

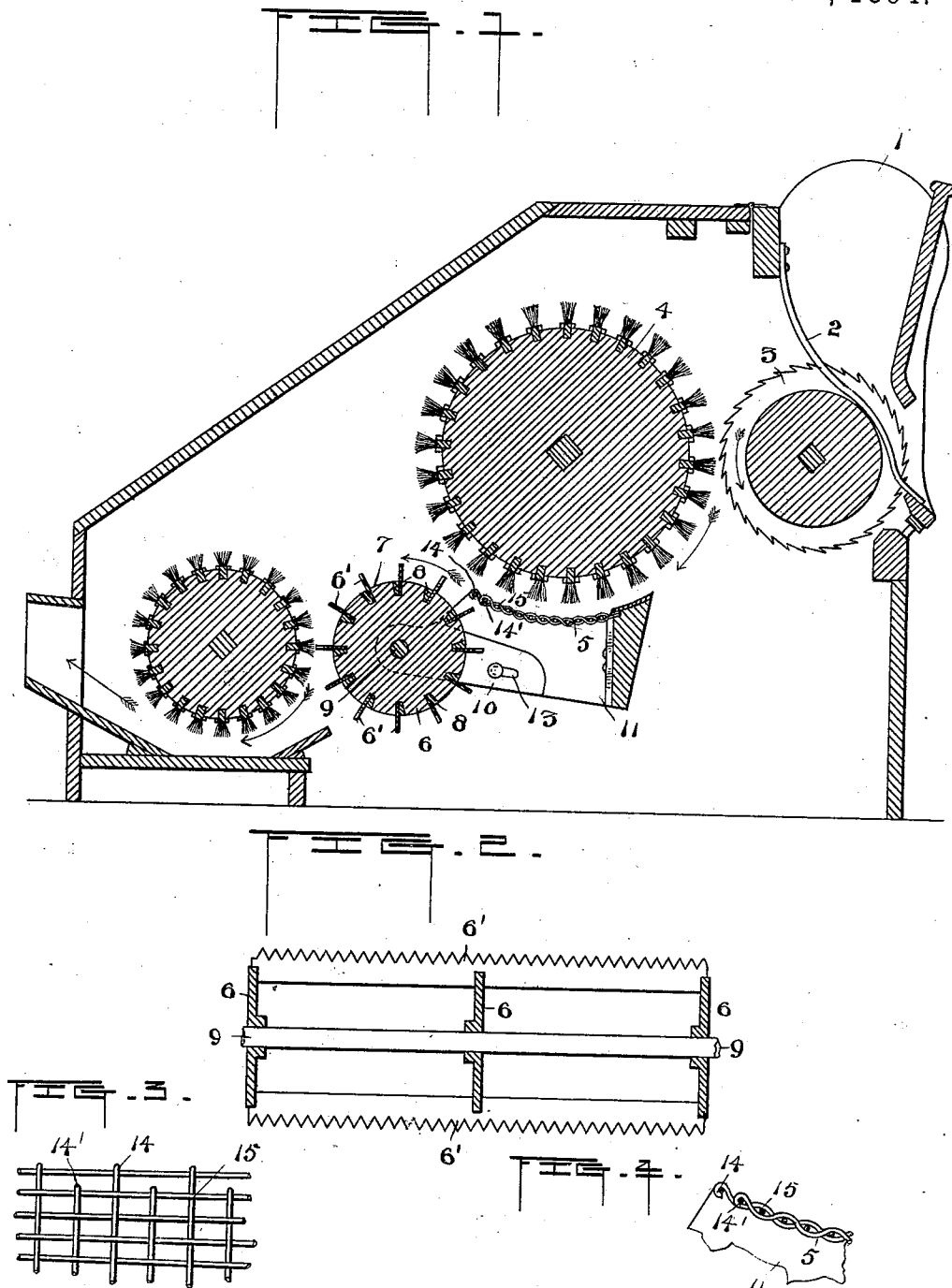
No Model.)

W. P. KOPFLER.

COMBINED BEATER AND CARDER FOR COTTON GINS.

No. 512,445.

Patented Jan. 9, 1894.



Witnesses

Arch. Mr. Cattin
J. M. Coppenhaver.

Inventor

William P. Kopfler
by

Reuf. R. Cardin Attorney

UNITED STATES PATENT OFFICE.

WILLIAM P. KOPFLER, OF CROWLEY, LOUISIANA.

COMBINED BEATER AND CARDER FOR COTTON-GINS.

SPECIFICATION forming part of Letters Patent No. 512,445, dated January 9, 1894.

Application filed May 2, 1893. Serial No. 472,667. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM P. KOPFLER, a resident of Crowley, in the parish of Arcadia and State of Louisiana, have invented certain new and useful Improvements in a Combined Beater and Carder for 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 the same.

The invention relates to means for beating, cleaning and opening lint cotton preparatory to forming it into a bat or otherwise treating it and has for its object to thoroughly remove dust, motes, short fiber, woody particles and other objectionable matter from the cotton staple, and also to simultaneously comb or card said staple preparatory to the subsequent treatment; and it consists in the construction hereinafter described and particularly pointed out.

In the accompanying drawings Figure 1 is a longitudinal section of a cotton gin with the improvement attached. Fig. 2 is a longitudinal section of the combing or cleaning cylinder. Fig. 3 is a detail plan and Fig. 4 a section of the same showing the construction of wire cloth screen.

Numeral 1 denotes a hopper, 2 a grid, 3 a gin saw and 4 a saw cleaning cylinder-brush. These may be of any approved form. Beneath the brush and near the same is situated a curved bed or table 5 made of woven wire of large gage said bed being curved to correspond approximately with the curvature of the brush. The cotton lint freed from the seed is brushed from the saw teeth upon this wire fabric and moved over its uneven surface with the effect to beat out dirt and fine particles which then fall or are drawn through the open meshes of the wire. This wire is preferably of large size and the fabric presents a moderately uneven surface adapted under the operation of the brush to cause the various portions of the cotton to undulate or alternately rise and fall as they pass over the table and this action is very favorable to the liberation of foreign matters from the staple.

7 denotes a combing cylinder composed of a series of disks 6 in which are removably secured blades provided with teeth 6'. Removable wedges for holding the blades in place

are denoted by 8 though other devices may be employed for the purpose.

9 denotes the cylinder shaft which may be driven by any convenient means. This shaft has bearings in plates 10 which are bolted to the dust box 11 in the top of which is secured the wire screen above mentioned.

13 indicate slots in the plates 10 which provide for the adjustment of the combing cylinder with reference to the box and screen. The cylinder 7 rotates in such direction that its teeth will engage the cotton on the under side thereof as it is passed off the screen and will comb and open it. This action both frees the cotton from refuse and promotes parallelism in its staple.

It will be noted that the screen presents a surface free from any projections adapted to catch the fiber and that it has at the same time a sufficient variation of level co-operating with the opposite direction of the wires to stir the under side of the cotton and facilitate the escape of refuse therefrom. A large gage wire preferably not less than No. 14 to No. 8 or larger is suitable. The edge of the screen is covered except next to the combing cylinder and thence the ends of the wires next to the cylinder are turned under as shown. This bending of the wire may be applied to all, each alternate one being bent around the last transverse wire as at 14 and the others about the next transverse wire as at 14'. Part of the wires 15 however may if preferred be extended to the last transverse wire and may terminate immediately under it and so as to be covered thereby. By these means all projecting wire ends are avoided and the extreme transverse wires are held in place. For this latter purpose it is preferred to bend the lengthwise wires about alternate transverse edge wires as shown and first above described. By this means the next to the last transverse wire is more securely held than otherwise.

The screen should have a large mesh and preferably of a size about one eighth of an inch or more by one third of an inch or more.

As the combing cylinder opens the cotton beneath to let out refuse it is important that it have a skeleton form substantially as shown to provide for the free escape of such matter.

16 denotes a brush adapted to take cotton from the combing teeth and deliver it to a con-

duit or to rollers or other mechanism as desired.

I am aware that mote plates of perforated metal have been used and that such plates
5 have been curved to correspond to the path of a brush adapted to move cotton over the plates.

My improvement consists in the use of a coarse wire fabric entirely destitute of sharp edges and having an uneven surface caused
10 by the bends of the wires which have an effect to open the cotton not secured by a plate though perforated.

I am also aware that a cylinder has been provided with lengthwise toothed blades arranged radially upon its outer surface, said
15 cylinder being perforated and combined with air moving devices adapted to draw air through the cylinder and out of the perforations.

My improvement consists in securing several disks upon a shaft and fastening in the edge of these disks toothed blades the construction and combination being such that
20 refuse particles can fall freely between the blades at all points. Preferably the mesh is made the longest in a direction transverse to the motion of the brush.

Having thus fully described my invention, what I claim is—

1. In a cotton opener and cleaner, a combing cylinder consisting of disks secured on a shaft, serrated blades secured in said disks and adapted for the free passage of refuse, in combination with devices for delivering cotton to the upper part of said combing cylinder, substantially as set forth. 30 35

2. The combination of the revolving brush, the curved screen of wire fabric the brush being adapted to move cotton over the screen and the open cylinder provided with combing teeth and adapted to revolve under the edge of the screen and draw the cotton from the same, substantially as set forth. 40

3. In a cotton opener and cleaner, the combination of a screen fastened to the top of the dust box, said box, a combing device adapted to draw cotton from the screen and supported in bearings adjustable to and from the delivering end of the screen, substantially as set forth. 45 50

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

WILLIAM P. KOPFLER.

Witnesses:

C. F. MATTHEWS,
J. C. KING.