2. Sheets, Sheet. 1.

J. M. Clough,

Cotton Gin.

No. 103981. Patented June 7. 1870.

Fig. 1.

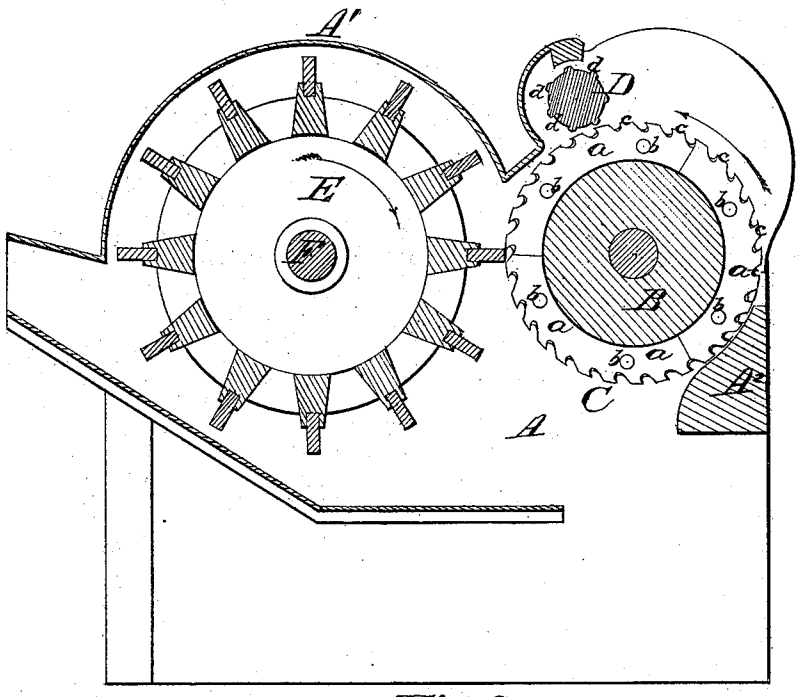
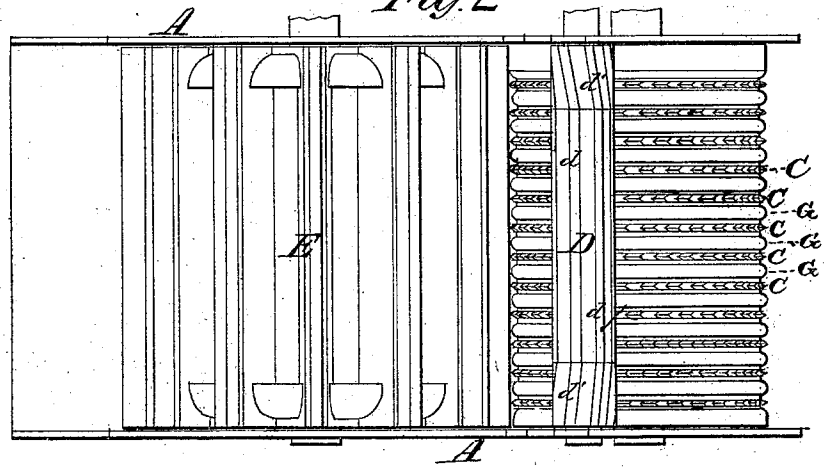


Fig. 2



Witnesses.
R. V. Campbell.
J. N. Campbell.

Inventor
J. M. Clough
by
Mason, Fenwick & Lawrence

2 Sheets, Sheet 2.

J. M. Clough,

Cotton Gin.

No. 103,981. Patented June 7, 1870.

Fig. 3

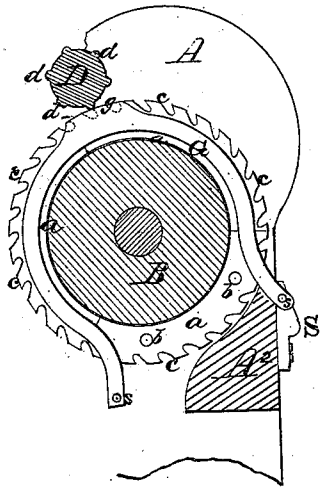


Fig. 4

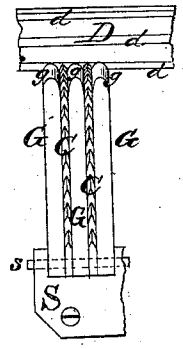


Fig. 5

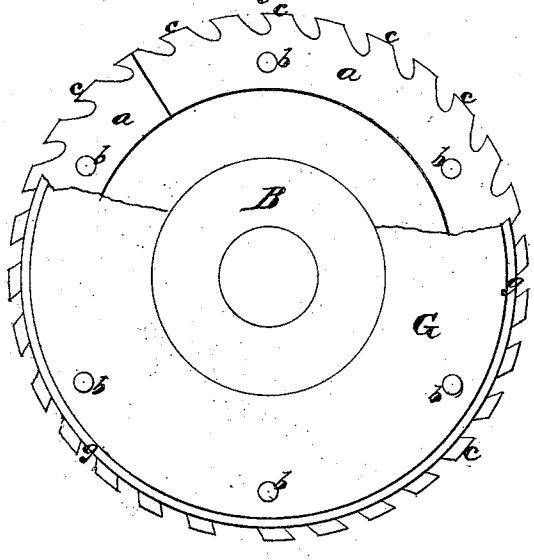


Fig. 6

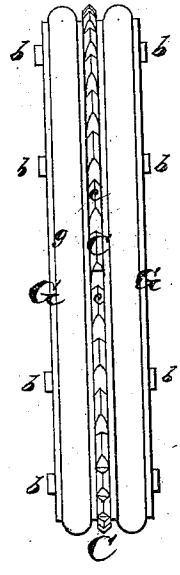


Fig. 7

Witnesses.
P. Campbell
J. N. Campbell

Inventor
J. M. Clough
by Mason, Fenwick & Lawrence

United States Patent Office.

JEFFERSON M. CLOUGH, OF ILION, NEW YORK.

Letters Patent No. 103,981, *dated June* 7, 1870.

IMPROVEMENT IN COTTON-GINS.

The Schedule referred to in these Letters Patent and making part of the same

To all whom it may concern:

Be it known that I, JEFFERSON M. CLOUGH, of Ilion, in the county of Herkimer and State of New York, have invented a new and improved Gin for Cleaning Cotton; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawing making part of this specification, in which—

Figure 1, plate 1, is a longitudinal section through the machine, taken in a vertical plane.

Figure 2, plate 1, is a top view of fig. 1, with the covers removed.

Figure 3, plate 2, is a cross-section through the toothed drum and stripper, showing the mode of using stationary ribs.

Figure 4, plate 2, is a front view of a portion of fig. 3.

Figures 5, 6, and 7, plate 2, are enlarged views in detail, showing the mode of constructing the toothed cylinder.

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

This invention relates to improvements on that kind of cotton-gins known as the roller-gins, wherein slotted breasts are not employed, but, in lieu thereof, a revolving stripper is combined with the saw-cylinder or toothed drum.

My object is to gin long or short staples with very much less injury to the fibers than hitherto, by constructing the toothed drum with interspacing ribs between its saws in such manner that the cotton-fibers are not liable to become matted between the teeth, nor to clog up the teeth, but are loosely held, so as to be readily removed by the revolving brushes, as will be hereinafter explained.

The toothed drum B consists of a central core and a number of toothed rings or segments, between which spacing-ribs are applied.

The stripper D is a rolling cylindrical bar, which is ribbed on its surface, the ribs extending in a direction with its length, and terminating at both ends in oblique ribs, as shown in fig. 2.

The brush-drum E may be made in the usual well-known manner, of slats or bars, fitted into circular heads, and provided with brushes, or their equivalents.

That part of the machine which I have improved is the toothed drum. This drum has its circumference, composed of circles of teeth alternating with ribs *g*, which latter are perforated, made of the form shown clearly in fig. 6.

The teeth *c* are formed on the peripheries of segments *a*, by making the curved throats *c'*, at regular intervals apart, into said segments, and rounding laterally the heel of each tooth.

By thus divesting the teeth of sharp or square angles, they will not be liable to nap or wad up the fibers of cotton. The teeth are also beveled on opposite sides, as shown in the drawing.

To enable others skilled in the art to understand my invention, I will describe its construction and operation.

In the accompanying drawing—

A represents the frame of the machine, within which are arranged a toothed drum, B, a revolving stripper, D, and a revolving brush-drum, E. Other parts necessary in the operation of the machine may be constructed in the usual well-known manner.

I prefer to make each circle of teeth on segments *a a a*, as shown in fig. 1, but this is not essential, as full rings may be employed on which to make the teeth.

These toothed segments or rings, as the case may be, are perforated and secured in place between the ribbed circles G by means of studs which are formed on the latter, and which enter said perforations in the toothed segments or rings. This makes a cheap and durable fastening for the segments or full circles of teeth.

The ribbed surfaces *g*, which alternate with the circles of teeth, are formed on the peripheries of circular plates G, as shown in figs. 1, 2, 5, and 6, or upon the surfaces of stationary segments G, as shown in figs. 3 and 4. In the former instance the ribbed plates turn with the drum, but in the latter instance the ribbed segments are secured to the frame A, as shown in figs. 3 and 4, and are, of course, stationary.

The peripheries of the ribs *g*, or those points furthest from the axis of the drum B, are nearly, if not quite, of the same diameter as the circles of teeth, and are preferably rounded or beaded, as shown in figs. 2 and 6.

These ribbed surfaces between the teeth prevent the seeds from passing beneath the revolving stripper D, and also prevent the cotton from becoming matted among more than one circle of teeth, without passing over the surfaces between them. These surfaces *g* also assist the brush-drum E in keeping the teeth clean.

The cylinder with circular ribbed surfaces, shown in figs. 1, 2, 5, and 6, is especially adapted for ginning the black-seed or Sea Island cotton, while the cylinder with stationary ribbed surfaces between its teeth is best adapted for the green-seed or short-staple cotton.

The stationary ribbed segments shown in figs. 3 and 4 are secured fast at *s'* to the frame A, and at *s* to a fixed plate, S.

The ribbed or highest points *g* of these segments G are directly beneath the stripper D, where they are

required to prevent the passage beneath the stripper of seeds, and also to prevent matting of the fibers into the spaces between the teeth.

By my invention I am enabled to gin long or short-staple cotton with very much less injury to the fibers than is the case with the "saw-gin." The seeds are kept under the stripper as long as there remain fibers on them for the teeth to get hold of. The teeth are not liable to injury from twigs of cotton, brush, stems, and other foreign substances which frequently get into the gins, as the teeth are in a great measure protected by the interposed ribbed surfaces.

Having described my invention,

What I claim as new, and desire to secure by Letters Patent, is—

1. The combination of ribbed stripper, D, a brush-drum, E, and a toothed drum, B, when the latter has ribbed surfaces between its teeth, substantially as described.

2. Constructing and arranging the ribs or plates between which the toothed plates of the drum revolve, so that they present a bearing or support beyond or above the base of the teeth of said plates, for the cotton to rest upon while being operated upon, all substantially in the manner described.

JEFFERSON M. CLOUGH.

Witnesses:

D. LEWIS,

F C. SHEPERD.