

R. B. LUMPKIN.

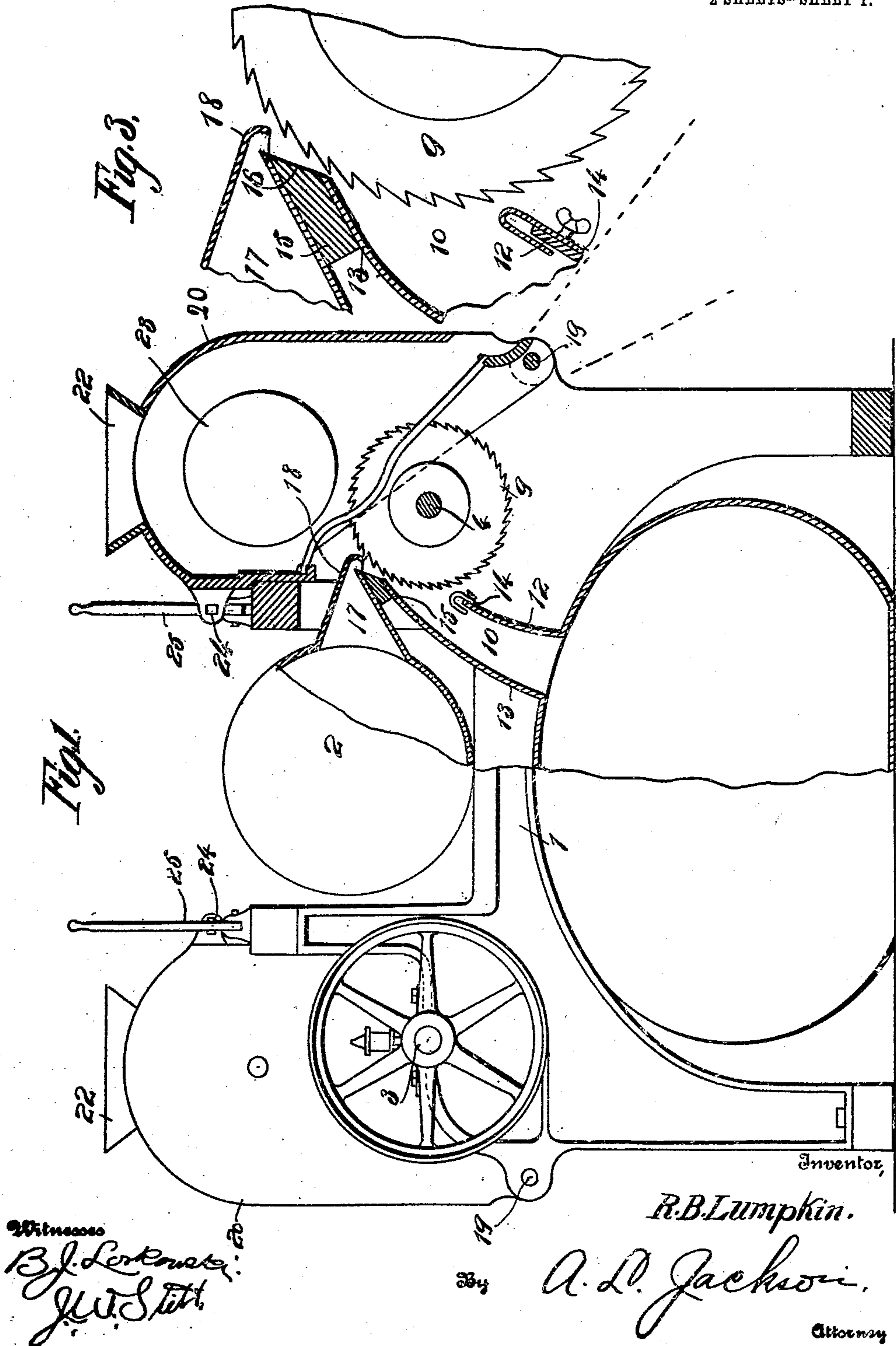
COTTON GIN.

APPLICATION FILED NOV. 12, 1906.

910,700.

Patented Jan. 26, 1909.

2 SHEETS—SHEET 1.



R. B. LUMPKIN.  
COTTON GIN.

APPLICATION FILED NOV. 12, 1906.

910,700.

Patented Jan. 26, 1909.

2 SHEETS—SHEET 2.

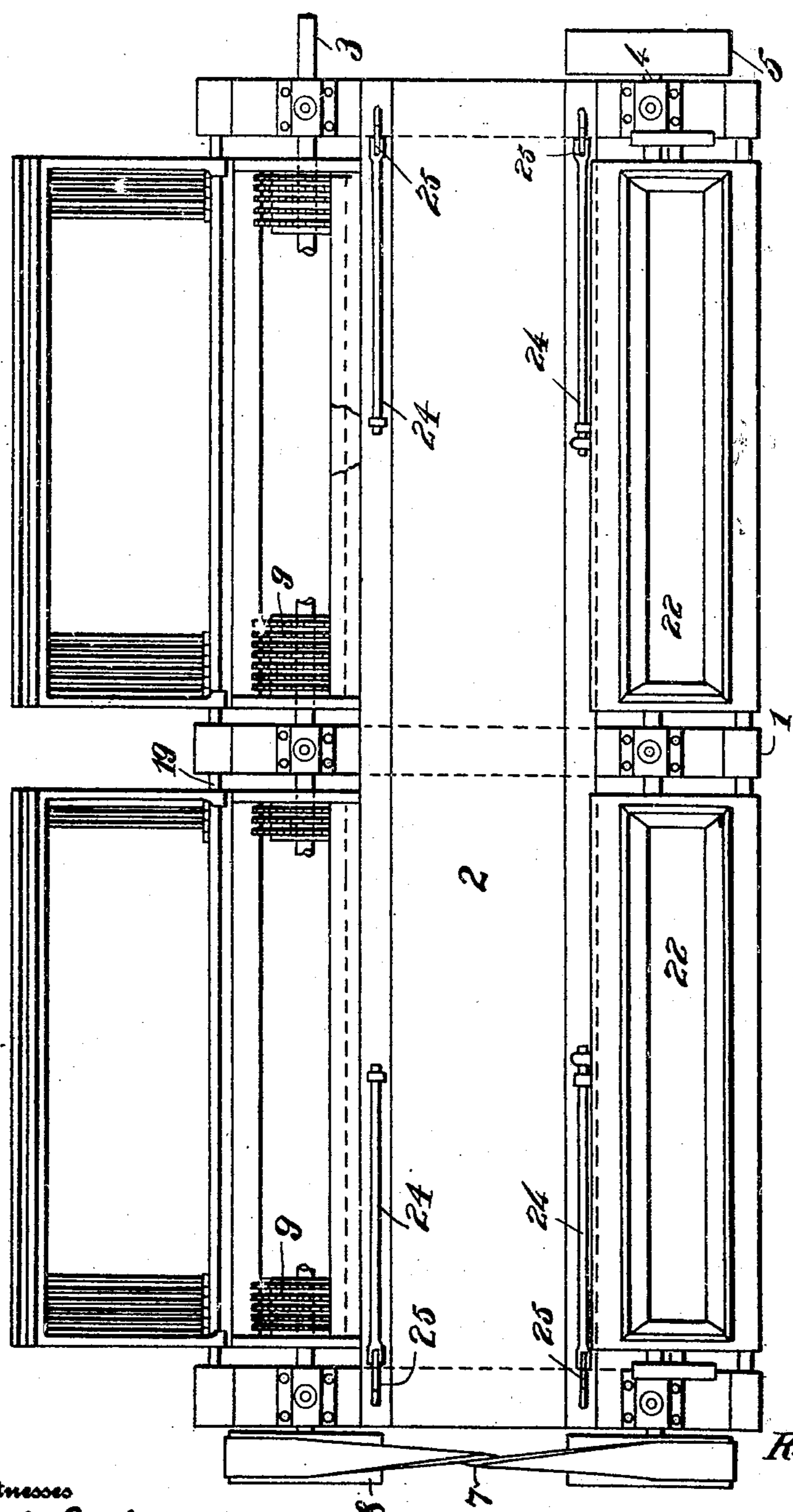


Fig. 2.

Witnesses  
B. J. Lorkowski  
J. W. Sitt.

Inventor,  
R. B. Lumpkin.  
A. L. Jackson.  
Attorney.

# UNITED STATES PATENT OFFICE.

ROBERT B. LUMPKIN, OF DALLAS, TEXAS, ASSIGNOR TO AIR BLAST GIN COMPANY, OF  
DALLAS, TEXAS, A CORPORATION OF TEXAS.

## COTTON-GIN.

No. 910,700.

Specification of Letters Patent.

Patented Jan. 26, 1909.

Application filed November 12, 1906. Serial No. 343,093.

*To all whom it may concern:*

Be it known that I, ROBERT B. LUMPKIN, a citizen of the United States, residing at Dallas, in the county of Dallas and State of Texas, have invented a new and useful Cotton-Gin, of which the following is a specification.

This invention relates to cotton gins of that character in which air blasts are utilized for stripping cotton from the gin saws and for discharging it into the lint flues.

It is old in this art to dispose a plurality of saws adjacent a lint receiving flue and to discharge air under pressure for the purpose of stripping the cotton from the saws and directing it into the flues. It has been found however that the tendency of the air as soon as discharged is to cling against that wall of the flue farthest removed from the saws, this action of the air current resulting from the fact that the current is subjected to an unequal atmospheric pressure. As a result only a very small part of the air current acts upon the saws and therefore the efficiency of the apparatus is greatly reduced.

It is the object of the present invention to avoid this objectionable feature by interposing a deflector designed to positively deflect a current of air from the outlet toward the saw so that the tendency of the air current to hug the wall of the flue will be sufficiently overcome to enable the cotton to be effectively stripped pneumatically as the saws rotate.

Another object is to provide a battery of oppositely disposed gins designed to discharge stripped cotton into a common flue, the gang of saws in each gin being supplied with air from a common flue interposed between the gins. Space is thus economized and less time is consumed in feeding the gins than where all of the gins of a battery are disposed in alinement, as heretofore.

With these and other objects in view the invention consists of certain novel features of construction and combinations of parts which will be hereinafter more fully described and pointed out in the claims.

In the accompanying drawings is shown the preferred form of the invention.

In said drawings: Figure 1 is a view partly in end elevation and partly in section of a battery of gins constructed in accordance with this invention, the breast of one of the gins being shown by dotted lines in lowered

position; Fig. 2 is a plan view of the machine, the breasts of two of the gins being shown lowered; and Fig. 3 is an enlarged detail view showing the positions assumed by the saw teeth when in the line of the blast.

Referring to the figures by characters of reference, 1 is an arched frame having an air box or receptacle 2 arranged longitudinally thereon at the center and shafts 3 and 4 are journaled upon the frame at opposite sides of the air receptacle. Shaft 4 has pulleys 5 and 6 at the ends thereof, the pulley 5 being adapted to be driven by a suitable belt, not shown, while a crossed belt 7 serves to transmit motion from pulley 6 to pulley 8 secured to the shaft 3. The two shafts 4 and 3 are thus caused to rotate in opposite directions at the same speed. Two sets of gin saws 9 are arranged on each shaft 3 and 4 and disposed below each of these sets of saws is a duct or flue which extends throughout the length of saws and opens into the upper portion of a large lint flue 11 arranged beneath the frame 1 and extending from end to end thereof. The duct or flue 10 has its outer wall 12 shorter than its inner wall 13 and the moteboard 14 upon the wall 12 is disposed very close to the peripheries of the saws 9. The upper end of the wall 13 is fastened to a strip 15 having a beveled face 16 which rests very close to the peripheries of the saws, said face preferably alining with the wall 13. This strip 15 constitutes the bottom of an air outlet chute 17, the top of which consists of a curved plate 18 having its lower edge located between the peripheries of the saws and the beveled face 16. As a result of this construction and arrangement a blast of air discharged from the chute 17 will be directed across the saws as indicated by the arrows, the greatest compression of air about the saw teeth taking place just as the teeth pass the lower edge of the beveled face 16, thereby stripping the cotton from said teeth and absolutely preventing any portion of the cotton from making a complete revolution with the saws.

A rod 19 is secured within each side of the frame 1 and pivotally mounted on each of these rods are two breasts 20 adapted to swing into position over the two sets of saws 9. Each of these breasts carries a grate 21, a feed hopper 22 and in each side an antifric-tion disk 23 of the usual type. Suitable locking means such as a sliding bolt 24 may

be used for locking each of the breasts in raised position and each bolt is adapted to be actuated by a lever 25 at the end of the gin.

As has heretofore been intimated the tendency of a current of air discharged into the flue 10 from the chute 17 is to hug the upper or concave wall of the flue, this result being obtained because said upper wall relieves the upper portion of the current from the atmospheric pressure and therefore compels the current to travel along said flue wall.

It is old in this art to utilize a current of air for the express purpose of stripping cotton from the saws but it has been found invariably that the air current instead of following the direction of the outlet moves backward away from the saws and follows that wall of the machine extending from the outlet. As a result the current of air is drawn away from the gins and its efficiency as a stripping medium is practically nullified. The deflecting strip 15 has been provided by me for the purpose of overcoming this objectionable feature. By placing this strip at the inner edge of the outlet opening and by providing the beveled face 16 the air current as soon as discharged from the outlet chute is projected against this beveled face and deflected against the teeth of the saws and strips the cotton therefrom as they are successively brought into position at the lower edge of said beveled face. When each tooth assumes this position the current of air operates to strip the cotton therefrom in the direction of the longitudinal center of the tooth because the stripping takes place at the point where the deflected air is driven inward against the concave wall of the flue. The cotton stripped from the teeth in this manner is blown downward into the flue 10 and into a large receiving flue 11 and the same air current carries the lint from the flue 11 to the condenser, not shown. By providing a battery of oppositely disposed gins a considerable saving of time and space results because the entire machine can be placed within a smaller area than could four separate gins. Moreover, it is much easier to feed the cotton to a battery of gins such as herein described than to separate gins and therefore considerable time and labor is saved by means of this apparatus. By positioning the air box between the two opposed sets of gins the air can be discharged from said box in opposite directions to the respective gins and by arranging the lint receiver or flue 11 below and between the two sets of gins the same current of air which is discharged from the air box 2 is sufficient to direct the stripped lint or cotton downward into the receiver 11 thence longitudinally to the condenser.

What is claimed is:

1. In a cotton gin the combination with a gang of saws, a lint receiver, and a flue ex-

tending from the receiver to the saws; of an air box, means for directing air from the box and into the flue, and a deflector interposed between said means and the flue for directing air against the teeth of the saws prior to its entrance to the flue.

2. In a cotton gin the combination with a gang of saws, and a lint flue extending from the saws; of means for directing air under pressure into the flue and close to the saws, and a deflector interposed between said means and the flue for directing the air against the saws prior to its admission to the flue.

3. In a cotton gin the combination with a plurality of saws; of a lint flue disposed adjacent to and adapted to receive lint from the saws, means for directing a blast of air into the flue and adjacent said saws, and a deflecting strip interposed between said means and the flue for directing the blast longitudinally of the saw teeth as they successively pass said strip.

4. In a cotton gin the combination with a gang of saws, and a flue disposed to receive lint from the saws; of an air feed disposed to direct an air blast above the saws and into the flue, and means interposed between the feed chute and the flue for deflecting the blast toward the saws prior to its passage into the flue.

5. In a cotton gin the combination with a gang of saws, and a flue disposed to receive lint therefrom; of a deflecting strip disposed at the upper end of the flue, and an air feed chute extending over said strip and saws for directing a blast of air against the deflecting strip prior to the passage of said air into the flue.

6. In a cotton gin the combination with a gang of saws, a receiver, and an air box; of a lint flue extending from the saws and opening into the receiver, an air feeding chute extending from the air box and above the flue, and a deflecting strip interposed between said chute and the flue and directing an air blast toward the saws prior to the passage of air into the flue.

7. The combination with oppositely disposed similar cotton gins, and a gang of saws included in each gin; of an air box interposed between the gins and disposed to direct blasts of air in opposite directions against the saws of the respective gins, a receiving flue interposed between and below the gins, lint flues extending therefrom to the respective gins, and means connected to each lint flue for deflecting blasts of air against the saws prior to their movement into the lint flue.

8. In a cotton gin the combination with gin saws and means for feeding cotton thereto; of a lint receptacle below the saws, a flue for directing lint from the saws and into the receptacle, an air box, a beveled cross strip adjacent the air box and overhanging the

saws, a feeding chute extending from the air box and above the cross strip, said chute being disposed to direct air tangentially the gang of saws and under the cross strip to strip lint from the saws and direct it into the flues.

9. In a cotton gin, a gin saw, a nozzle mounted adjacent to said saw and having an opening discharging in the direction of rotation of said saw, and a plate secured to said nozzle at the opening thereof, said plate being mounted at an angle with said saw and adapted to direct an air blast from said nozzle against said saw.

10. In a cotton gin provided with a gang of saws and a flue disposed to receive lint therefrom; an air feed for directing a blast of air close to the saws and in a direction parallel to a plane tangent to the peripheries of the saws and a deflector disposed at an angle to the path of the blast of air for concentrating the blast of air in the paths of the saw teeth and in the direction of the rotation of the saw teeth for driving the lint therefrom into said flue.

11. In a cotton gin provided with a gang of saws and a flue disposed to receive lint therefrom; an air blast pipe, an air feeding chute for directing air therefrom close to said saws, and means between said flue and said chute cooperating with said air feeding chute for causing the air to strike the teeth of the saws and to drive the lint therefrom into said lint flue.

12. In a cotton gin provided with a gang of saws and a flue disposed to receive lint therefrom; means for directing air close to said saws and a deflector co-extensive with the gang of saws and having its deflecting surface commencing at the termination of the air-directing means and set at an angle to the air-passage for concentrating air pressure in the path of the saw teeth and in the direction of the rotation of the saw teeth prior to its passage into said flue.

13. In a cotton gin the combination with a gang of saws, and a flue disposed to receive lint from the saws; of an air feed disposed to direct an air blast past the saws and into the flue, and means interposed between the feed

chute and the flue for deflecting the blast toward the saws prior to its passage into the flue.

14. In a cotton gin provided with a gang of saws and a flue disposed to receive lint therefrom; an air feed for directing a blast of air close to and tangentially to the peripheries of the saws and a deflector disposed at an angle to and in the path of the blast of air for concentrating the blast of air in the paths of the saw teeth for driving the lint therefrom into said flue.

15. In a cotton gin provided with a gang of saws and a flue disposed to receive lint therefrom; an air feed co-extensive with the width of the gang of saws for directing a blast of air close to and tangentially to the peripheries of the saws and a deflector between the air-feed and the flue co-extensive with said air feed and disposed at an angle to and in the path of the blast of air for concentrating the blast of air in the paths of the saw teeth for driving the lint therefrom into said flue.

16. In a cotton gin provided with a gang of saws and a flue disposed to receive lint therefrom; an air feed adjacent to and co-extensive with said gang of saws for directing a blast of air close to and tangentially to said gang of saws and a deflector co-extensive with and commencing at the termination of said air feed and disposed at an angle to and in the path of the blast of air for concentrating the blast of air in the paths of the saw teeth to drive the lint therefrom into said flue.

17. In a cotton gin, a gin saw, a nozzle mounted adjacent to said saw and having an opening discharging in the direction of the rotation of said saw, and a plate mounted at the termination of said nozzle and adapted to intercept air issuing from said nozzle and to deflect the same against said saw.

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

ROBT. B. LUMPKIN.

Witnesses:

I. SAGOR.

J. B. HERRING.