until a covering of the desired thickness is obtained.

In carrying out my invention I prefer to first secure the frames B to the shaft A in their proper positions, and then to secure to the flanges *b* of the frames a cylinder, *d*, of light sheet metal or heavy pasteboard, which serves as a base or foundation for the covering D, this cylinder being of a length equal to that of the desired card-cylinder, or being made in sections, as preferred. The covering D is formed by attaching to the cylinder *d* one end of a sheet, *x*, of paper of a width equal to the length of the cylinder, and then slowly rotating the shaft A in the direction of the arrow, while the sheet *x* is acted upon by a roller, *e*, the journals of which are parallel with the axis of the shaft A, and are acted upon by suitable springs tending to force the roller against the paper, said journals, however, being free to move laterally as the winding operation progresses, and the covering increases in thickness. Paste may be introduced between the layers as the winding progresses, in order to render the covering compact and homogeneous, and the roller *e* may, if desired, be heated, in order to facilitate the

drying of this cement. If the sheet of paper is exhausted before the covering reaches the proper thickness, the end of a second sheet may be attached thereto, and the winding proceeded with.

A cylinder made according to my invention presents a smooth, uniform surface adapted for the reception of the card-clothing, which may be secured either by tacks or cement, the cylinder being lighter and less expensive than one of metal, and preserving its truth under circumstances where a wooden cylinder is apt to become distorted or injured by unevenness in expansion and contraction.

In Fig. 1 I have shown a wrapping of card-clothing at one end of the cylinder.

After the covering D is completed the ends of the same are preferably protected by flanged caps *f*, secured to the shaft A or to the end frames, B, as shown in Fig. 1.

Instead of winding the paper *x* directly upon the frame-work of the card-cylinder, the covering D may be made by winding the paper upon a separate former or mandrel, the covering so made being then applied to the frames B, and secured thereto in any suitable manner.

I have described my invention in connection with the cylinder of a carding-machine; but it will be evident that the same applies to the strippers, workers, and other rolls of the machine.

I am aware that it has been proposed to make card-cylinders of papier-maché cast in molds; but a cylinder made in this way does not possess, in the same measure as one made according to my invention, the desirable qualities of strength, compactness, and uniformity.

I am also aware that belt-pulleys have been covered with continuously-coiled strips of paper, and that barrels have been made in the same way. Hence I do not desire to cover, broadly, a paper cylinder of the character shown in the drawings; nor do I claim, broadly, the method described of making such a cylinder; but

I claim as my invention—

1. A card-cylinder comprising a central shaft, A, a frame-work, B, a covering, D, consisting of a coil or wrapping of paper, and card-clothing secured to the said paper covering D, as set forth.

2. A card-cylinder comprising a central shaft, A, frames B, a cylinder, *d*, a covering, D, consisting of a coil or wrapping of paper, and card-clothing secured to said covering D,
5 as set forth.

3. The combination, in a cylinder for card-
ing machines, of the shaft A, the frame-work
B, the coiled paper covering D, and the pro-
tecting-caps *f* at the ends of the cylinder, as
10 set forth.

In testimony whereof I have signed my name
to this specification in the presence of two sub-
scribing witnesses.

WM. P. MAXFIELD.

Witnesses:

HARRY DRURY,
HARRY SMITH.