

(No Model.)

H. E. CUNNINGHAM.  
GRINDER FOR CARD CLOTHING.

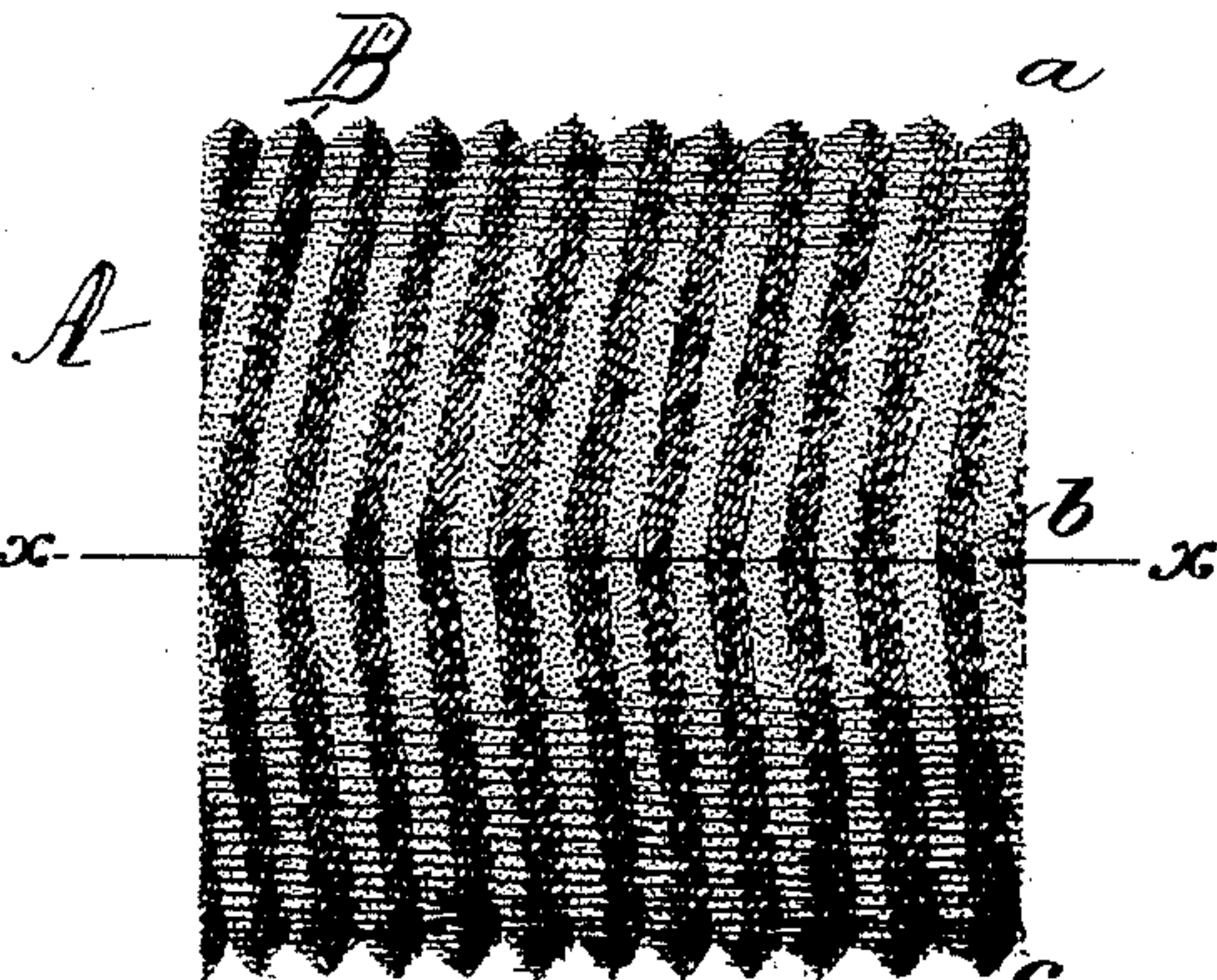
No. 424,763.

Patented Apr. 1, 1890.

*Fig. 1.*

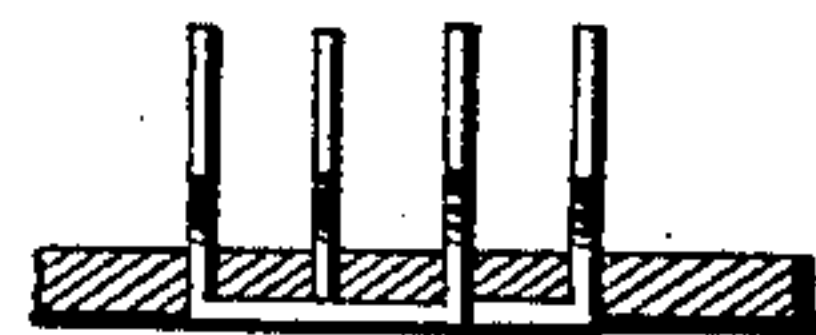


*Fig. 5.*

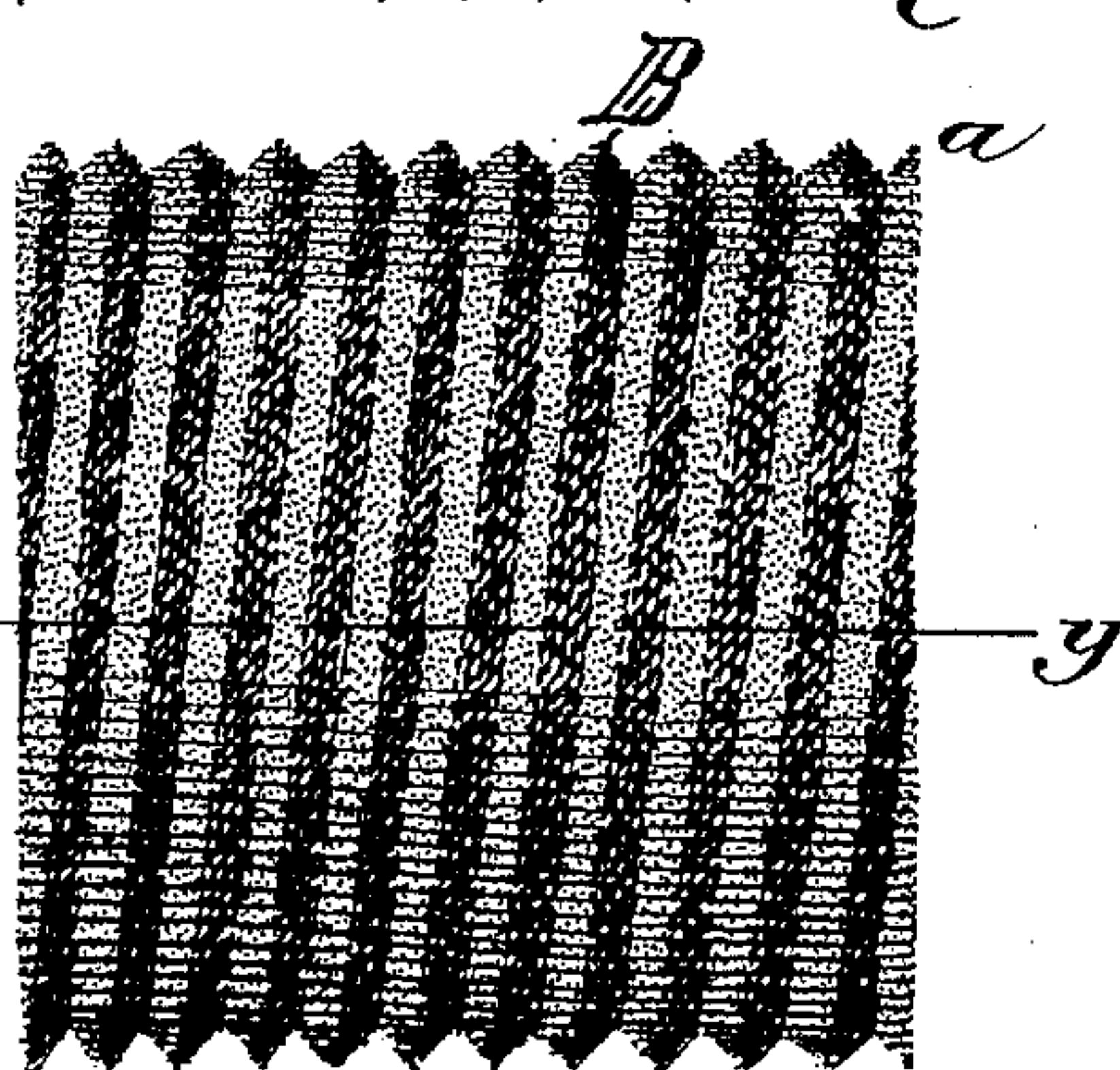


*Fig. 2. x.*

*Fig. 7.*

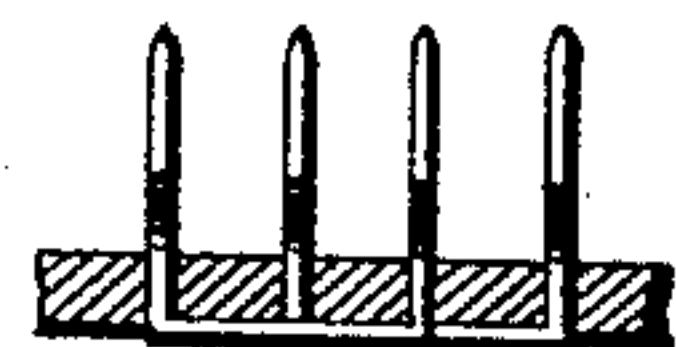


*Fig. 9.*

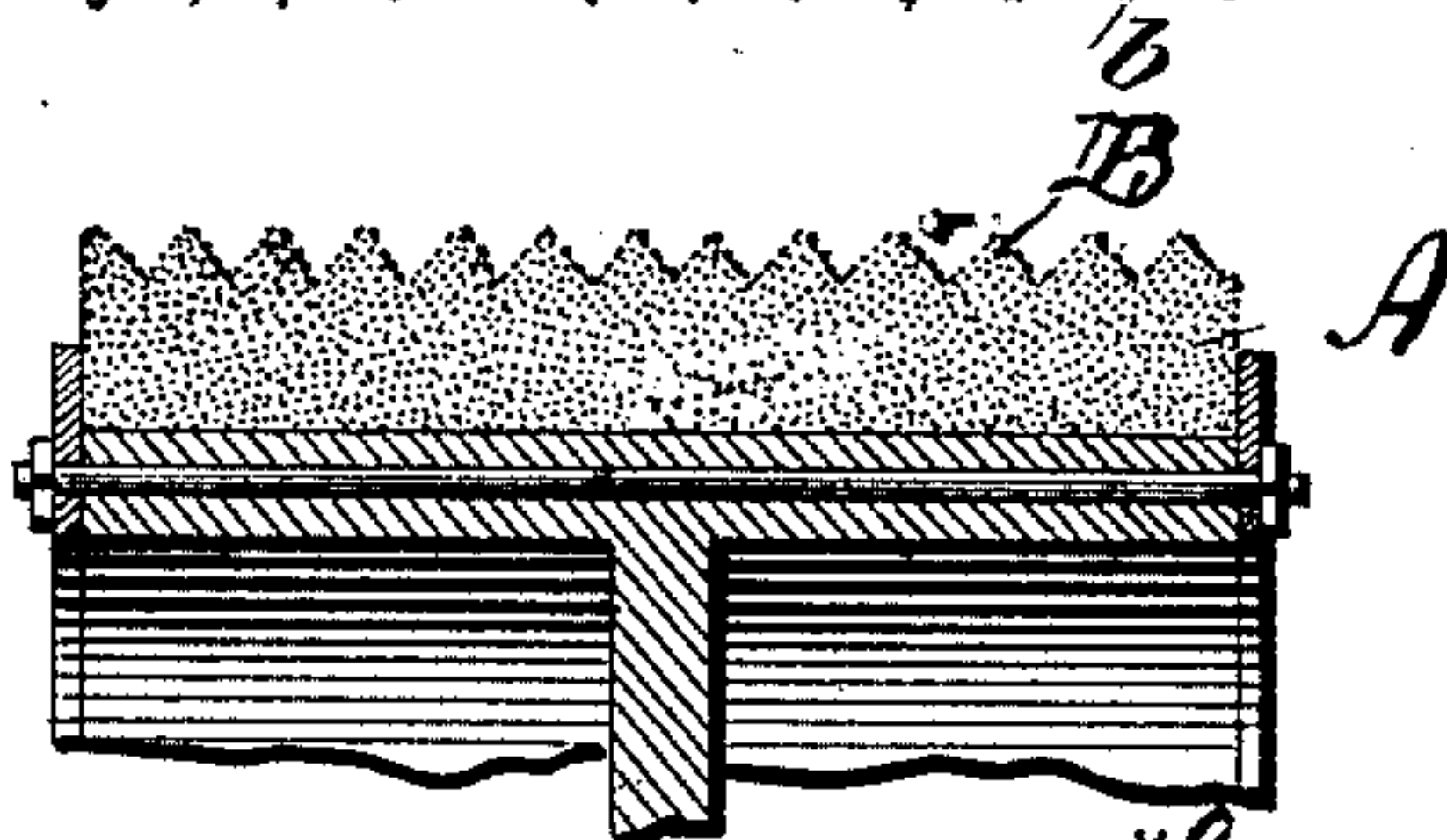


*Fig. 3. y.*

*Fig. 8.*



*Fig. 4.*



*Fig. 6.*



WITNESSES:

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# UNITED STATES PATENT OFFICE.

HERMON E. CUNNINGHAM, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR  
TO THE JAMES SMITH & COMPANY, OF SAME PLACE.

## GRINDER FOR CARD-CLOTHING.

SPECIFICATION forming part of Letters Patent No. 424,763, dated April 1, 1890.

Application filed May 23, 1889. Serial No. 311,781. (No model.)

*To all whom it may concern:*

Be it known that I, HERMON E. CUNNINGHAM, a citizen of the United States, residing in the city and county of Philadelphia, State of Pennsylvania, have invented a new and useful Improvement in Grinders for Card-Clothing, which improvement is fully set forth in the following specification and accompanying drawings.

10 My invention consists of a grinder or roller for card-clothing, formed of a cylinder having grinding-ridges, which extend obliquely in parallel lines, partly in one direction and partly in another direction, around the periphery of said cylinder, whereby the teeth of the card-clothing are subjected to a right and left grinding action of the ridges in the same cylinder, and thus effectively pointed and sharpened.

20 Figure 1 represents a perspective view of a grinder embodying my invention and of the supporting-shaft thereof. Fig. 2 represents a side elevation of the grinder on an enlarged scale. Fig. 3 represents a side elevation of another form thereof. Fig. 4 represents a section on lines either  $x x$  or  $y y$ , Figs. 2 and 3. Figs. 5, 6, 7, 8, and 9 represent various views of the card-teeth.

30 Similar letters of reference indicate corresponding parts in the several figures.

Referring to the drawings, A designates a cylinder, which is formed of emery, metal, or other material. On the periphery of the cylinder are ridges B, which in cross-section are pointed, and which in Fig. 3 extend in parallel lines obliquely around the cylinder—that is to say, the ridges extend in one direction from left to right for one half of the cylinder, as from  $a$  to  $b$ , and then from right to left for the other half of the cylinder to the starting-point, as from  $b$  to  $a$ .

45 In Fig. 2 the ridges extend in four different lengths—first, from the starting-point  $a$  on the right to the left to the point  $b$  for one-quarter of the periphery of the cylinder; then

from the point  $b$  to the right to the point  $c$  at another quarter of the periphery; next from the point  $c$  to the left to a point opposite the point  $b$ , the third quarter of the periphery, and, finally, to the right to the starting-point  $a$ . By this provision the ridges cross the points of the card-teeth from the right to the motion twice as often as the work is accomplished in Fig. 3, this result in either case being the grinding of the teeth with rounded points.

Figs. 5 and 7 show the teeth in blunt condition, Fig. 7 being a view at a right angle to Fig. 5.

Figs. 6 and 8 show the teeth after being subjected to the grinding action of the cylinder.

Fig. 9 represents a top view of one of the teeth as ground and on an enlarged scale.

I am aware that spiral ridges are not new, the same, however, being continuous and not independent as in my case, and such construction is hereby disclaimed.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. A grinder or roller for card-clothing, consisting of a cylinder having ridges thereon pointed in cross-section and extending obliquely to the axis of the said cylinder, substantially as described.

2. A grinder or roller for card-clothing, consisting of a cylinder having ridges thereon extending obliquely to the axis of the said cylinder, the said ridges extending from left to right a portion of their length and then from right to left for another portion, the adjacent portions of adjacent ridges being parallel, substantially as and for the purpose set forth.

HERMON E. CUNNINGHAM.

Witnesses:

JOHN A. WIEDERSHEIM,  
JAMES F. KELLY.