

(No Model.)

J. B. CROWDER.  
COTTON GIN.

No. 547,336.

Patented Oct. 1, 1895.

*Fig. 1.*

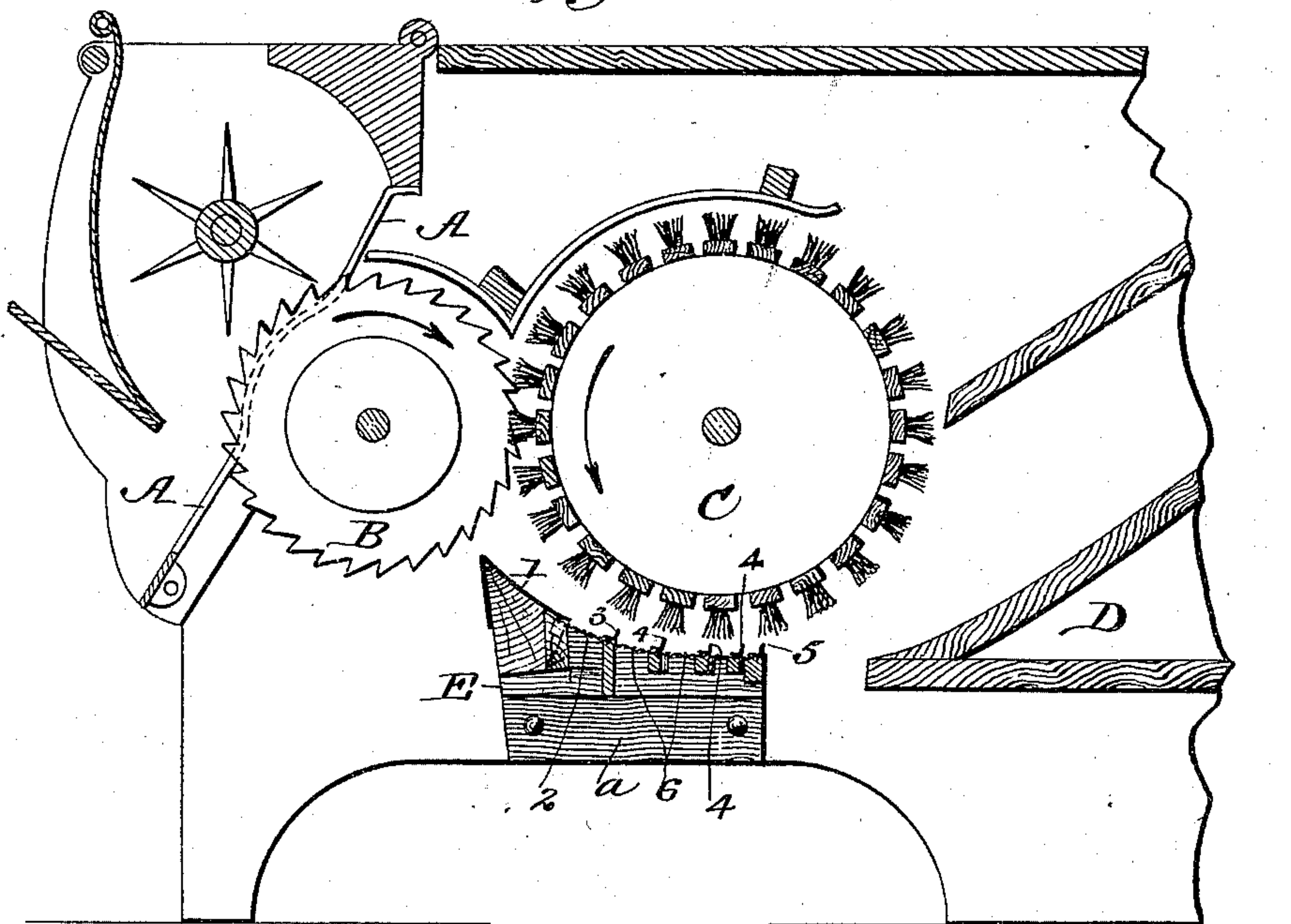
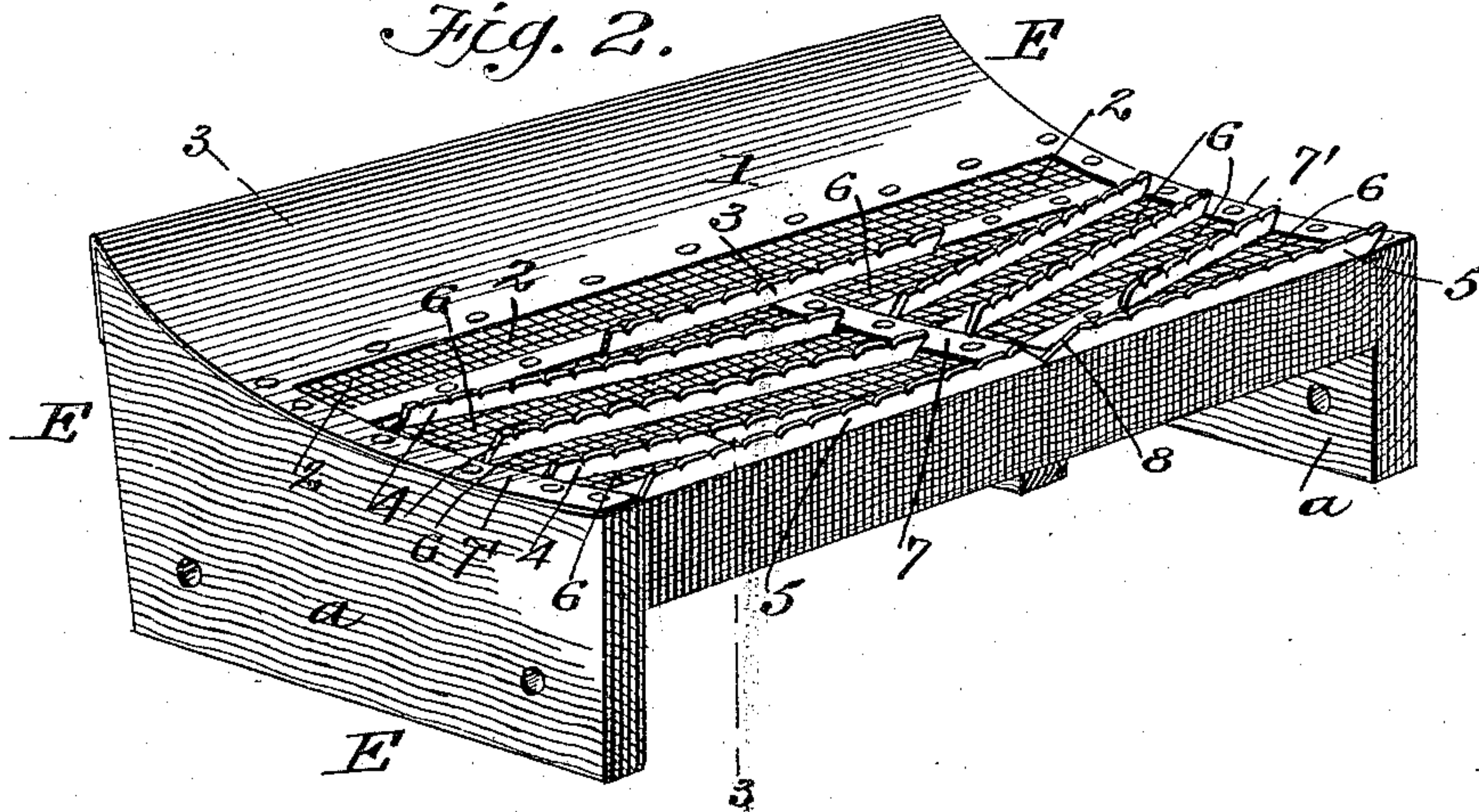
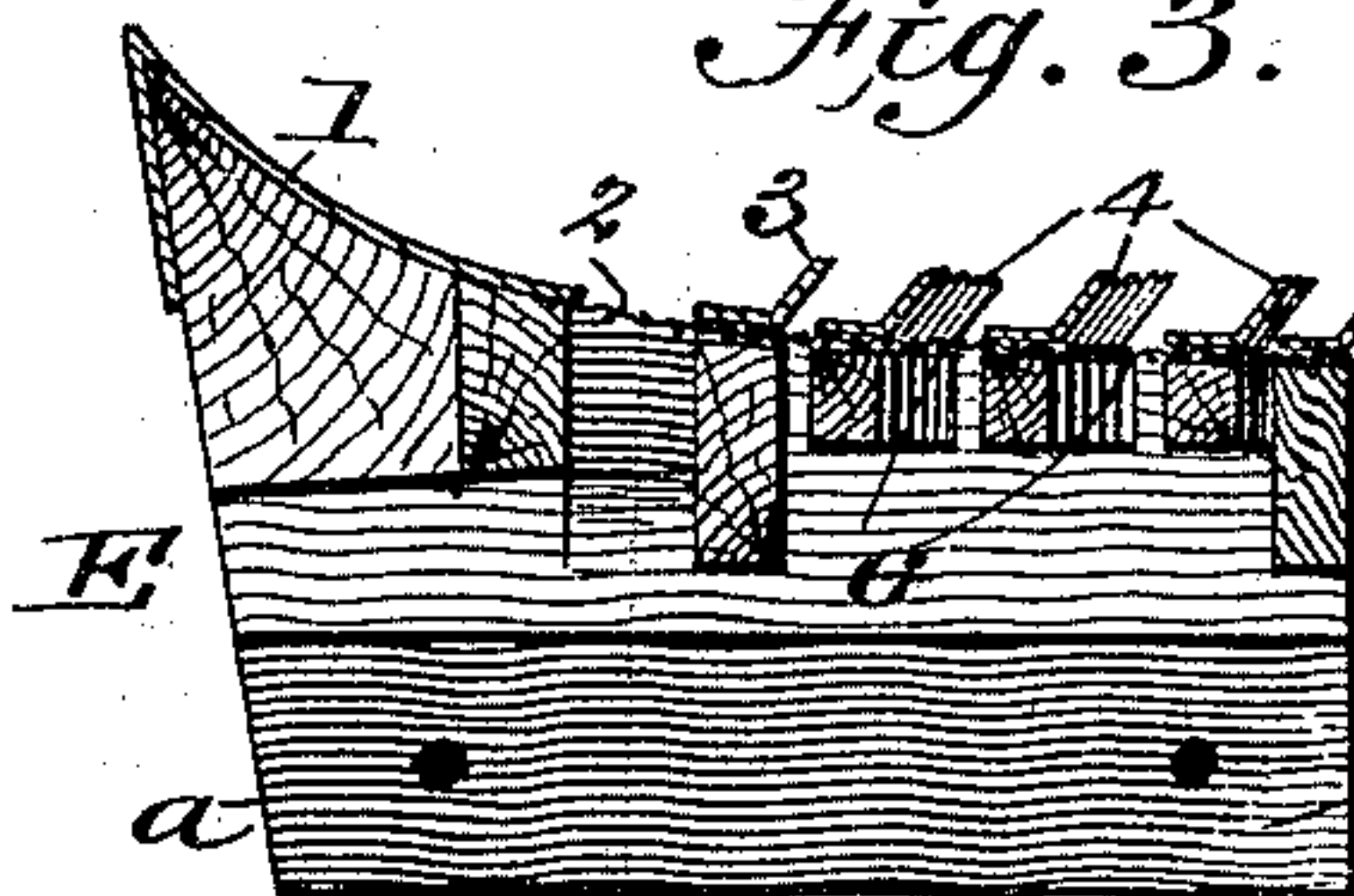


Fig. 2.



*Fig. 3.*



WITNESSES:

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# UNITED STATES PATENT OFFICE.

JOHN B. CROWDER, OF TALUCAH, ALABAMA.

## COTTON-GIN.

SPECIFICATION forming part of Letters Patent No. 547,336, dated October 1, 1895.

Application filed July 17, 1895. Serial No. 556,284. (No model.)

*To all whom it may concern:*

Be it known that I, JOHN B. CROWDER, residing at Talucah, in the county of Morgan and State of Alabama, have invented certain  
5 new and useful Improvements in Cotton-Gins, of which the following is a specification.

My invention is a device or apparatus adapted to be applied to an ordinary gin for removing dust, dirt, chaff, or other form of trash from  
10 cotton as it comes from the saw, and especially for breaking up and destroying bunches, curls, or condensed portions of the cotton, whereby its quality is greatly improved. The attachment is in the nature of a narrow ribbed  
15 or flanged concave or bed arranged beneath the gin-brush, and having open or reticulated portions adjacent to the ribs for the purpose of permitting a downward air-draft and facilitating the escape of trash of any kind that  
20 may be freed from the cotton.

The novel features of construction, arrangement, and combination of parts are as hereinafter specified.

In the accompanying drawings, Figure 1 is  
25 a vertical longitudinal section of a saw-gin provided with my invention. Fig. 2 is a perspective view of the device constituting my improved attachment. Fig. 3 is a cross-section on line 3 3 of Fig. 2.

30 The grid A, saws B, brush C, and mote-board D are shown arranged in the usual way.

My improved attachment E is arranged horizontally beneath the brush, with its front end contiguous to and beneath the saws, as  
35 shown. The attachment is, as to its main feature, a surface or bed having a series of transversely-inclined or oblique ribs or flanges with intervening spaces covered with woven wire or other reticulated material. The body of  
40 the attachment is a light but strong wooden frame, composed of parallel side pieces or boards *a* and transverse pieces or bars which rigidly connect them. The attachment is secured in place by screw-bolts passing through  
45 the sides of the attachment and the sides of the gin-box, as shown. The front and upwardly-curved portion 1 of the bed or surface is covered with tin or other smooth sheet metal. In rear of such part 1 is a reticulated  
50 portion 2, formed of somewhat coarsely-woven wire. The remaining rear portion of the sur-

face is composed of alternating toothed ribs or flanges 3 4 5 and reticulated portion 6—that is to say, a short rib or flange 3 is arranged in rear of the first reticulated portion 55 2, and a long rib or flange 5 is arranged at the rear extremity of the bed, said ribs 3 5 being parallel to each other. Between the latter are arranged three opposite sets of ribs or flanges 4, which are oblique to the line of draft and 60 the corresponding intervening reticulated portions. Thus the ribs 4 of one set are placed opposite to and at obtuse angle to those (4) of the other set. The two sets of oblique ribs 4 are separated from each other by a narrow 65 central space 7, and the terminal rib or flange 5 has a notch 8, for a purpose hereinafter stated. There is also a clear space 7' along the sides of the attachment adjacent to the outer ends of the ribs or flanges. 70 The spaces 7 and 7' are provided with a smooth surface by means of strips of zinc nailed in place, as shown. The several ribs or flanges are each formed of a narrow strip of sheet metal by bending the same transversely at a slightly obtuse angle. The flat 75 base of each rib is secured by nails or screws to an underlying bar forming part of the wooden frame of the attachment. The upper edges of the ribs or flanges are provided with 80 small serrations or teeth to enable them to take hold of the cotton and cause a momentary drag of the same as it passes over them, whereby the fibers are stretched and separated. 85

The operation of the attachment is as follows: The cotton being removed from the saws B, the brush, which revolves ordinarily at the rate of about eight hundred times a minute, is swept rapidly over the concave surface or bed. 90 In its first movement it is thrown upon the upward curved and smooth portion and then swept down and over the open reticulated portion, which permits a downward draft or current of air through it, and such draft takes 95 along with it a considerable portion of dust, specks, chaff, and other trash or fine foreign material ordinarily mingled with the cotton. Passing next successively over the ribs or flanges 3 4 5 and the intervening reticulated 100 spaces 6, the cotton is subjected to two mechanical actions—namely, first, by reason of



the obliquity or inclination of the ribs or flanges 4, the cotton tends somewhat to draw away from the sides and toward the center. Secondly, the teeth or serrations of the ribs catch and hold the cotton momentarily and thus exert a drag which draws out and stretches the fibers, and thus breaks up or destroys bunches, curls, tangles, or other condensed portions of the mass. Thus by the movement of the cotton toward the center and the drawing or dragging effect of the teeth the fibers are not only stretched longitudinally, but are drawn laterally at the same time, so that the tangled or condensed portions are opened and separated as they could not be if the lines of force or tension ran in parallel instead of convergent lines. Lastly, this stretching and opening or separation of the fibers obviously facilitates the escape of dust, dirt, chaff, &c., which is forced down through the reticulated portions 6 by the downward air-draft. The cotton being drawn both ways, from the outside to the center, tends to "bunch" somewhat at the latter place, and hence the clear space 7 is necessary to allow proper forward movement of the cotton. The trash is of course not completely removed in this operation; but it is obvious the cotton leaves the attachment in a condition that facilitates such result in the treatment to which it is subsequently subjected.

The final effect of the operation of my attachment is that the cotton is greatly improved in quality, since it is reduced to a much greater degree of homogeneity of its fibrous mass and also freed from a large portion of intermingled foreign matter.

In further explanation of the operation of the invention I will state that a portion of the dust and dirt always contained in picked cotton will accumulate in the angles of the ribs or flanges, and this, if not removed, would eventually constitute a serious obstacle to the desired result. The inclination of the ribs or flanges to the line of draft, however, offsets this tendency, since the dust and dirt tend to move along the ribs until it passes into the central space 7, wherein it is swept along and out through the notch in rib 5, where it drops down and escapes from the gin. Further dirt tends to accumulate at the sides of the attachment at the outer ends of the ribs, and

hence I have provided open spaces 7' at that point.

It will be seen that the short rib 3 is so located as to comb and stretch the cotton-fibers that pass along or over the central space 7. The other space 7' being outside the saws B, no cotton passes through or over them. It will be further noted that the obtuse angle or slight backward inclination of the ribs enables the brush C to carry the cotton over them with the desired ease. It also enables the brush to be set nearer the ribs than would be otherwise practicable.

What I claim is—

1. A cotton gin attachment for the purpose specified, which consists of a surface or bed having a series of ribs or flanges which are arranged in sets opposite each other and inclined to each other at a slight angle to the line of draft the two sets being separated by a narrow space, substantially as shown and described.

2. A cotton gin attachment for the purpose specified, which consists of a surface or bed having two sets of ribs which are arranged oppositely and inclined backward and also lengthwise to the line of draft, and also provided with serrations, substantially as shown and described.

3. A cotton gin attachment consisting of a surface or bed having two sets of ribs or flanges which are arranged opposite each other, the said sets being separated by a narrow space, and a rib or flange 3 arranged in front of such space, as shown and described.

4. A cotton gin attachment for the purpose specified, consisting of a surface or bed having two sets of toothed ribs arranged opposite each other but separated by a narrow central space having an imperforate bottom, a series of open reticulated spaces intervening ribs of each set, a toothed rib 3 arranged in front of the space between the sets of ribs and a second rib 5 arranged at the rear end of such space and provided with a notch or slot to permit escape of dust or dirt, as shown and described.

JOHN B. CROWDER.

Witnesses:

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