(No Model.)

O. M. STONE & G. A. PLATT.

COTTON GIN ATTACHMENT.

No. 343,260. Patented June 8, 1886.

Fig. 1.

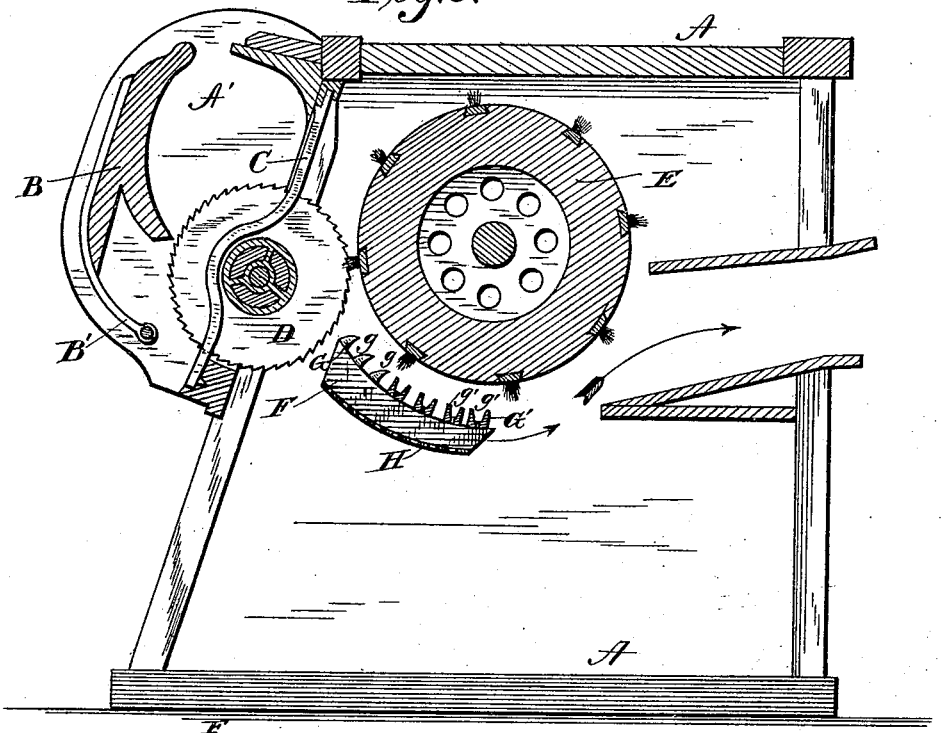


Fig. 2.

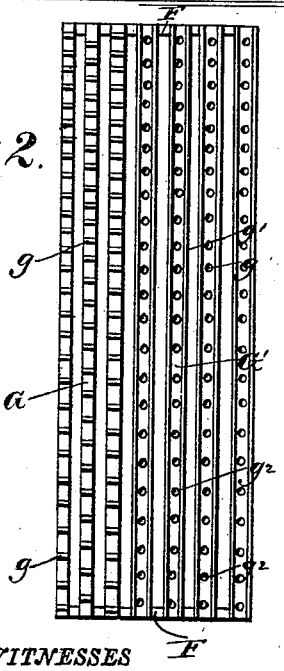
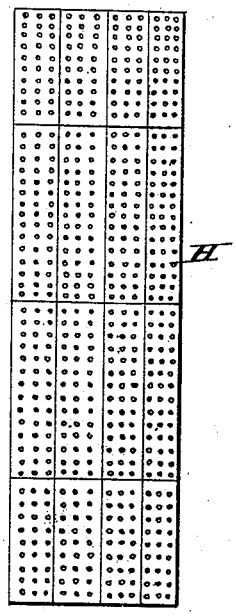


Fig. 3.



WITNESSES

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UNITED STATES PATENT OFFICE.

OSBORN M. STONE AND GEORGE A. PLATT, OF AUGUSTA, GEORGIA.

COTTON-GIN ATTACHMENT.

SPECIFICATION forming part of Letters Patent No. 343,260, dated June 8, 1886.

Application filed October 17, 1885. Serial No. 180,193. (No model.)

To all whom it may concern:

Be it known that we, OSBORN M. STONE and GEORGE A. PLATT, both of Augusta, county of Richmond, and State of Georgia, have invented a new and useful Improvement in Cotton-Gin Attachments, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, making part of this specification.

Our invention relates to an improvement in attachments to cotton-gins of ordinary construction, and more particularly to a separator or concave employed in connection with the brush-cylinder of the gin.

Our invention consists in a novel construction of the separator-concave, whereby the cotton fiber or lint is freed from knots, sand, seed, &c. This is accomplished by providing the concave with a double bottom, the upper one being composed of a series of transverse bars or slats, some of which are provided with lugs or teeth for acting in connection with the brush-cylinder upon the cotton fiber to straighten out the fiber, and others with ribs extending the entire length of the said bars for also operating, in connection with the brushing-cylinder, upon the straightened fiber, to thrash and beat the same, for removing foreign substances therefrom, and the lower bottom being formed from a sheet or sheets of zinc or equivalent material, provided with a number of perforations, through which the foreign substances above referred to may pass without allowing the fiber to escape and go to waste, all as hereinafter described and claimed.

In the accompanying drawings, Figure 1 represents a longitudinal section through an ordinary cotton-gin, with our improvements applied; Fig. 2, a plan view of the upper face of our improved separator-concave, and Fig. 3 a plan view of the lower perforated plate of the same.

Like letters refer to like parts in the different figures of drawings.

A represents the casing or walls of a cotton-gin of the ordinary or usual construction, provided at one side with two flaring walls or pieces, A′, which, together with a hinged transverse bar or guide-board, B, form the mouth or hopper of gin, into which the cotton is delivered for the action of the saws. The bar or board B is bolted or otherwise secured to a hinge or hinges, B′, pivoted within the hopper A′, as shown, for adapting the said hopper to be enlarged or diminished in size, as required. The inner wall of the hopper A′ is formed of a series of ribs, C, between which the saws D revolve, carrying with them in their rotation small portions of the cotton fiber, which is subsequently taken therefrom by the rotating brush-cylinder, (represented by E, Fig. 1.) The brush-cylinder E rotates at greater speed than the saws D, for adapting it to snatch the fiber from the saw-teeth and thrash the same against the separator-concave, which will now be described. The separator-concave, as suggested by its term, is formed in the arc of a circle of which the axis of the brush-cylinder is the center, so that the brushes upon the periphery of the cylinder in the rotation of the latter will be equidistant from the upper face of the concave at all points, and will thrash the cotton fiber without injuring the same. The separator is composed of two side or end pieces, F, in substantially the form of an arc of a circle, said end pieces being attached to the side walls of the cotton-gin in any usual manner. Upon the upper concave edges of these end pieces are secured in any suitable manner transverse bars or slats G and G′, preferably arranged at equal distances apart. These bars or slats differ in construction as follows, viz: The bars G are in main flat, but are provided at suitable intervals with lugs *g*, or saw-shaped teeth, as shown in Fig. 1. In the drawings three of these bars G are shown, although a larger or smaller number may be employed, if desired, and where more than one are employed we prefer to so arrange them that the teeth of the different bars will alternate, as shown in Fig. 2, as by this arrangement they will serve their purpose better, which is to straighten out the fiber as it is dragged across and between them by the brush-cylinder E, preparatory to the thrashing process. The bars G′ are provided with ribs *g*′, which, by preference, extend up to the plane of the upper edges of the teeth *g*, though they may be of any different height, if desired. These ribs extend the entire length of the bars G′, and between them are perforations g^2, of any desired number, and for the purpose hereinafter specified.

H represents the lower plate of the separa-

tor-concave, fastened to the lower edges of the end pieces, F, and provided throughout almost its entire area with perforations, as shown. It may be made of any suitable material, in one piece or in sections; but we prefer to form it from a single sheet of zinc or other sheet metal.

The cotton is placed in the mouth or hopper A′ of the cotton-gin, from which it is dragged by the saws D between the ribs C. It is then whipped from the saw-teeth by the brush-cylinder E, rotating at a higher rate of speed, and carried down to and dragged across and between the lugs or teeth *g* of bars G, whereby the fiber is separated, disentangled, and straightened. It is then whipped across the transverse to ribs *g′* of the bars G′, which operation serves to thoroughly thrash and beat the cotton fiber and free it from heavy or foreign substances. The cleansed fiber is then carried out through an opening for that purpose, as indicated by the arrows in Fig. 1, while the heavy particles of sand, seed, dust, dirt, or other foreign substance drop between the bars or slats G and G′, or through the perforations in same, upon the zinc bottom H. Any pieces of the fiber that may be accidentally carried through between the upper bars or slats will fall lightly upon the perforated zinc bottom, and the current of air passing through this concave chamber, will carry the fiber with it out through the opening before referred to, while the foreign substances will drop through the perforations of the zinc bottom. Thus it will be seen that there can be little or no waste of the fiber, and that the fiber will be of a better quality and freer from dirt and objectionable matter than when operated upon by a gin having the ordinary construction of separator-concave.

Having now described our invention, we claim as new—

1. A double concave for cotton-gins, consisting of the upper transverse bars provided with the teeth, ribs, and perforations, and the lower perforated plate, substantially as described, as a new article of manufacture.

2. The combination, with a cotton-gin, of the separator-concave having the separating-teeth, transverse ribs, and the lower perforated plate, for the purpose and substantially as described.

3. The combination, with the brush-cylinder of a cotton-gin, of a double stationary separator-concave having its upper face formed of transverse toothed and ribbed bars, and its lower face of a perforated sheet of zinc or other metal, substantially as described.

In testimony whereof we have hereunto set our hands this 15th day of October, A. D. 1885.

OSBORN M. STONE.
GEORGE A. PLATT.

Witnesses:
JOHN W. WALLACE,
E. M. NORTH.