M. A. FURBUSH.

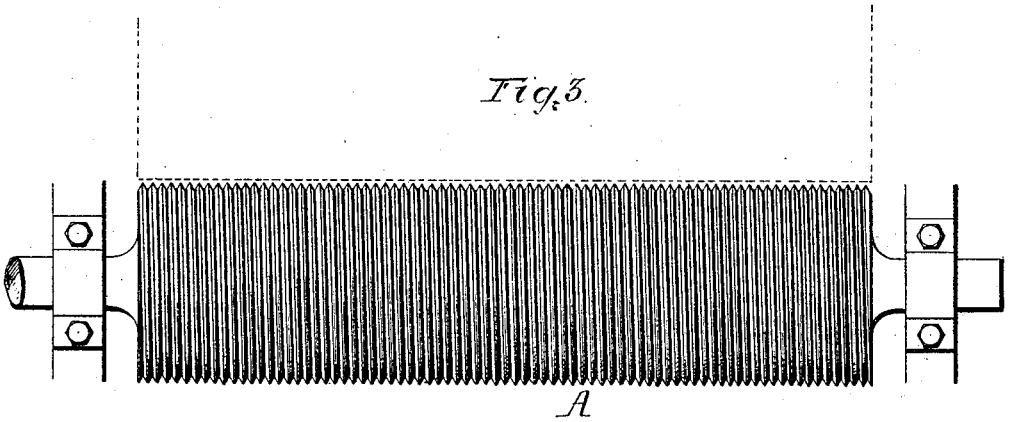
CARD-GRINDER.

No. 181,933. Patented Sept. 5, 1876.

Fig. 1

Fig. 2.

Fig. 3.



Witnesses
Harry Howson Jr.
Harry Smith

Merrill A. Furbush
by his Attorneys
Howson and Son

UNITED STATES PATENT OFFICE.

MERRILL A. FURBUSH, OF PHILADELPHIA, PENNSYLVANIA.

IMPROVEMENT IN CARD-GRINDERS.

Specification forming part of Letters Patent No. **181,933**, dated September 5, 1876; application filed May 18, 1876.

To all whom it may concern:

Be it known that I, MERRILL A. FURBUSH, of Philadelphia, Pennsylvania, have invented an Improvement in Sharpening the Teeth of Card Cylinders or Flats, of which the following is a specification:

The object of my invention is to so grind the teeth of a card cylinder or flat that a fine and sharp point will be imparted to the same; and this object I attain in the manner which I will now proceed to describe, reference being had to the accompanying drawing, which represents one form of device by which my invention may be carried into effect.

In grinding the teeth of card cylinders or flats it is desirable that they should be beveled on both sides, so as to form a sharp point, as shown in the enlarged diagram, Fig. 1.

The ordinary method of grinding the teeth is to first wrap a cylinder with twine, then coat the surface with glue, and apply a final coating of coarse emery.

In carrying out the grinding operation both the card-cylinder and the grinding-cylinder revolve in the same direction, the sharpening of the teeth being effected by the grains of coarse emery striking against the sides of the said teeth at the point of contact between the two cylinders. This plan, however, fails to impart the desired sharp point to the tooth, the latter, after being operated upon by such a machine, being in the condition shown in the diagram, Fig. 2, a result which is due partly to the large and coarse grains of emery employed, and partly to the uncertainty and irregularity of their action. This objection I overcome, and produce teeth with the desired sharp or, as they are technically termed, "needle points," by the use of fine flour emery and oil or water in connection with a grooved or threaded cylinder of metal, such as shown at A in Fig. 3 of the drawing. Both this cylinder and the card-cylinder rotate in the same direction, as usual, but the sharpening of the teeth is effected by the combined action upon their points of the fine moistened emery and the edges of the teeth of the cylinder A, a much finer point than usual resulting, partly because fine emery is used, and partly because a regular and even grinding-surface is presented by the edges of the teeth of the cylinder A.

In grinding card-flats the frame is moved across the face of the grinding-cylinder in a direction at right angles to the axis of the same, the grinding being effected at the point where the ends of the wires come in contact with the face of the grinding-cylinder in the same manner as in grinding the teeth of the card-cylinders. As the grooves between the teeth are all of one depth, the teeth of the card-cylinder will be straightened simultaneously with the sharpening operation by having their ends brought into contact with the bottoms of the grooves; but, if desired, a separate plain cylinder may be employed for straightening the teeth in addition to the sharpening-cylinder A.

I have shown in the drawing a cylinder, A, extending the entire width of the card-cylinder, which is shown by dotted lines; but it will be evident that a smaller grooved cylinder arranged to traverse across the face of the card-cylinder might be used, if desired.

I claim as my invention—

The within-described cylinder, having continuous V-shaped ribs, by which moistened emery is applied to the teeth of the card-cylinder, as set forth.

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

MERRILL A. FURBUSH.

Witnesses:

HARRY HOWSON, Jr.,

HARRY SMITH.