

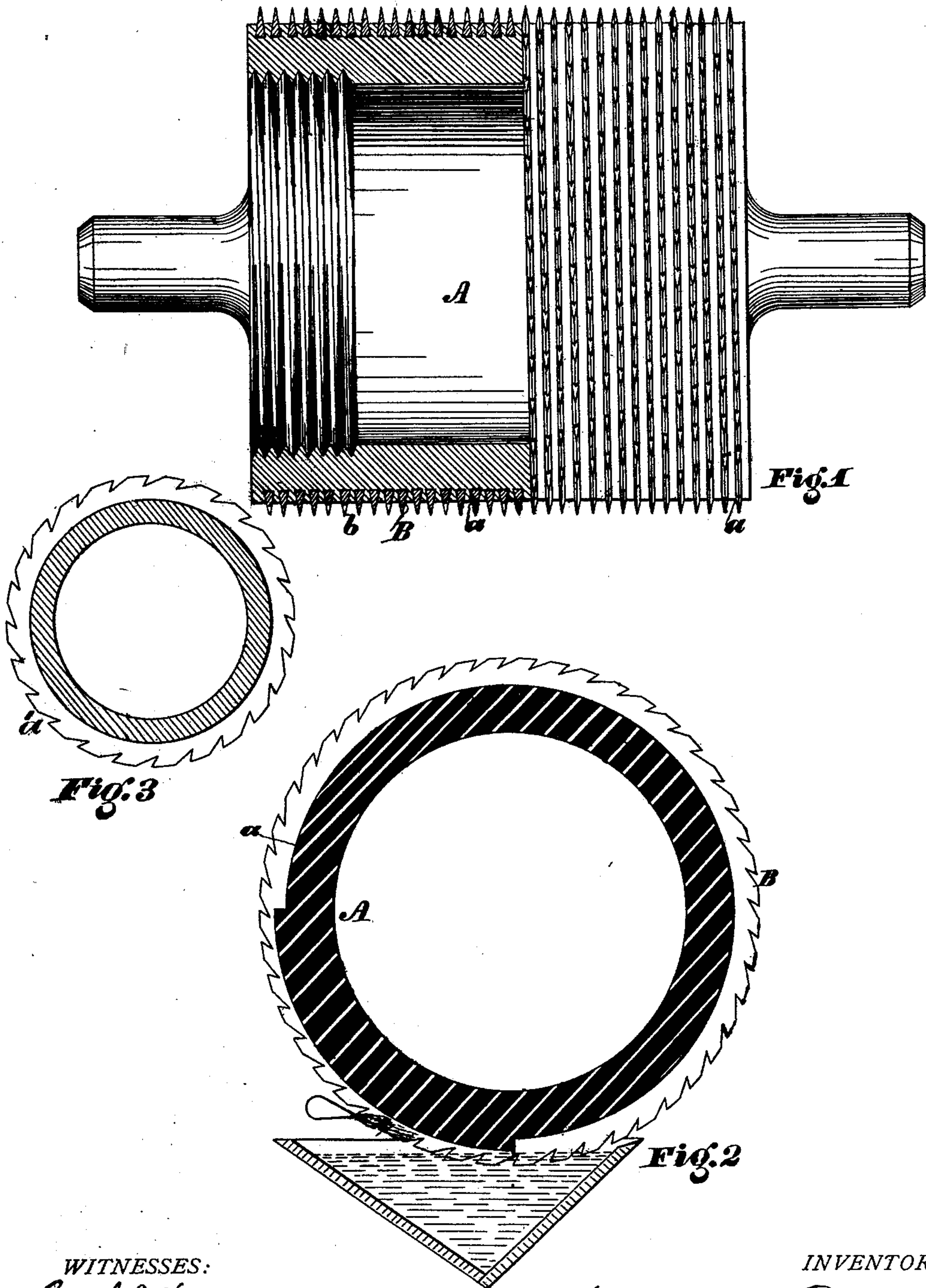
(Model.)

J. K. PROCTOR.

Burring and Ginning Cylinder.

No. 231,357.

Patented Aug. 17, 1880.



WITNESSES:
Saml. J. Vanstavern
Jos. B. Connelly

INVENTOR,
Josiah K. Proctor,
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UNITED STATES PATENT OFFICE.

JOSIAH K. PROCTOR, OF PHILADELPHIA, PENNSYLVANIA.

BURRING AND GINNING CYLINDER.

SPECIFICATION forming part of Letters Patent No. 231,357, dated August 17, 1880.

Application filed July 2, 1880. (Model.)

To all whom it may concern:

Be it known that I, JOSIAH K. PROCTOR, of Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented certain
5 new and useful Improvements in Burring and Ginning Cylinders; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable
10 others skilled in the art to which it pertains to make and use it, reference being had to the accompanying drawings, which form part of this specification, in which—

Figure 1 is a side elevation, partly in section; and Figs. 2 and 3 are transverse vertical sections of a burring-cylinder having its wire
15 toothing hardened after being fastened thereto.

My invention has special reference to that class of burring and ginning cylinders in which wire toothing or fillet is inserted in grooves,
20 either spiral or annular, formed in the cylinder, the metal of such cylinder being then turned in or calked against the base of the wire or a shoulder thereon, to hold the latter in place.

25 My invention consists, first, in the process or method for producing burring, ginning, and other cylinders for treating fibrous and textile materials—namely, by inserting wire toothing in grooves formed in said cylinders, fastening
30 the toothing in said grooves, and then hardening the projecting and exposed parts of the toothing without hardening the cylinder; second, in the method of hardening toothing or clothing on cylinders for treating fibrous
35 and textile material which consists in revolving the cylinder under the influence of a blast or flame to heat the teeth, and dipping the latter as the cylinder revolves in a cooling-fluid; third, in a burring or ginning cylinder com-
40 posed of a metal roll having grooves formed therein, wire inserted in said grooves and held by having the metal of the roll turned in against or over it, the projecting points of the teeth of the wire being hardened, while the
45 base of the wire or part covered in by the rolls is unhardened.

Referring to the accompanying drawings, A indicates an iron cylinder, and B the wire toothing or clothing therefor. Said cylinder
50 is grooved spirally, as shown at *a* in Figs. 1 and 2, or annularly, as at *a'* in Fig. 1, the wire

in either case having its base inserted in the grooves and being held therein by calking or turning over the metal of the cylinder against such base or upon a shoulder formed thereon, 55 leaving the teeth *b b* projecting and exposed. If iron wire be used, it may be either shouldered, triangular in cross-section, or of other suitable shape. If steel wire be used, it should be that shown and claimed in Letters Patent of 60 the United States, dated April 16, 1878, No. 202,370.

After the toothing has been applied to and fastened on the cylinder it is hardened by any of the known methods for hardening metals. 65

An efficient and rapid method of hardening is as follows: The cylinder is located over a trough of water in such relation thereto that its teeth will dip into the liquid. A blow-pipe or fire-blast is then arranged so that its flame 70 will strike the teeth as close to the surface of the water as possible without touching the liquid. The cylinder is now revolved upon its longitudinal axis with just sufficient rapidity to allow the projecting and exposed part of the toothing to be heated to the required tem- 75 perature by the blast or flame and immediately immersed in the water. As the teeth are quite fine and thin, they heat rapidly and attain the required temperature for immersion and hard- 80 ening before the metal of the cylinder becomes heated to any considerable or injurious extent. Hence the cylinder does not expand so as to injure its shape or produce any displacement of the wire, nor does it harden, so that should 85 it be necessary or desirable to remove the toothing from the cylinder at any time the metal of the latter will be soft enough to permit such operation in the customary manner and with the usual tools and machinery. When 90 steel wire is to be hardened the process as above described may be practiced. For hardening iron wire the iron in addition, when heated, should be sprinkled with prussiate of potash or its equivalent. 95

Cylinders thus constructed may be produced at very much less expense than those having steel rings hardened before being put on the cylinder, and at the same time will be found to be fully as effective and durable as the latter. 100

I am aware that iron and steel clothing have been heretofore used in grooves in cylinders

for treating fibrous and textile materials, the iron and steel being soft and unhardened.

What I claim as my invention is—

1. The process or method herein described
5 for producing burring, ginning, and other cylinders for treating fibrous and textile materials—namely, by inserting wire tothing in grooves formed in said cylinders, fastening the tothing in said grooves, and then hardening
10 the projecting and exposed parts of the tothing without hardening the cylinder, as set forth.

2. The burring or ginning cylinder composed of the metal roll A, with grooves formed therein and wire inserted in said grooves and
15 held by having the metal of the roll turned in against or over it, the projecting points or teeth of the wire being hardened, while the

base of the wire or part covered by the rolls is unhardened, as set forth.

3. The method of hardening tothing or 20 clothing on cylinders for treating fibrous and textile material, which consists in revolving the cylinder under the influence of a blast or flame to heat the teeth and dipping the latter as the cylinder revolves in a cooling-fluid, sub- 25 stantially as set forth.

In testimony that I claim the foregoing I have hereunto set my hand this 25th day of May, 1878.

JOSIAH K. PROCTOR.

Witnesses:

GEO. C. SHELMERDINE,
SAML. J. VAN STAVOREN.