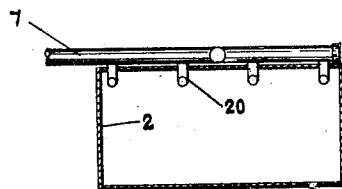
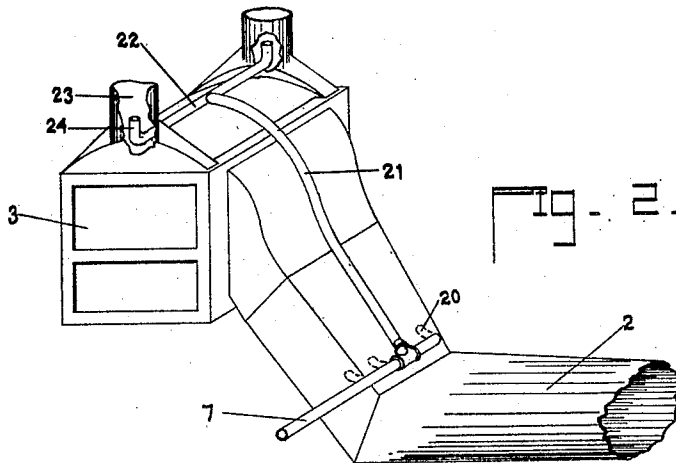
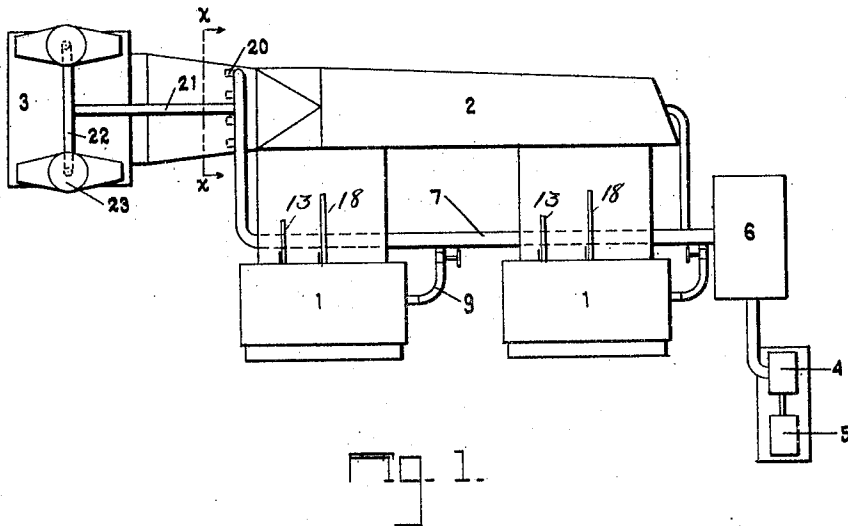


W. W. JAMES.  
COTTON GIN.  
APPLICATION FILED AUG. 2, 1909.

977,194.

Patented Nov. 29, 1910.

2 SHEETS-SHEET 1



WITNESSES:

J. D. Murray  
G. B. Coulson

INVENTOR

Walter W. James

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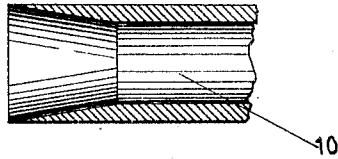


Fig. 4.

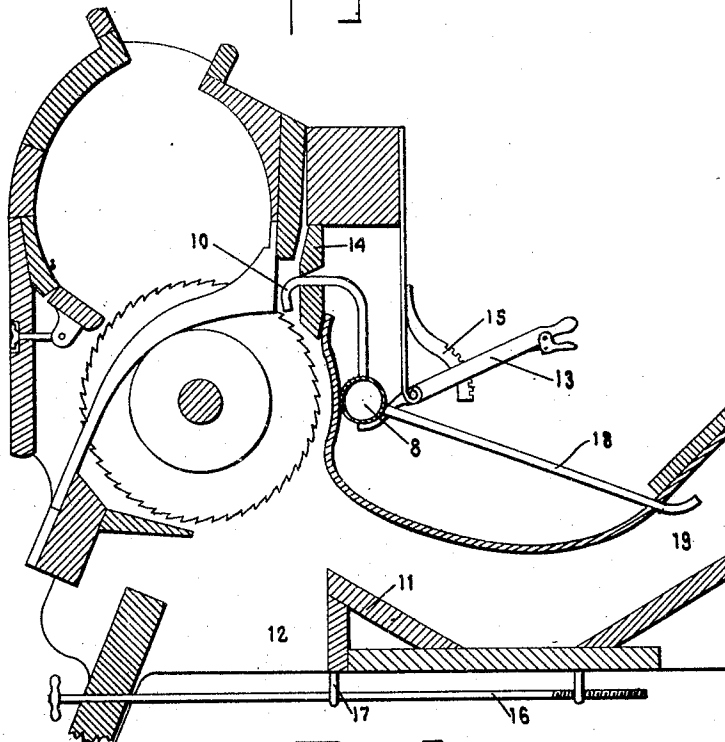


Fig. 5.

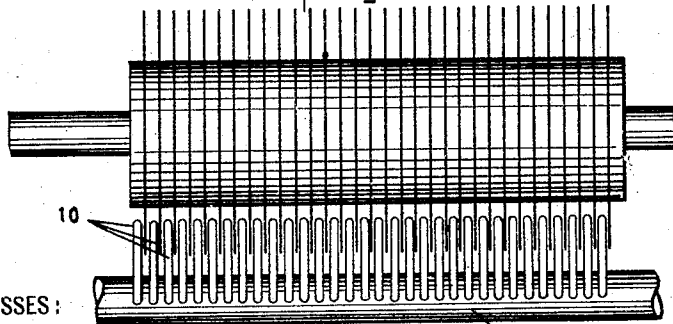


Fig. 6.

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# UNITED STATES PATENT OFFICE.

WALTER W. JAMES, OF ATWELL, TEXAS.

COTTON-GIN.

977,194.

Specification of Letters Patent.

Patented Nov. 29, 1910.

Application filed August 2, 1909. Serial No. 510,771.

*To all whom it may concern:*

Be it known that I, WALTER W. JAMES, a citizen of the United States, residing at Atwell, in the county of Callahan and State of Texas, have invented certain new and useful Improvements in Cotton-Gins, of which the following is a specification.

My invention relates to new and useful improvements in cotton gins. Its object is to provide a cotton gin, which will employ jets of compressed air to remove the cotton lint from the gin saws, instead of the rotating brushes now in common use.

Another object is to provide a cotton gin, wherein the lint will be transferred through the lint flue to the condenser by the agency of compressed air.

A further object is to provide the most efficient means for removing the lint from the saws, by the agency of compressed air, and for separating at the same time notes and trash from the lint.

Finally the object of the invention is to provide a device of the character described, that will be strong, durable, simple, and efficient, and comparatively easy to produce, and also one in which the various parts will not be likely to get out of working order.

With these and various other objects in view, my invention has relation to certain novel features of construction and operation, an example of which is described in the following specification and illustrated in the accompanying drawings, wherein:

Figure 1 is a diagrammatic plan view of a two gin outfit, including the lint flue, the condenser, air compressing means, and a compressed air distribution system. Fig. 2 is a perspective view of the condenser and a portion of the lint flue, showing how compressed air is introduced into these parts to produce a blast ahead of the lint. Fig. 3 is a cross section through the lint flue on the line  $x-x$  of Fig. 1. Fig. 4 is a detail sectional view of the extremity of one of the numerous small pipes, which blow the lint from the saws, showing how the outlets of these pipes are flared in order to spread the air as it is ejected. Fig. 5 is a cross sectional view of a gin stand, showing the compressed air feeder pipe sectionally, and the branch pipes in elevation, means also being shown whereby the feeder may be elevated in order to regulate the angle at which the air blast impinges upon the saws. Fig. 6 is a top view of a portion of a saw cylinder, showing

the compressed air feeder adjacent thereto, and the numerous branch pipes projecting from the feeder between the saws.

Referring now more particularly to the drawings wherein like numerals of reference designate similar parts in all the figures, the numeral 1 designates the gins, 2 the lint flue and 3 the condenser.

Air is compressed in the cylinder 4 by means of the steam cylinder 5, and is brought to the required pressure for use in the tank 6. From this tank, a distribution main 7 extends behind the gins, supplying air to the feeders 8 within said gins. The connections 9 between the main and the feeders are to be flexible for reasons hereinafter explained. From the feeders, there extend a plurality of small discharge pipes 10, having their outlets above and between the gin saws, and directed rearwardly at an angle such that the air blast and lint will impinge upon the mote board 11. Means are described hereinafter for creating a partial vacuum in the passage way 19 above the mote board and leading to the lint flue, so that the air blast from the pipes 10 tends to turn rearwardly into said passage way carrying the lint from the saws therinto. Any notes or particles of trash that are mixed with the lint and are heavier than the same will not be sustained by the air blast, but will fall into the space 12, whence they may be removed by any suitable means.

It is desirable that the angle at which the air blast impinges upon the saws be capable of some slight adjustment, and to secure this, the lever 13 is provided. This lever has its lower extremity projecting beneath the feeder 8, so that by manipulating the lever, the feeder may be displaced vertically to some extent. Since the upper portion of the discharge pipes 10 are restricted from vertical motion by the board 14, the feeder must rotate slightly as it is raised, thus varying the discharge angle of the outlets. A curved rack 15 is provided to act in conjunction with the usual spring pressed rod and hold the lever in any desired position of adjustment. Transverse adjustment of the mote board may be accomplished by means of the adjusting screw 16, rotating in the lugs 17, the rear extremity of the screw being threaded into the rear lug. In order to permit of the vertical adjustment of the feeders 8, it is necessary that the previously described connections 9 be flexible. By

making the extremities of the discharge pipes 10 bell-mouthed as shown in Fig. 4, the air is caused to spread out immediately upon its escape from said pipes, sweeping close to the saw surfaces so as to act with a maximum force upon the lint.

From the feeder pipe 8 in each gin, a discharge pipe 18 will extend rearwardly, opening into the passage 19, leading to the lint flue. The rearward discharge of compressed air from the pipe 18 into the lint flue will facilitate the passage of the lint from the gin into the flue.

The distribution main 7 is provided at its extremity with four small branch pipes 20 entering the lint flue at some point therein between the gins and the condenser, and discharging toward the condenser. A partial vacuum is produced behind this blast of air which still further aids in the passage of the lint through the lint flue.

A feeder 21 branches from the extremity of the main 7, and connects with a pipe 22 upon the condenser, extending longitudinally thereof. The pipe 22 extends at either side into the dust flues 23 of the condenser, and is there provided with upwardly discharging outlets 24. This upward rush of air tends to carry with it the air in the condenser, lessening the resistance to the entrance of air and lint from the lint flue.

It is obvious that a blower may be used if desired to place the air under compression, and that the power may be furnished by a gas engine, electric motor, or other means as well as by steam.

The above described device is adapted to be used with any of the present forms of cotton gins without materially altering the construction of the same, it being necessary only to remove the brush cylinders, and substitute the air feeders 8, with their discharge pipes 10.

What I claim is:

1. In a device of the character described, the combination with the gin frame and gin saws, of air compressing means, a distribution pipe receiving the air from said means, a feeder pipe within the gin frame receiving air from said distribution pipe, a plurality of branch pipes extending from said feeder pipe discharging between the saws, and a pipe discharging rearwardly from said feeder into the lint discharging aperture of the gin.

2. In a device of the character described, the combination with a gin, a lint flue and a condenser, latter being provided with flues, of air compressing means, a distribution pipe receiving the air from said means, a feeder pipe within the gin, longitudinal

thereof, receiving air from said distribution pipe, a plurality of pipes branching from said feeder pipe and discharging between the saws, a pipe discharging from said feeder into the lint flue, a plurality of pipes discharging from said distribution pipe into the lint flue, toward the condenser, and a plurality of pipes discharging upwardly within the condenser into the dust flues, and connected with said distribution pipe.

3. In a device of the character described, the combination with a gin, a lint flue and a condenser, the latter being provided with dust flues, of a plurality of pipes discharging compressed air upon the gin saws to remove the lint therefrom, a plurality of pipes discharging compressed air into the lint flue, toward the condenser, and a plurality of pipes discharging compressed air into the dust flues of the condenser in an upward direction, all of said pipes having a common source of air pressure.

4. In a device of the character described, the combination with a gin frame, saws and ribs, of a source of compressed air, a pipe extending longitudinally of the gin at the rear of the saws connected with said source of compressed air, means whereby said pipe may be adjusted vertically, a plurality of pipes branching from said pipe, having funnel-shaped discharge outlets above and between the saws, and directed slightly to the rear, and means preventing upward motion of said branch pipes, said means being adapted to permit a pivotal movement of said pipes so that the discharge angle of the outlets may be varied.

5. In a device of the character described, the combination with a gin frame, saws, ribs, and mote board, the latter being transversely adjustable of the frame, of air compressing means, a lint flue, a condenser having dust flues, pipes discharging air compressed by said means into the lint flue toward the condenser, a pipe adjacent to the saws and parallel to the saw cylinder, receiving air from said means, a plurality of pipes branching from the last named pipe, discharging downwardly and rearwardly between the saws, means whereby the angle of discharge of said branch pipes may be varied, and pipes connected with said air compressing means, discharging upwardly into the flues of the condenser.

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

WALTER W. JAMES.

Witnesses:

J. E. STEADHAM,  
G. F. McCool.