

T. D. FALLON.

COTTON GIN.

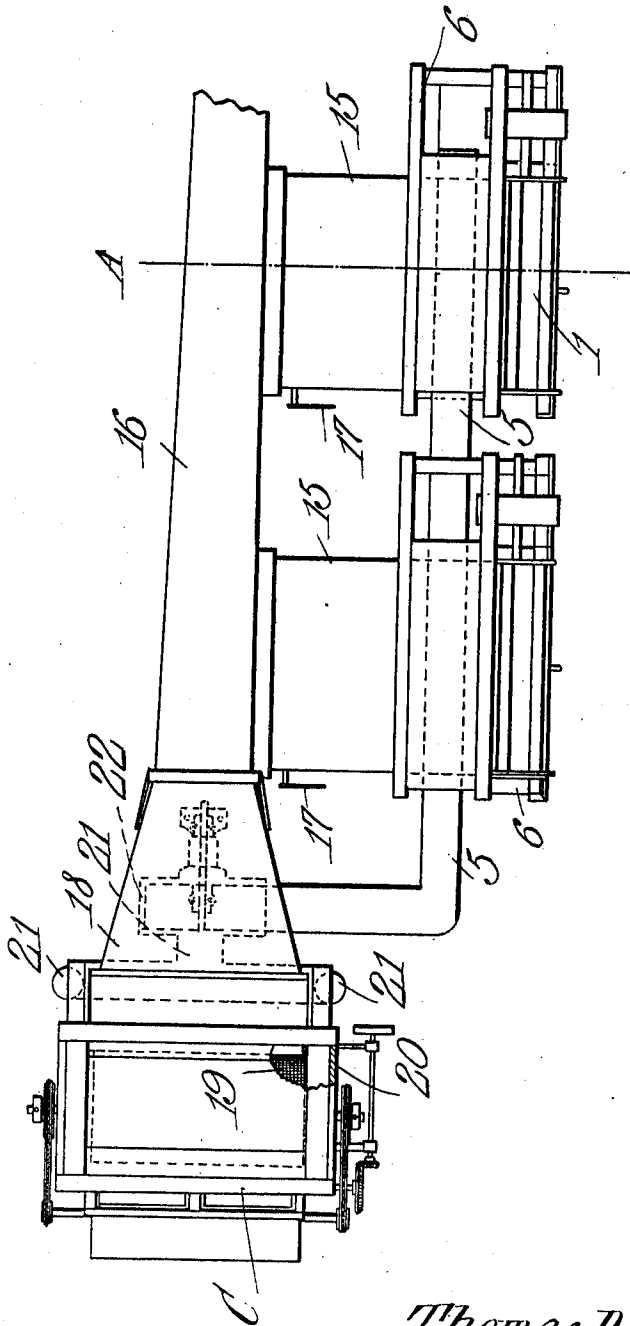
APPLICATION FILED JULY 15, 1909.

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Patented Sept. 20, 1910.

3 SHEETS-SHEET 1.

Fig. 1.



Witnesses

Herbert D. Lawson
Herbert D. Lawson

Inventor

Thomas D. Fallon

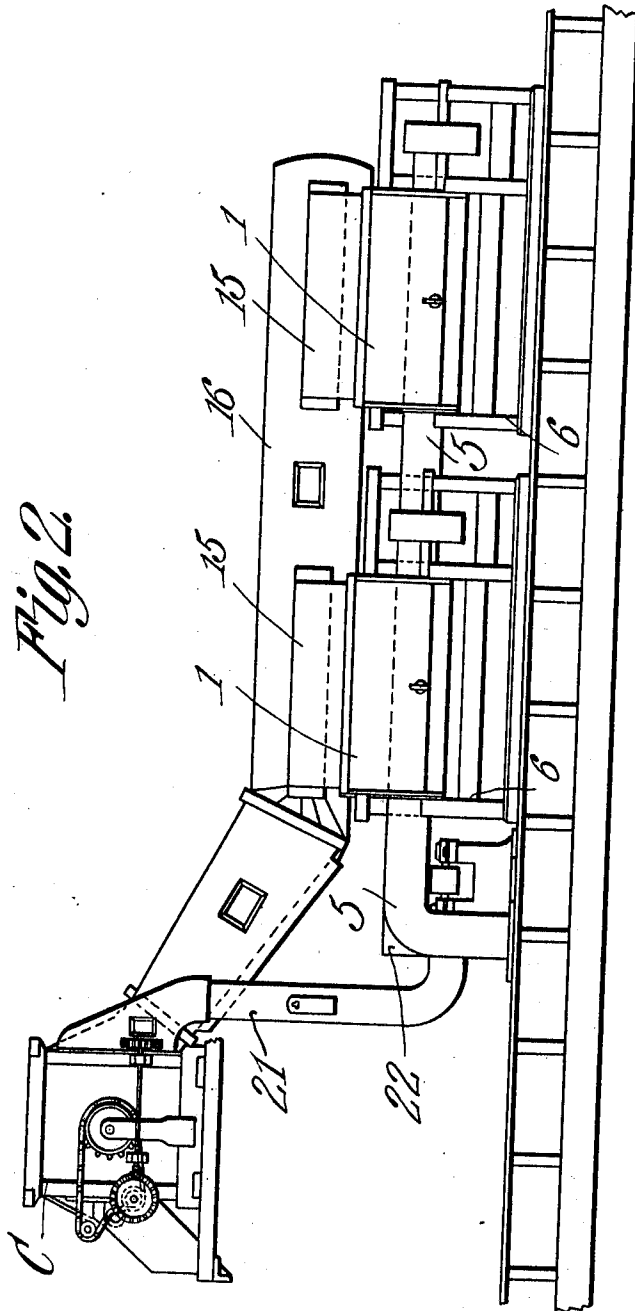
By

Chas. Snow & Co.
Attorneys

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Witnesses

E. J. [Signature]
Herbert D. Lawson

Inventor

Thomas D. Fallon

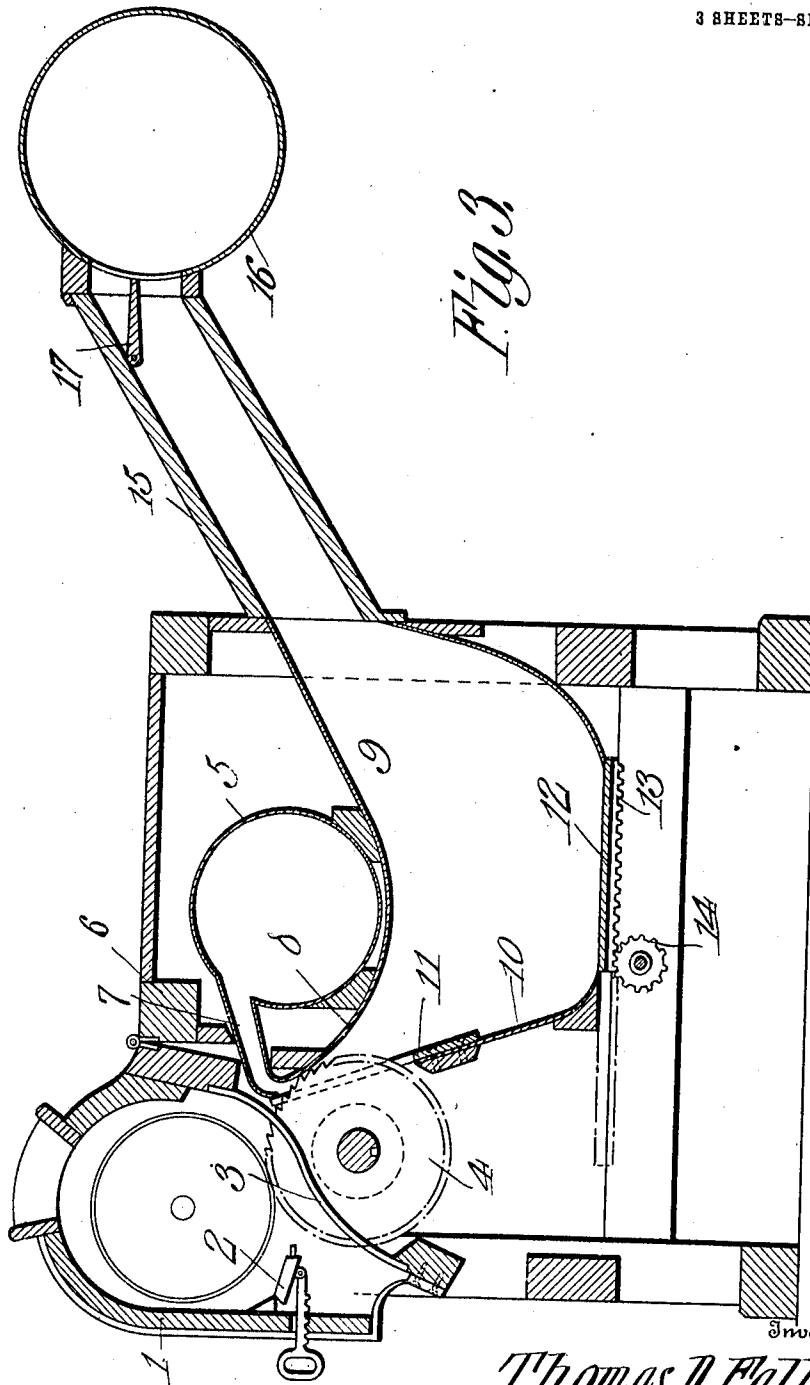
By

C. Snowles
Attorneys

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3 SHEETS—SHEET 3.



Witnesses
E. J. Stewart
Herbert Lawson

Inventor
Thomas D. Fallon
By *C. Snow & Co.*
Attorneys

UNITED STATES PATENT OFFICE.

THOMAS D. FALLON, OF PRATTVILLE, ALABAMA.

COTTON-GIN.

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To all whom it may concern:

Be it known that I, THOMAS D. FALLON, a citizen of the United States, residing at Prattville, in the county of Autauga and State of Alabama, have invented a new and useful Cotton-Gin, of which the following is a specification.

This invention relates to cotton gin systems and to gins for use in connection therewith.

One of the objects of the invention is to provide ginning mechanism wherein air is utilized for the purpose of removing lint from the gin saws, the air being so directed as to exert a blowing as well as a sucking action upon the lint, thus combining the advantages of the air-blast gins and the gins in which suction is utilized for stripping the gin saws.

A further object is to provide a ginning system in which one fan can be utilized for producing both the blast and the suction necessary for the proper action of the lint within the system.

A further object is to provide a gin having novel means for directing air between the saws and into the lint flue.

Another object is to provide simple and efficient means whereby motes and other objectionable particles can be readily removed from the lint flue.

With these and other objects in view the invention consists of certain novel details of construction and combinations of parts hereinafter more fully described and pointed out in the claim.

In the accompanying drawings the preferred form of the invention has been shown.

In said drawings: Figure 1 is a plan view of a cotton ginning system embodying the present improvements. Fig. 2 is a front elevation of said apparatus. Fig. 3 is an enlarged section on line A Fig. 1.

Referring to the figures by characters of reference 1 designates the breast of the gin, the same being provided with the usual seed board 2, and grate 3, the gin saws 4 of course projecting between the bars of the grate in the ordinary manner. An air-distributing tube 5 is supported within the gin frame 6 and has a discharge nozzle 7 of the same width as the gang of saws in the gin. The lower wall of this nozzle merges into the upper convex wall 8 of the lint flue 9 of the gin, this wall extending under the tube

5. The front wall 10 of the lint flue terminates close to but below the gin saws 4 and is connected to the upper wall of the nozzle 7, by means of a grate 11, the bars of which extend between the gin saws. As shown in Fig. 3 the lint flue is trough-shaped and the bottom thereof consists of a slide 12, having a rack 13 on its lower face which meshes with an actuating gear 14. Obviously, by rotating this gear the slide 12 can be shifted so as to open the bottom of the lint flue and permit motes and the like to escape therefrom. The lint flue 9 has an upwardly and rearwardly inclined extension 15 opening into a return tube 16, there being a valve 17 within the extension 15, and by means of which the passage of air and lint from the flue 9 to the tube 16 may be controlled.

Any desired number of gins such as herein described can be embodied in a battery utilized in connection with the complete apparatus, it being understood that one distributing tube 5 extends transversely through all of the gins as clearly shown in Figs. 1 and 2. All of the extensions 15 of the lint flues 9 also open into the one return tube 16. This tube, which gradually increases in transverse area toward its discharge end, opens into a flared discharge head 18, which, in turn, directs lint into the condenser C. This condenser constitutes the subject matter of a separate application. It might be said however that the same includes a screen 19 mounted for rotation in the path of the air current entering the condenser from the head 18, and air chambers 20 are located in the ends of the condenser to receive the air after it has passed into the screen. These air chambers are connected to flues 21 which in turn open into the casing 22 of a fan, it being understood that the distributing flue or tube 5 extends from this casing.

In using the apparatus herein described cotton is fed to the various gins included in the battery, and the saws 4 carry it between the bars of the grate 11 and into the inlet end of the lint flue 9. As these teeth pass between the bars of the grate 11 they are brought into the path of an air blast discharged from the nozzle 7 and the lint is thus blown into the flue 9. In view of the size of the trough-like portion of the lint flue 9 the force of the blast becomes spent therein and the motes and other undersirable

parts drop by gravity on to the bottom of the flue 9 and can therefore be discharged past the slide or mote board 12. The lint, which constitutes the lighter particles contained within the flue 9, is sucked upwardly and outwardly through the extension 15 and into the return tube 16, this being due to the fact that the fan producing the blast from each nozzle 7 is supplied with air solely through the flues 21, and therefore a suction is established through the return tube 16 and the condenser to the air chambers 20 and the flues 21. It will be apparent therefore that the lint will be thus conveyed to the revoluble screen within the condenser and will here be removed while the air utilized for conveying the lint to the condenser will be again used in the manner hereinbefore described.

It will be seen that by constructing the apparatus in the manner herein set forth a single fan can be utilized for producing air blasts designed to strip lint from the gin saws, and the same fan will set up a suction for the purpose of drawing the freed lint into the condenser.

Obviously mechanism such as herein described is advantageous because of its simplicity, and because there are few parts to get out of order. The power required to operate the mechanism is reduced to the minimum, and, by utilizing a blast for stripping lint from the saws and then utilizing suction for the purpose of conveying lint from the lint flue to the condenser, the separation of motes, etc., from the lint within the lint flue is greatly facilitated. This is due, primarily, to the fact that the force of the

blast is spent within the lint flue, and only the slight suction is brought into play for the purpose of removing the lighter particles or lint from the said flue.

It is of course to be understood that various changes may be made in the construction and arrangement of the parts without departing from the spirit or sacrificing the advantages of the invention.

What is claimed is:—

In apparatus of the class described, a lint flue having slots in one end portion and gradually increasing in area from the slotted end thereof toward a point between its ends, gin saws projecting through the slots, nozzles for directing jets of air against the saws and into the flue toward the enlarged portion thereof, a condenser having an inlet and an outlet, a suction flue connecting the lint flue with the inlet of the condenser, said lint and suction flues forming a continuous flue from the nozzles to the condenser, a blast flue connecting the outlet of the condenser with the nozzles, and a fan housed within the blast flue for creating a suction through the lint flue, suction flue and condenser, and for forcing the air through the nozzles and into the lint flue, the blast discharged through the nozzles and into said flue being dissipated in the intermediate enlarged portion of the flue.

In testimony that I claim the foregoing as my own, I have hereto affixed my signature in the presence of two witnesses.

THOMAS D. FALLON.

Witnesses:

JNO. WADSWORTH,
GUY RICE.