(Model.)

A. G. JENNINGS.

ROLLER FOR COTTON GINS AND ANALOGOUS MACHINES.

No. 245,072. Patented Aug. 2, 1881.

Fig. 3

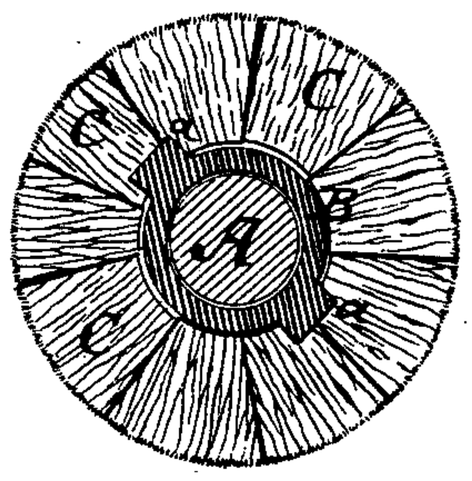


Fig. 2

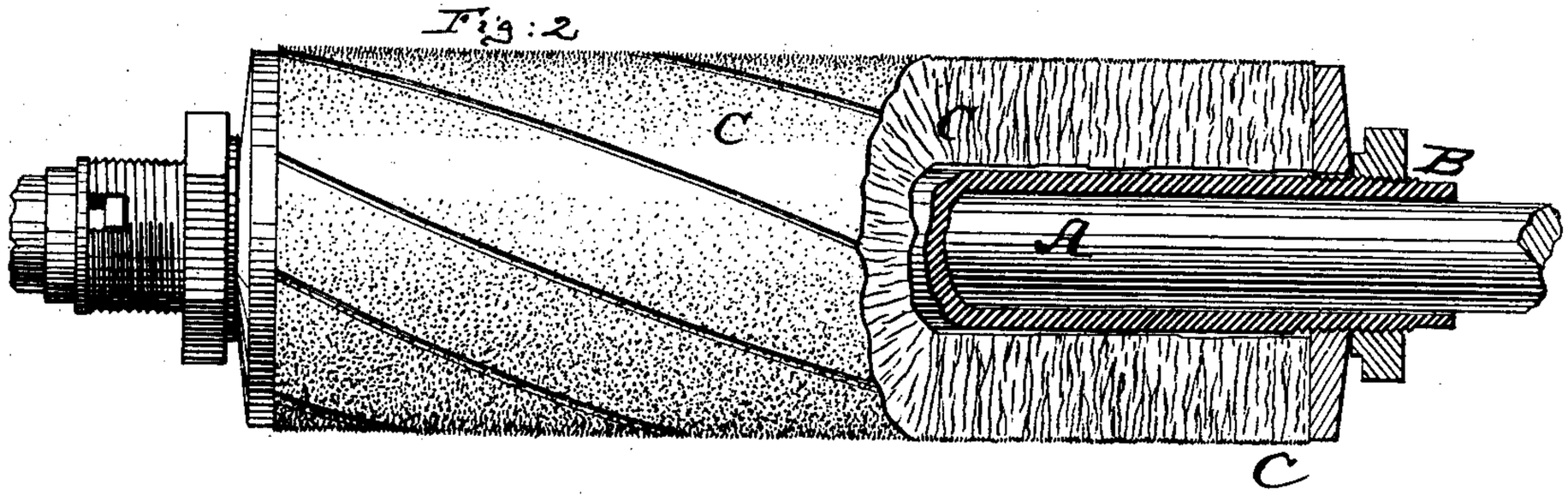
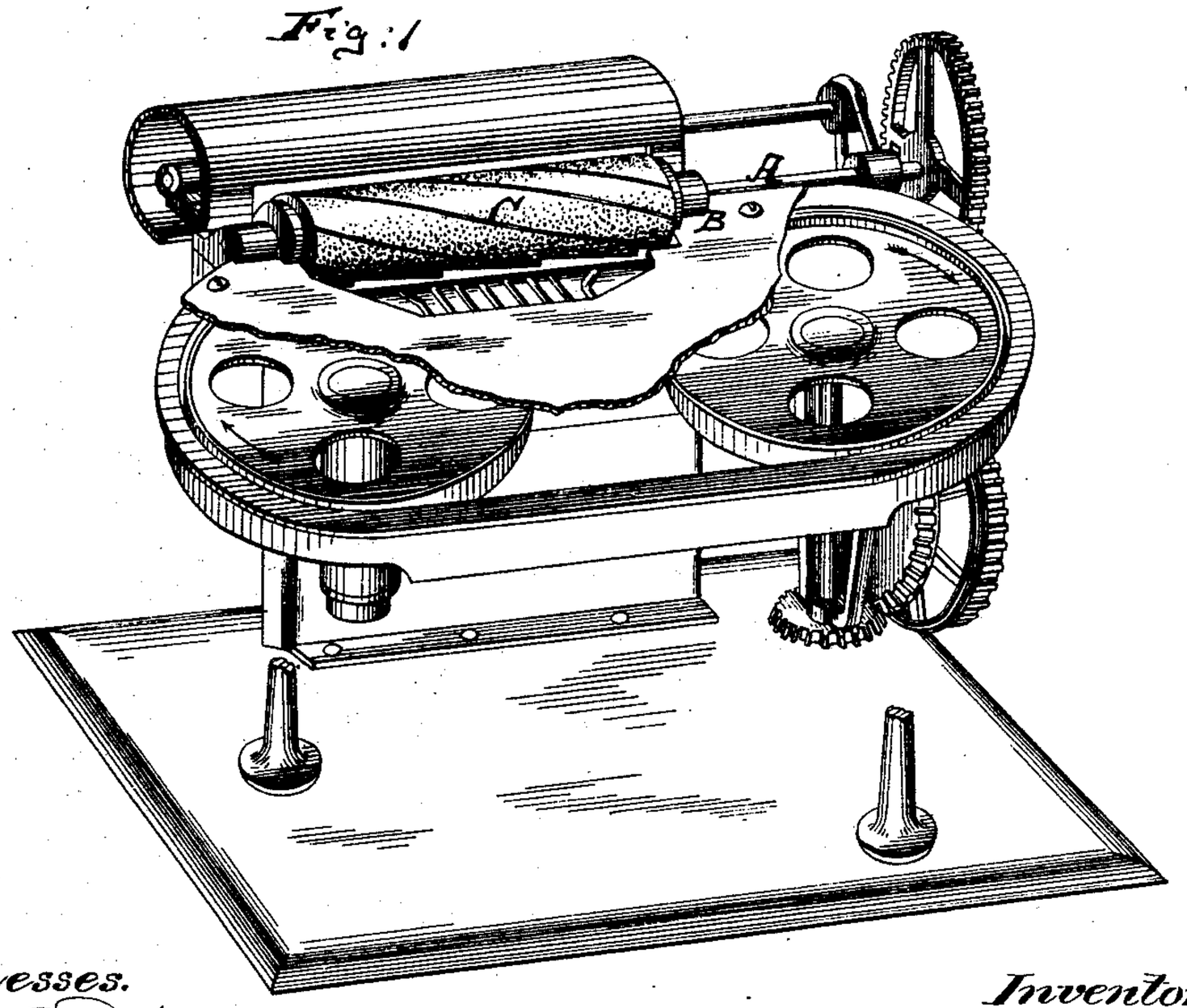


Fig. 1



Witnesses.
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UNITED STATES PATENT OFFICE.

ABRAHAM G. JENNINGS, OF BROOKLYN, NEW YORK.

ROLLER FOR COTTON-GINS AND ANALOGOUS MACHINES.

SPECIFICATION forming part of Letters Patent No. 245,072, dated August 2, 1881.

Application filed January 19, 1881. (Model.)

To all whom it may concern:

Be it known that I, ABRAHAM G. JENNINGS, of Brooklyn, in the county of Kings and State of New York, have invented a new and useful Improvement in the Rollers for Cotton-Gins and Analogous Machines, of which the following is a specification.

Figure 1 is a perspective view of a cotton-gin containing my invention. Fig. 2 is an enlarged side view, partly in section, of the roller; Fig. 3, a cross-section of the same.

This invention relates to an improvement in the construction of the roller which is used in cotton-gins of the kind illustrated in Letters Patent No. 185,452, and in other cotton-gins and analogous machines employing such rollers for conducting the cotton to be liberated of the seed or otherwise conducting fibrous matter.

These rollers heretofore have generally been made of wood or metal covered with leather or rubber, or both, presenting a rough surface, to permit the convenient seizing and pulling away of the fiber of the cotton from the seed by a metal blade brought close to the roller, which separates the seeds from the lint. In some cases rollers constructed of disks of wood have been proposed. If this revolving roller becomes smooth, as it invariably does, after greater or less length of time, the lint or fiber of the cotton will no longer adhere to it sufficiently to be drawn away from the seed, and it then fails to do its work and renders the gin useless.

It is a cause of common complaint that the rollers of cotton-gins soon wear smooth, and this is likewise the cause that roller cotton-gins have not as yet been introduced as freely as they would but for this defect. The surface of such roller has to be roughened up from time to time, sprinkled with sand or pounded pumice-stone, and soon must be entirely renewed.

My improvement consists in constructing the roller-sections of particularly fibrous wood, placed so that the fibers of the wood will be radial to the roller and present their ends at their outer circumference, thus producing a self-renewing brushy surface. I much prefer for this purpose the wood of the palmetto tree, because it has a coarse fiber with the interstices filled with a chalky substance, which will wear away sooner than the fiber itself. Therefore, in use the exposed surface of the roller will be apt to remain rough, and always in proper condition for use.

Of course I do not limit myself to the use of the palmetto-wood, which, as stated, I much prefer; but the palm, sugar-cane, or cocoanut trees or other fibrous woods or vegetables of these genera or species having like open structure will frequently be found of great advantage. The most favorable construction is that indicated in Fig. 3, where the roller is shown to be constructed of an inner shaft, A, carrying a suitable sleeve, B, that is embraced by the segmental pieces C C of the palmetto-wood. These segmental pieces, as already stated, are so cut that the fiber of the palmetto-wood will extend radially through them and have its ends exposed at the outer circumference of the roller. Suitable feathers, *a*, may be formed on the shaft or on the sleeve, to prevent the segments of wood from revolving loose on the shaft. The bark of the palmetto-tree will answer almost as well as the wood proper itself, or I may use alternate segmental sections of wood and bark, taking care always to have the fiber of both extend radially to the roller. Leather may be interlaid with these sections of palmetto-wood, or ordinary wood may be interlaid with the sections, according to the grade of material to be treated in the gin or other machine. The sections of the palmetto-wood are suitably glued or otherwise secured together and firmly attached to the shaft, so as to revolve together with the same, or to the sleeve that revolves on the shaft.

The shaft may be made of polygonal form, if desired, to more readily facilitate the application of the segmental pieces of the palmetto-wood.

The important part of the invention, and that which makes the roller effective, is that the brushy ends of the fibers always present themselves at the surface of the roller, and it is these brushy ends that give efficacy to the roller, in that they impart to the roller a continuously brushy surface, which is most admirably adapted to the seizing of the cotton lint, and to its retention when the lint is to be pulled away from the seed.

The circumference of the roller may be quite cylindrical, or small grooves may be cut in it an inch, more or less, apart. Such grooves are indicated in Fig. 2. They may run spirally around the roller or be of other suitable form.

The roller will never polish or wear smooth like the material now in use, will be exceedingly durable, and can be attached to all roller cotton-gins of usual or suitable construction, such as the gin known as the "McCarthy gin," the "Osgood gin," and other roller cotton-gins, and also to other machinery for carrying fibers, such as napping-machines and the like.

I am aware that polished hard-wood rollers, constructed of segments of hard wood around a shaft, have already been described in English Patent No. 310 of 1854. Such rollers I distinctly disclaim, and also all other smooth-surface rollers, as my invention has reference only to rollers that have a rough surface, which in use, instead of becoming polished and smooth, will always remain brushy and adherent to fibrous substances.

I claim—

The rough-surface roller constructed of segmental sections C C of palmetto-wood, said sections being arranged around a central shaft and so formed from the wood that the fibers traverse them radially, thereby exposing the brushy ends of the sections at the circumference of the roller, both when the roller is used and after it has been used, substantially as described.

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