(No Model.)

O. T. BUGG.

COTTON GIN.

No. 333,387. Patented Dec. 29, 1885.

Fig. 1.

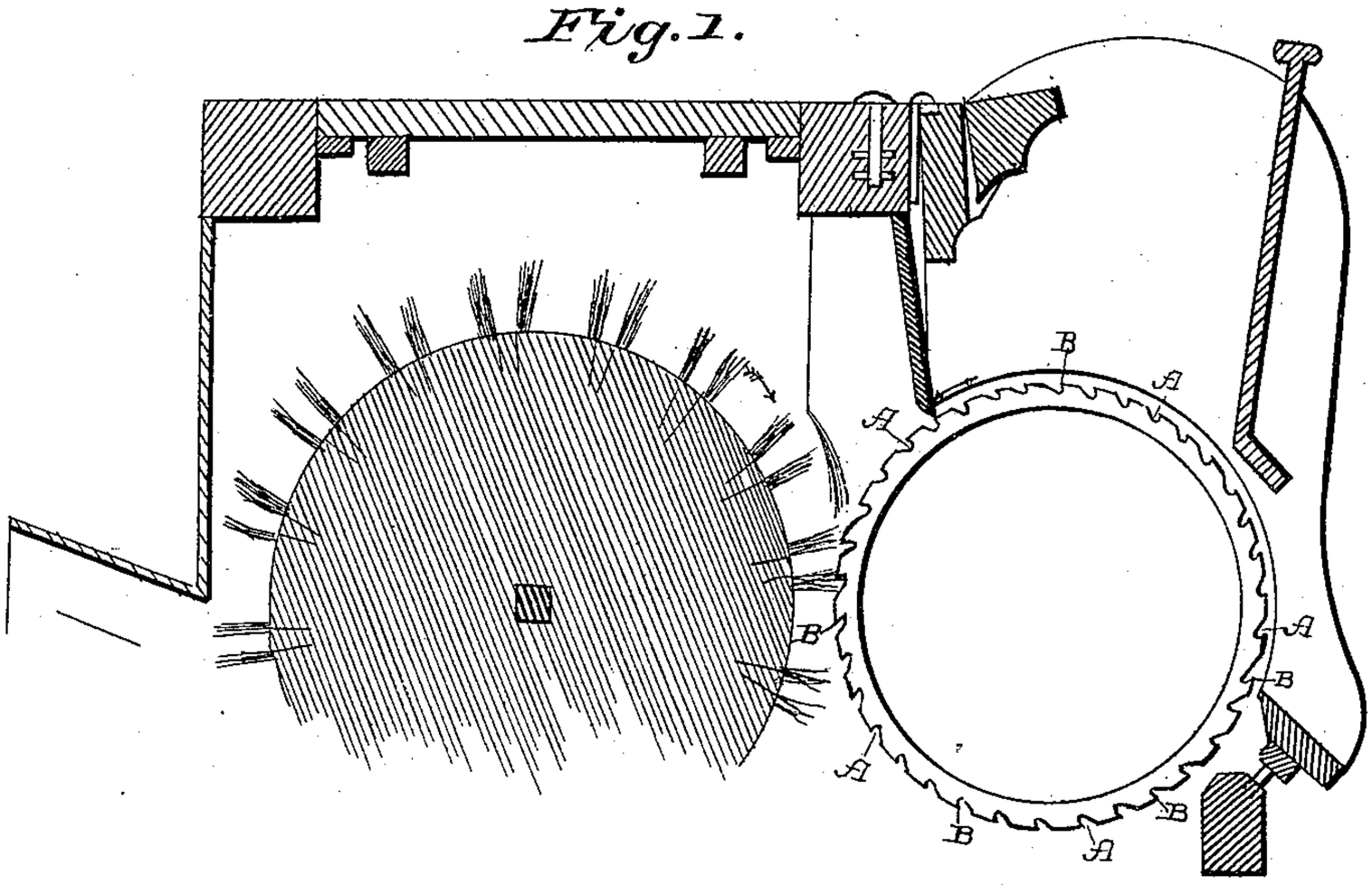


Fig. 2

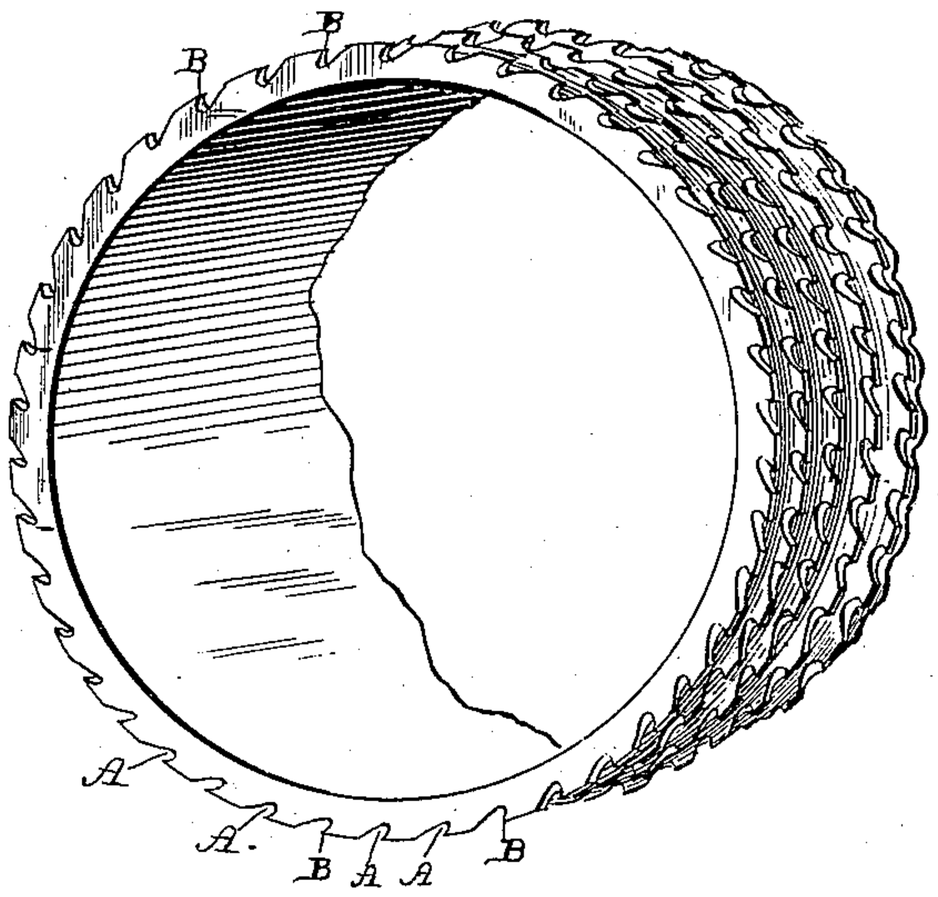
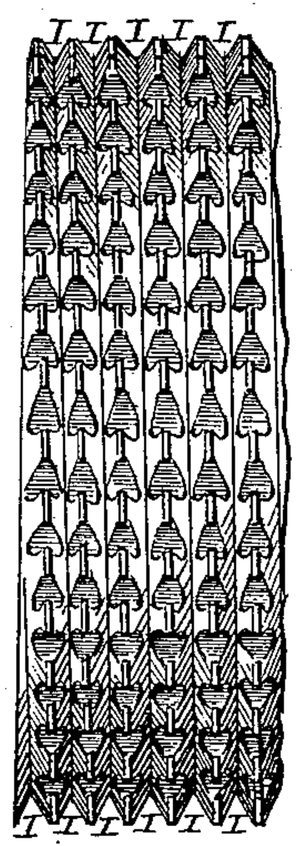


Fig. 3.



WITNESSES:

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COTTON-GIN.

SPECIFICATION forming part of Letters Patent No. 333,387, dated December 29, 1885.

Application filed August 31, 1885. Serial No. 175,794. (No model.)

To all whom it may concern:

Be it known that I, OWEN T. BUGG, of Newark, in the county of Essex and State of New Jersey, have invented certain new and useful Improvements in Cotton-Gins; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable 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.

My invention relates to an improvement in cotton-gins; and it consists in a hollow cylinder for cotton-gins, having its teeth formed as an integral part of its surface, and provided with sharp points and beveled sides and ends, and having grooves running spirally and longitudinally, as will be more fully described hereinafter.

The object of my invention is to provide a hollow cylinder which has the ginning-teeth formed as an integral part of its surface, for the purpose of dispensing with the use of saws and ribs, which have heretofore been employed, to produce a larger number of teeth upon a given surface, to produce a lighter cylinder, and to greatly reduce the cost of the construction of the gin.

Figure 1 is a vertical section of a cotton-gin embodying my invention. Figs. 2 and 3 are enlarged detail views of the cylinder.

No claim is here made to any special construction of the gin itself, for my cylinder may be used in any connection or in any position for the purpose of ginning cotton.

In making my cylinder I take a metallic tube of the desired size and cut any suitable number of longitudinal grooves A, which are cut upon a slant, so that the points of the teeth B will be sufficiently sharp to catch hold of the cotton or any fibrous material which is brought in contact with the cylinder. These grooves A are separated but a very slight distance from each other, and will be given an amount of slant or under-cut in proportion to the size of the teeth desired and the sharpness of points of the teeth that may be preferred. After the cylinder has been grooved longitudinally, as shown, a triangular-shaped groove, I, is cut into and around the cylinder, the slant or bevel of the sides being such that the outer edges of the teeth are quite sharp. The outer edges of the teeth form the greatest diameter of the cylinder, and are in a perfect circle. The points of the teeth are sufficiently sharp to catch and retain any fibrous substance that may come in contact with them when the cylinder is revolving forward; but the rear ends of the teeth are cut away at such an angle that they present no surface whatever upon which the cotton or other material can catch. When the cylinder is revolving forward, it will catch all of the fibrous material which comes in contact with the teeth; but if the cylinder is revolved backward it will not catch the material in any manner. It will be seen that the teeth are cut from the solid surface of the cylinder and form an integral part thereof, in contradistinction to teeth which are either formed in rings by means of saws or in any detached manner, and then put together for the purpose of forming a cylinder. Owing to the extremely small size of the teeth, a very large number are placed in a comparatively small surface, and thus the ginning capacity of the cylinder is greatly increased over that of ordinary saws, or where the teeth are formed separately from the cylinder.

For the purpose of setting the teeth slightly out of line with each other, the groove which extends circumferentially around the cylinder is cut upon a spiral, or at any suitable angle that may be preferred, and thus the teeth are not placed in regular rows, so as to act only upon certain portions of the cotton that is being ginned. The teeth being placed out of line with each other, act equally upon every portion of the cotton, and thus the cotton is ginned equally at all points alike. By forming the teeth directly upon the surface of the cylinder, as here shown, a hollow cylinder is formed, which greatly lessens the weight of the gin over the cylinders formed by saws or formed of solid bodies and to which the teeth are applied. This construction also greatly cheapens the cost of a gin, because the cylinder is nothing more than a tube of the required diameter, which is put in a suitable lathe and finished entirely by machinery, thus requiring no hand-work and no skilled labor in putting a number of parts together. Suitable bearings are placed in each end of this

hollow cylinder, the cylinder is placed in the gin in the manner shown, and when made to revolve every one of the many thousand teeth upon the cylinder begins to operate upon the cotton at all points alike. There being no ribs in the gin and the teeth being formed on every portion of the cylinder alike, it will be seen that a very greatly-increased amount of work can be done in a given time with a cylinder constructed as here shown and described as compared to a cylinder which is formed of a series of saws or of teeth which are separated from each other. The teeth upon the cylinder also being very small, a much less power is required to operate the gin as compared with a cylinder formed of saws or large teeth which catch deeply in the cotton.

Having thus described my invention, I claim—

A hollow cylinder for cotton-gins, having its teeth formed as an integral part of its surface, and provided with sharp points and beveled sides and ends, and having grooves running spirally and longitudinally, substantially as shown.

In testimony whereof I affix my signature in presence of two witnesses.

OWEN T. BUGG.

Witnesses:
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