

(No Model.)

J. H. LEATHER.
CARDING CYLINDER.

No. 285,631.

Patented Sept. 25, 1883.

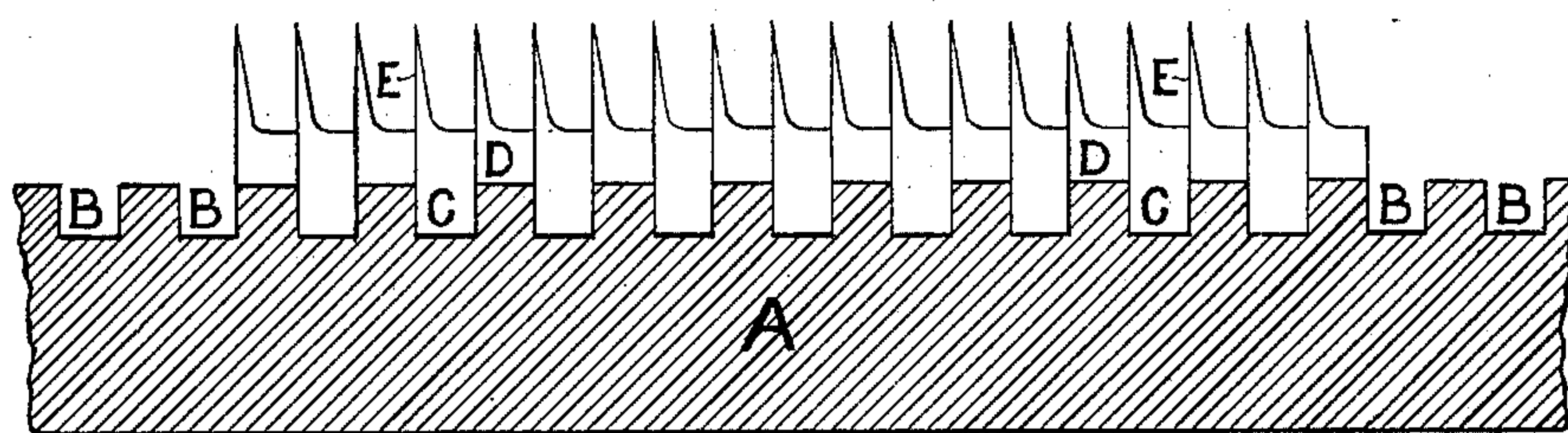


FIG. 1.

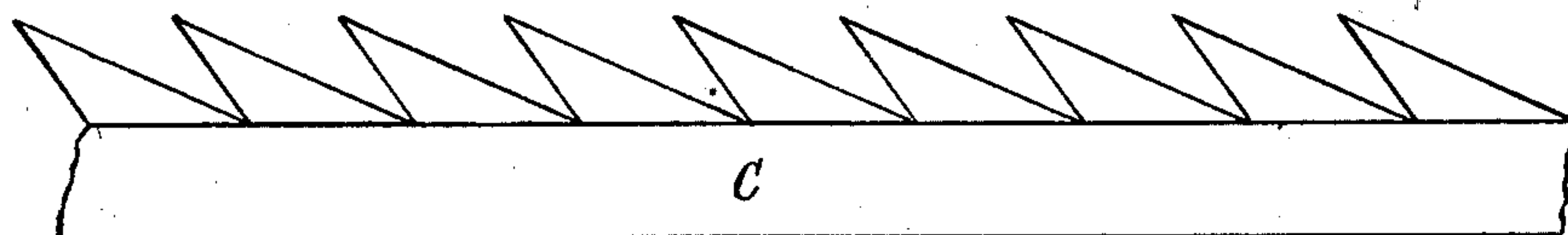


FIG. 2.

Witnesses
James F. Johns
Harry L. Ashenfelter

Inventor:
John H. Leather
by his Attorneys
Howen & Sons

UNITED STATES PATENT OFFICE.

JOHN H. LEATHER, OF CLECKHEATON, COUNTY OF YORK, ENGLAND.

CARDING-CYLINDER.

SPECIFICATION forming part of Letters Patent No. 285,631, dated September 25, 1883.

Application filed May 17, 1883. (No model.) Patented in England August 10, 1877, No. 3,057.

To all whom it may concern:

Be it known that I, JOHN HENRY LEATHER, a subject of the Queen of Great Britain and Ireland, and residing at Cleckheaton, in the county of York, England, have invented certain Improvements in Carding-Cylinders, (for which I have obtained a patent in Great Britain, dated the 10th day of August, 1877, No. 3,057,) of which the following is a specification.

My invention consists of certain improvements in that class of cylinders for carding or opening fibrous substances in which saw-toothed wire, commonly known as "Garnett wire," is secured in the periphery of the cylinder.

The object of my invention is to so construct a cylinder of this class that it will open a finer class of waste, open the waste more thoroughly, and at the same time pass a greater quantity of material through the machine than has hitherto been accomplished with the use of the ordinary cylinder, a further object of my invention being to render this kind of card-clothing available for other purposes for which, on account of its coarseness in pitch, it has not hitherto been applicable.

I accomplish my improvement in the following manner: I cut one or more continuous spiral grooves or threads in the periphery of the cylinder, round which I wind the saw-toothed wire, inserting the flange or rib at the back of the wire into the groove or thread, and pressing out the flange or rib by a process called "milling" or "riveting," so as to make it quite fast in precisely the same manner as is now generally in use; but (and this is what constitutes my invention) the flange or rib of this wire is so formed that instead of being entirely or almost entirely buried in the groove, as has hitherto been the case, one-half of its entire depth, which is double the depth of the groove into which it is inserted, stands above the natural surface or periphery of the cylinder, so forming another artificial spiral groove or thread, into which I now proceed to wind a second series of toothed wire, in all respects exactly similar to the first series, except that the flange or rib is only just one-half the depth of the flange or rib in the first series, so that when this second toothed wire is placed in the artificial groove and the flange

or rib is expanded and made quite fast therein by what is commonly called "milling," "riveting," or any other known process, the tops of the flanges or ribs of the first and second series of wire will both stand exactly the same height above the natural surface or periphery of the cylinder, and the points of the teeth of the first and second series of wire will both be exactly the same distance from the center of the cylinder. By these means I am enabled to construct a cylinder having in its lateral direction double the number of rows of teeth or wires that can be obtained by the ordinary method now in use.

The difficulty, as is well known, in constructing fine-pitched cylinders—say above twelve to the inch—is the liability of the metal between the grooves to break, and thus leave no support for the flange or rib of the toothed wire, whereas by my improvement, if the metal between the grooves is partly broken, the introduction of the second series of toothed wire supports the coil of the first series of toothed wire in the groove, and when operated upon in the manner before described the whole is rendered quite secure; and, moreover, as in my improvement I only require a groove to be cut in the cylinder for every alternate coil of wire, it necessarily follows that in clothing a cylinder having the same number of rows of wire by my invention I only require a groove or thread of one-half the number of cuts per inch, and therefore the rib of metal left between such cuts will be of double the thickness, and consequently very much less likely to break, than in the case with a cylinder cut and clothed upon the old system.

In the accompanying drawings, Figure 1 represents an enlarged longitudinal section through one side of a cylinder into which the wire teeth are fixed upon my improved principle, and Fig. 2 is an enlarged side elevation of the saw-toothed wire.

The cylinder-shell is indicated by the letter A. The grooves or threads B B are cut in the circumference of the cylinder, into which I place the flange or rib of the toothed wire C, which projects above the circumference of the cylinder A. The toothed wire is secured in the groove by the common method of milling or riveting. The flange or rib of the toothed wire D is inserted between the projecting por-

tion of the flange or rib of coil C—that is, above the circumference of the cylinder and the back or straight part, E. The flange of coil D is milled or riveted, and thus made quite
5 secure, and when finished the points of the teeth of the two coils are all the same distance from the center of the cylinder.

What I claim as my invention is—

The combination of a carding or opening
10 cylinder having grooves in its circumference with flanged toothed wire secured in said

grooves, and intermediate toothed wire secured between the flanges of the wire contained in the grooves, substantially as set forth.

In testimony whereof I have signed my name 15 to this specification in the presence of two subscribing witnesses.

JOHN HENRY LEATHER.

Witnesses:

JOHN GILL,

ARTHUR J. TAYLOR.