

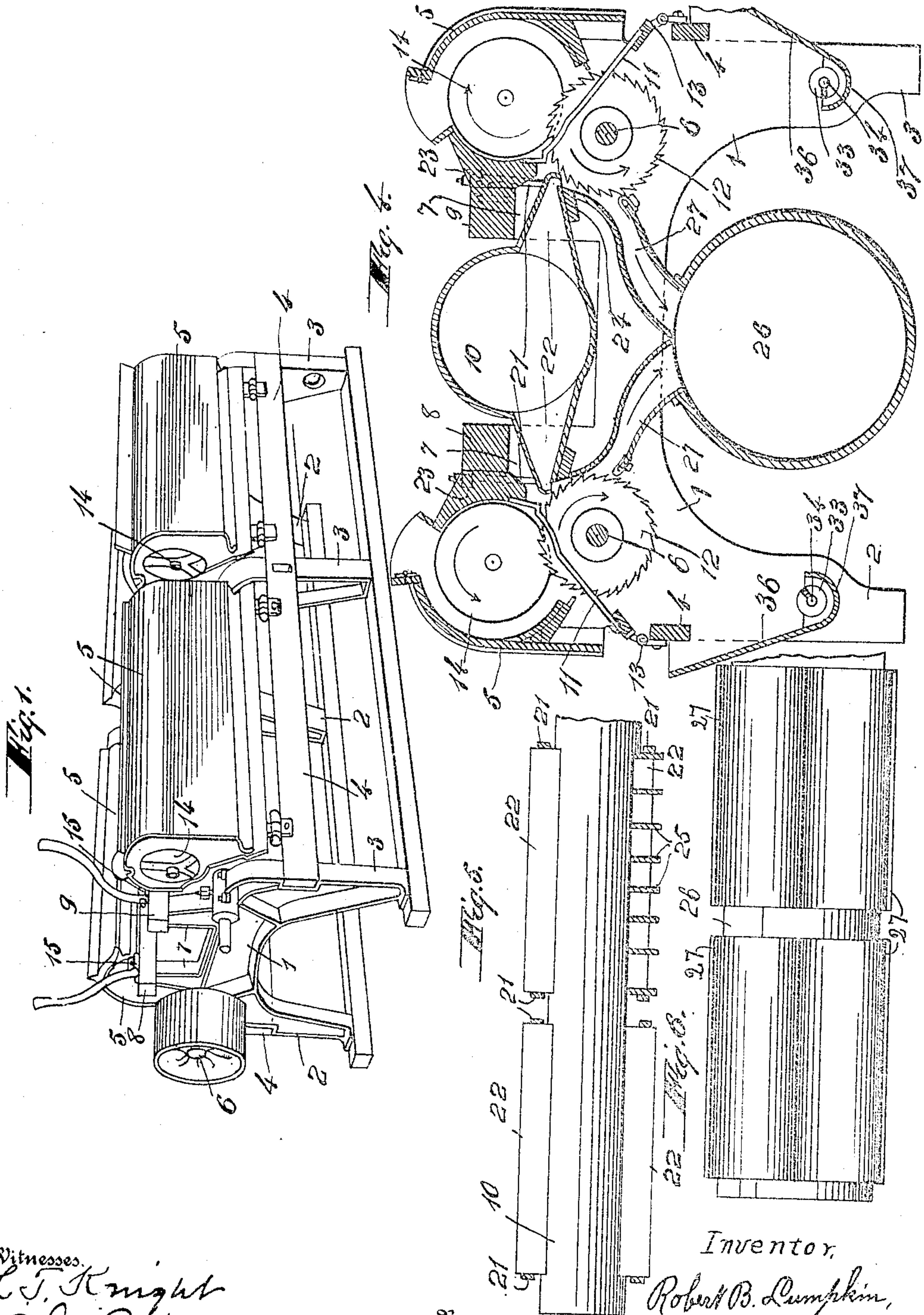
No. 887,487.

R. B. LUMPKIN.
COTTON GIN.

PATENTED MAY 12, 1908.

APPLICATION FILED JUNE 17, 1907.

3 SHEETS—SHEET 1.



Witnesses.

L. J. Knight
B. J. Lortkowski

By

Inventor,
Robert B. Lumpkin,
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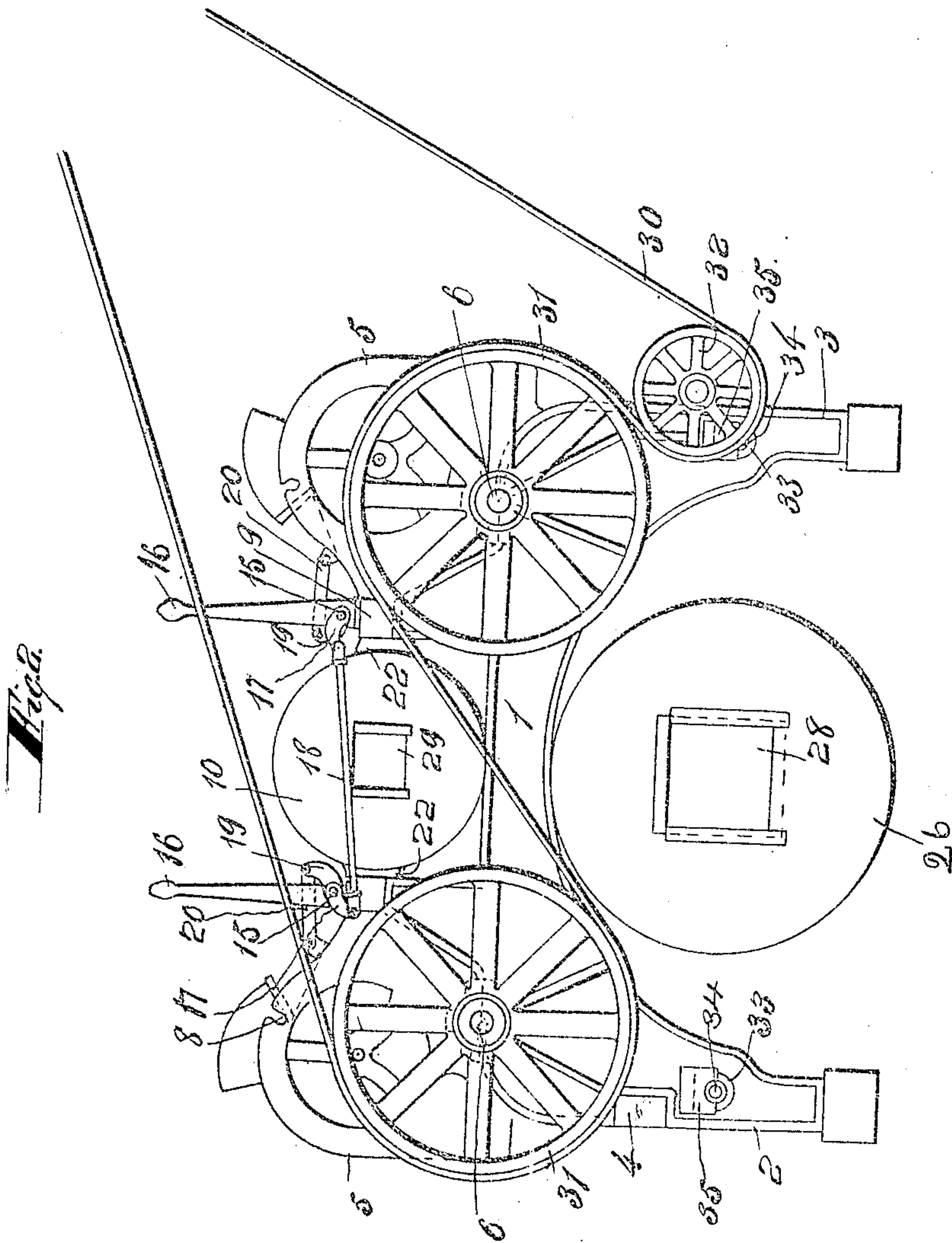
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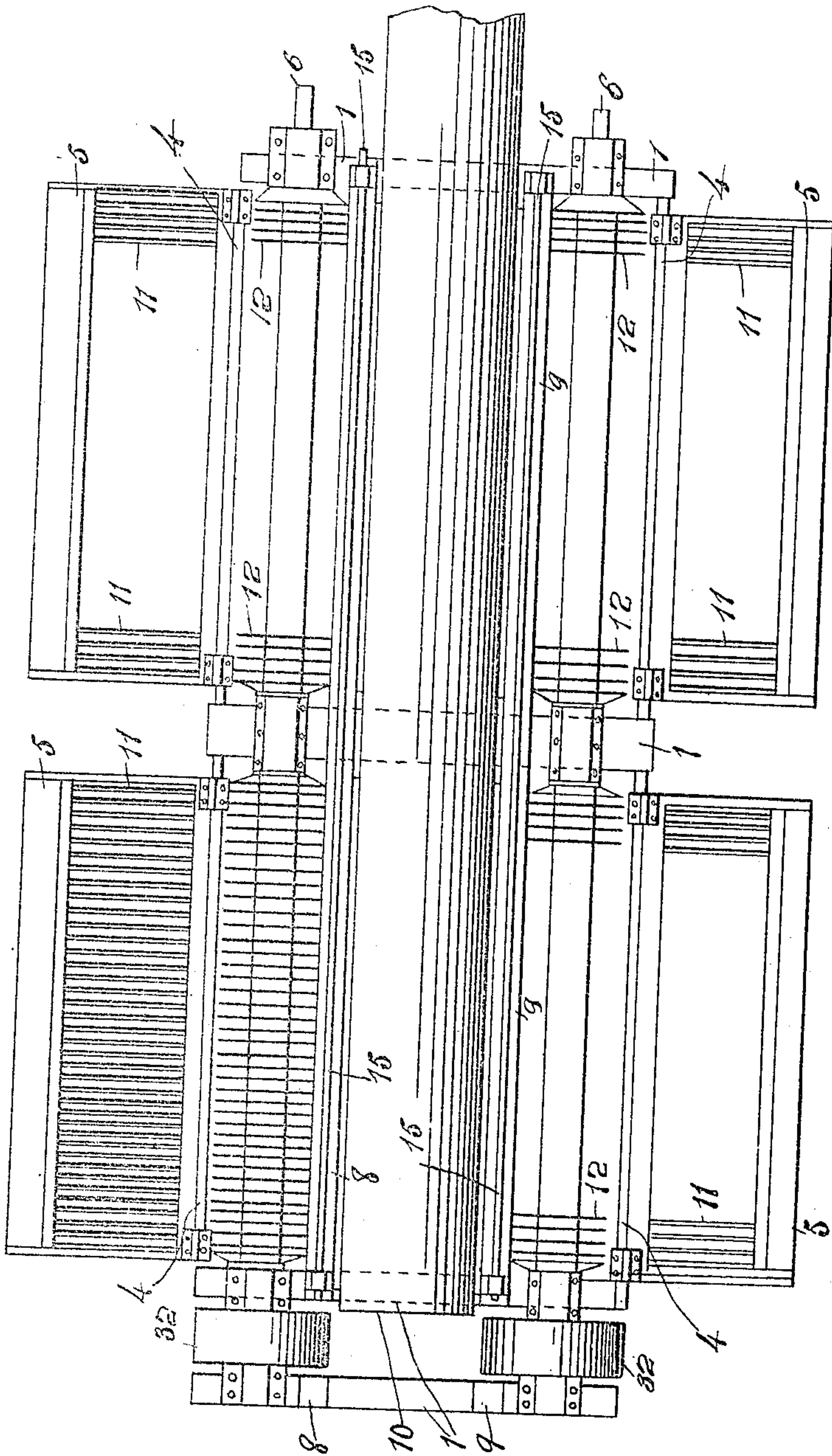
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3 SHEETS—SHEET 3.

Fig. 3.



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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. 887,487.

Specification of Letters Patent.

Patented May 12, 1908.

Application filed June 17, 1907. Serial No. 379,312.

To all whom it may concern:

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

This invention relates to cotton gins and the improved gins are partly disclosed in my pending application for Letters Patent for air-blast gins, filed November 12, 1906.

The object is to arrange a plurality of gins in as small space as possible and to make the manufacture of gins more economical and also to dispense with much gearing which is now used to drive gins.

The improved gins are particularly adapted for use with an air-blast for removing the lint from the teeth of the saws. The old brush drums are dispensed with and the gins are arranged on opposite sides of a common air-blast pipe and a common lint flue and one belt will drive the gins on opposite sides of the said pipes. Instead of a complete gin stand, of the type in common use, on each side of the air-blast pipe and the lint flue, one stand supports the gins on both sides of the air-blast pipe and the gin stand also supports the air-blast pipe and the lint flue and the seed conveyers. The gins are thus arranged in pairs and there may be a plurality of pairs of gins. Thus four gins will occupy little, if any, more space than two gins of the common type.

Other objects and advantages will be fully explained in the following description and the invention will be more particularly pointed out in the claims.

Reference is had to the accompanying drawings which form a part of this application and specification.

Figure 1 is a perspective view of four gins grouped together as contemplated under the improvements herein set forth, for clearness the air-blast pipe and the lint flue and the seed conveyers being omitted from this view. Fig. 2 is an end view of the same, showing all parts complete. Fig. 3 is a plan view of four gins with the gin breasts opened out, one gang of saws and ribs therefor being shown complete and only parts of the other gangs and breast ribs being shown. Fig. 4 is a vertical section of two gins, showing in detail the arrangement of the pipes and chutes and flues relative to the gang of saws of each gin, and showing the seed conveyers. Fig. 5

is a plan view of the air-blast pipe, showing the arrangement of the feeding chutes one chute being shown in section. Fig. 6 is a plan view of the lint flue and the lint chutes leading thereto.

Similar characters of reference are used to indicate the same parts throughout the several views.

The gins are provided with frame elements 1 which have legs 2 and 3 integral therewith. With this arrangement two more gins may be added to a plant by adding one frame element. The frames are provided with side bars 4 to which the gin breasts 5 are hinged. The gin saw shafts 6 are journaled in the frame elements 1. The frame elements 1 have upward extensions 7 and top beams 8 and 9 are secured to extensions 7. The air-blast pipe 10 is supported on frame elements 1 between the extensions 7. The gin breasts 5 are provided with the usual grating or ribs 11 and saws 12 which run between the ribs. The gin breasts 5 are hinged to the frame pieces 4 by hinges 13 and the breasts 5 rest against the beams 8 and 9. The breasts are provided with the usual antifriction revolving disks 14 mounted in the ends of the breast. The bars 11 extend between the saws 12. It frequently becomes necessary to lift the ribs from between the saws. Provision is made for lifting the breasts 5 which carry the ribs by levers which lift the breasts on each side of the air-blast pipe simultaneously. Rods 15 are mounted in suitable bearings on the beams 8 and 9. Levers 16 are rigidly mounted on the rods 15. Each lever would turn the rod on which it is mounted. Cam levers 17 are rigidly mounted on the rods 15. Link rods 18 are pivotally connected with the cam levers 17. Levers 19 are rigidly mounted on the rods 15 and bars 20 are pivotally connected with the arms 19 and with the gin breasts. With the levers thus connected a pull on either lever 16 will raise the gin breasts of the gins on opposite sides of the air-blast pipe. As shown in Fig. 3, the rods 15 may extend over any convenient number of gins.

Extending between the two gins of each pair of gins is an air-blast pipe 10. The pipe 10 is supported on the frame elements 1 and by hangers 21 which are attached to the chutes 22 and which extend up through bearings 23. The bearings 23 are attached to the beams 8 and 9 and the hangers 21 are sup-

ported in the bearings by nuts. The chutes extend laterally from and have communication with the air-blast pipe 10. The chutes 22 are air-feeding chutes and direct the air-blast from air-pipe 10 to a point in close proximity to the saws 12 and one side of each chute has a curved portion or lip extending beyond the other side for the purpose of turning the blast of air somewhat in the direction of the revolving saws. A deflecting strip 24 is attached to the short side of the air-feeding chute for the purpose of causing the air to strike the teeth of the revolving saws, the air being driven against the saws and partly between the saws. Each chute may be provided with a plurality of vertical partitions 25 which will serve to distribute the blast evenly on the saws 12, and which prevent the draft from striking the gang of saws lengthwise.

Below the air-blast pipe is located the lint flue 26 to receive the lint from all the gins in the battery. Lint chutes 27 receive the lint cotton as it is driven from the saws 12 and direct the same to the lint flue 26. The lint flue may be provided with a door or valve 28 and the blast pipe 10 may be provided with a door or valve 29. The course of the air-blast is through the air-blast pipe, through the air-feed chutes 22, against the saw teeth, driving the cotton therefrom into the lint chutes 27, and thence driving the lint on through the lint flue 26.

The saws of the gins on opposite sides of the air-blast pipe are driven by a single belt 30 by means of the pulleys 31 which are mounted on the shafts of the saws and by the idle pulley 32. The belt 30 may be driven by any suitable power.

Seed conveyers 33 run through and are supported by the legs 2 and 3. The seed conveyers are the spiral conveyers in common use. The shafts 34 of the seed conveyers are journaled in bearings 35 which are attached to legs 2 and 3. The outside 36 of the seed through 37 extends outwardly and upwardly to catch the seed which fall from the ribs 11 of the gin breast.

The operation will be understood from the above description. It is shown above how the frames for two gins are combined into one stand and how the gin stands of four gins are converted or combined into one gin stand. The four gins can be correctly defined as a quadruple gin. A series of gins are disposed on each side of an air-blast pipe and compressed air is directed against the saw teeth from a common air supply source, striking the gangs of saws tangentially. The gin breasts of all the gins can be operated by a single lever through the link bars from one gin breast to the other and to the common frame. The lint cotton from all the gins is delivered through a common lint flue which is supported by the frame described. In

order that there may not be too great strain on the journal bearings at the ends of the gins to which power is applied, it is advisable to extend the shafts 6 and provided an additional frame 1 for the bearings for the shafts 6, as shown in Fig. 3.

Having fully described my invention, what I claim as new and desire to secure by Letters Patent, is,—

1. A cotton gin having upright frames provided with supporting legs and upper extensions, side bars attached to said frames, upper beams attached to said extensions, an air-blast pipe carried by said frames between said upper extensions, gangs of gin saws journaled on the sides of said frames opposite each other, gin breasts hinged to said bars and resting against said upper beams, levers provided with link-bars operatively connected to gin breasts on opposite sides of the gin stand, air-feeding chutes connected with said air-blast pipe and directing blasts of air to the gins on each side of said air-blast pipe, and a lint flue provided with chutes to receive cotton from the gins on each side thereof.

2. A cotton gin plant for a plurality of gins having a series of upright frames provided with upper extensions on each side of each frame, a series of gangs of saws journaled on opposite sides of said frames, one gang of saws being opposite another gang of saws, an air-blast pipe supported on said frames between said extensions and between the oppositely disposed gins and having lateral chutes for directing air to the oppositely disposed saws, and a lint flue suspended on said frames between the oppositely disposed gins and provided with chutes for receiving cotton from said gins.

3. A cotton gin plant for a plurality of gins having a series of upright frame elements provided with upper extensions on each side of each frame element, a series of gangs of saws journaled on opposite sides of said frame elements, and an air-blast pipe supported on said frame elements between said extensions and provided with lateral air-feeding chutes for directing compressed air against the oppositely disposed saws.

4. A cotton gin plant for a plurality of gins having a series of upright frame elements constituting a single frame and each element being provided with upper extensions on each side thereof and perforated legs, a series of oppositely disposed gangs of saws journaled on each side of said frame, a common air-blast pipe supported on said frame elements between said extensions and provided with oppositely extending lateral feeding chutes for directing air under pressure to said saws, a lint flue suspended on said frame elements between said legs and provided with chutes leading from the oppositely disposed saws, and seed conveyers mounted in the perforations in said legs.

5. A cotton gin plant for a plurality of gins having a series of upright frames, side beams and top beams connecting said frames, gangs of oppositely disposed saws journaled on said frames, an air blast pipe mounted on said frame, gin breasts for said gangs of saws hinged to said side beams and resting against said top beams, rods provided with bearings mounted on said top beams, breast levers rigidly mounted on said rods, link bars pivotally connected to said breast levers and to said breasts, hand levers rigidly mounted on said rods, cam levers rigidly mounted on said rods, and link bars pivotally connected with said cam levers.

6. A cotton gin plant comprising a series of upright frame elements, each element having a journal bearing on each side thereof, a series of gangs of saws journaled in said bearings on the outer sides of said frame elements, side beams holding said elements in operative positions, said frame elements having provisions for holding an air blast pipe between the oppositely disposed gangs of saws, and an air blast pipe mounted in said frame elements and extending substantially between the oppositely disposed gangs of saws and provided with air chutes leading therefrom to each gang of saws.

7. A cotton gin plant having a frame, a series of gangs of saws mounted in said frame at the sides thereof and provided with pivot-

ed gin breasts, and means for moving all of said gin breasts simultaneously consisting of rods mounted on said frame, one rod for each series of gin breasts, provided with arms and links operatively connecting the said rods and gin breasts, a link and cams operatively connecting said rods, and a lever for rocking one of said rods.

8. A cotton gin plant having a frame, a series of gangs of saws mounted in said frame at the sides thereof, and means for stripping lint cotton from said saws consisting of an air blast pipe disposed between said series of gangs of saws and provided with lateral chutes leading to each gang of saws and each chute being provided with partitions to cause an even distribution of air to all saws of a gang of saws.

9. A cotton gin having a gang of saws, an air blast pipe for supplying a blast of air for stripping the lint cotton from the saws, an air chute leading from said air-blast pipe, and partitions in said chute to cause an even distribution of air to all the saws of the gang of saws.

In testimony whereof, I set my hand in the presence of two witnesses, this 10th day of June, 1907.

ROBERT B. LUMPKIN.

Witnesses:

A. L. JACKSON,
C. LUMPKIN.