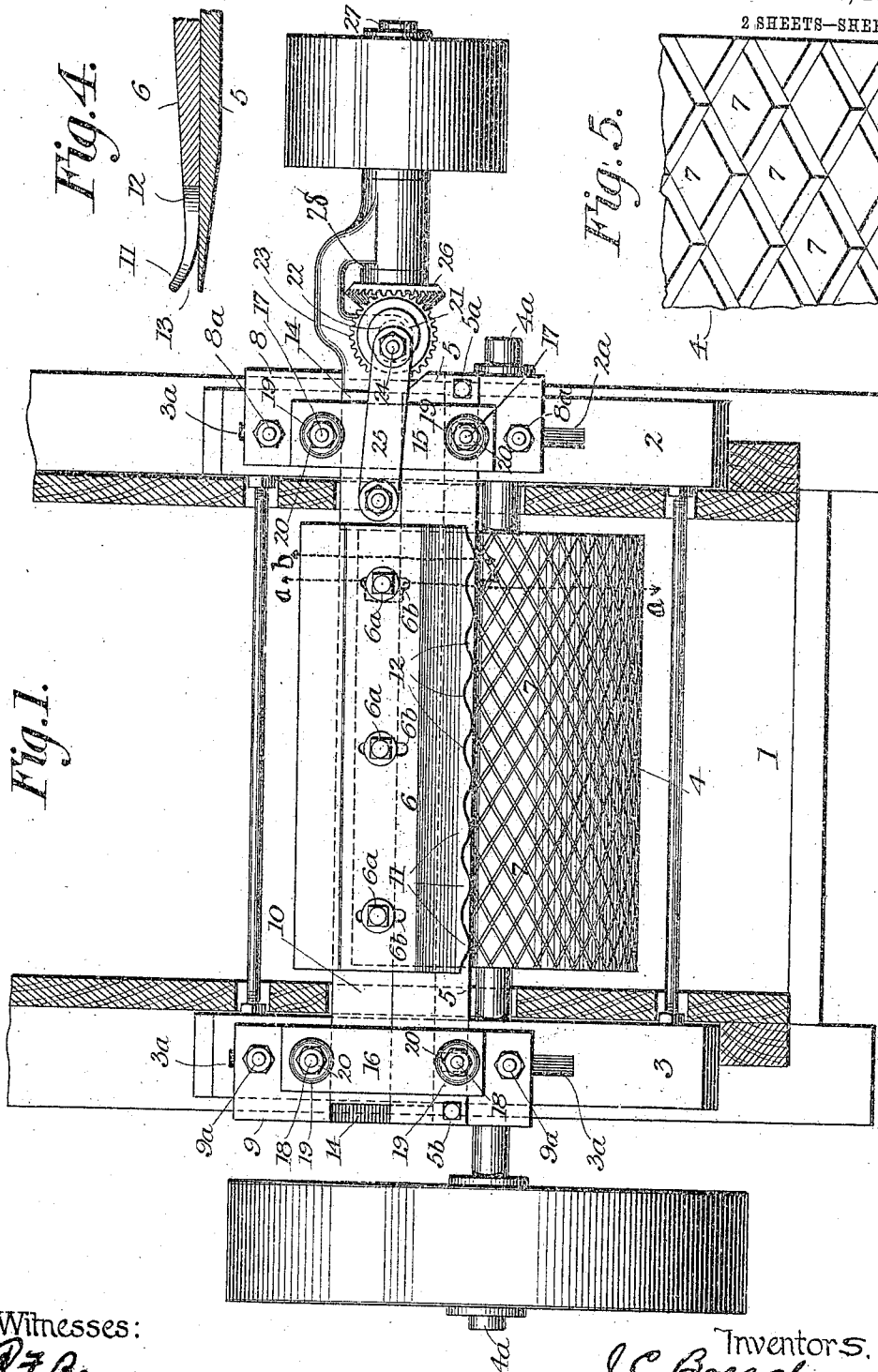


J. C. BOESCH & J. H. G. VON OVEN.
 J. H. H. VON OVEN, ADMINISTRATOR OF J. H. G. VON OVEN, DEC'D.
 COTTON GIN.
 APPLICATION FILED MAY 12, 1908.

948,810.

Patented Feb. 8, 1910.

2 SHEETS—SHEET 1.



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Fig. 2.

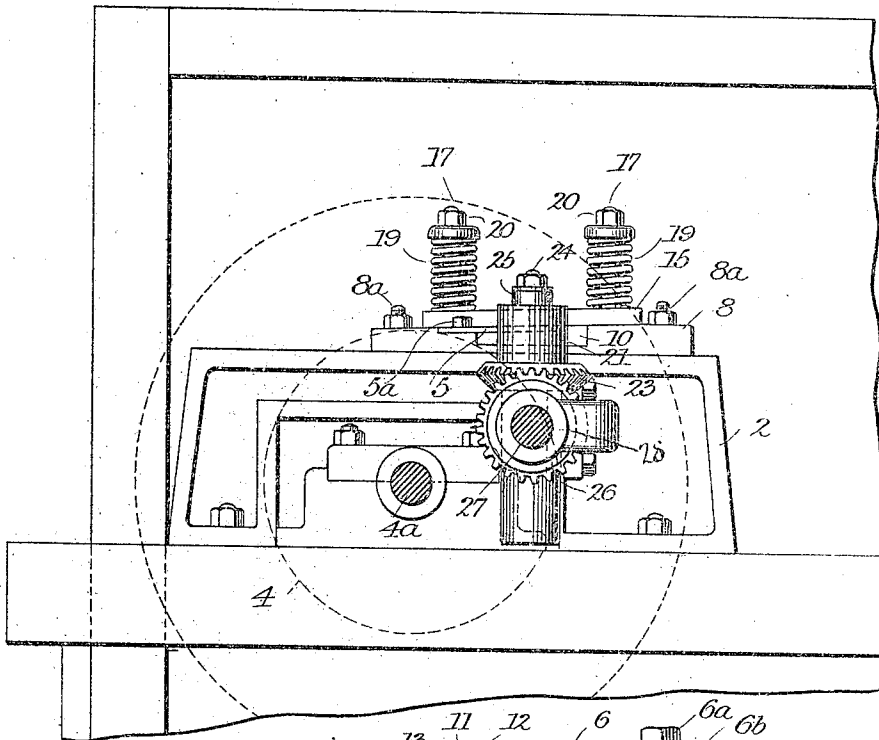
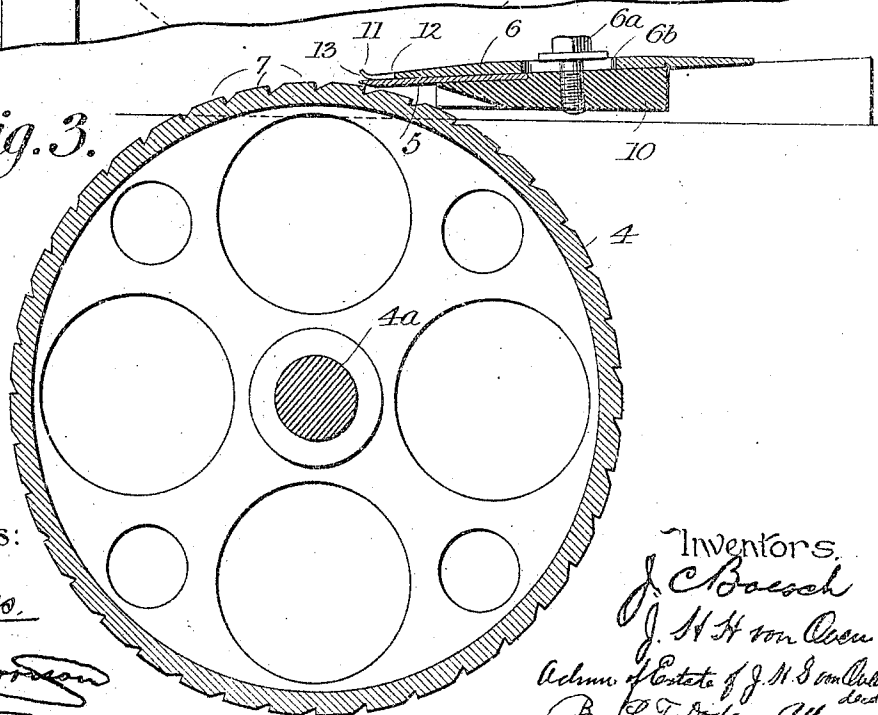


Fig. 3.



Witnesses:

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L. E. Johnson

Inventors:

J. C. Boesch

J. H. H. von Oven

Admin. of Estate of J. H. G. von Oven, dec'd.

By C. T. Dodge Atty

UNITED STATES PATENT OFFICE.

JOHN C. BOESCH, OF CHARLESTON, SOUTH CAROLINA, AND J. H. H. VON OVEN,
ADMINISTRATOR OF JOHN H. G. VON OVEN, DECEASED.

COTTON-GIN.

948,810.

Specification of Letters Patent.

Patented Feb. 8, 1910.

Application filed May 12, 1908. Serial No. 432,467.

To all whom it may concern:

Be it known that JOHN C. BOESCH, of Charleston, in the county of Charleston and State of South Carolina, and JOHN H. G. VON OVEN, have invented a new and useful Improvement in Cotton-Gins, of which the following is a specification.

This invention relates to cotton gins of the type in which a roller coöperates with a fixed doctor knife and a reciprocating distributor blade in effecting the separation of the lint from the seed.

The invention consists in various improved features of construction, having in view simplicity and compactness in construction, effectiveness and increased capacity in operation, and the separation of the lint with the staple of full length, and with a minimum amount of loss.

The invention consists also in the details of construction and combination of parts hereinafter described and claimed.

In the accompanying drawings:—Figure 1 is a top plan view of our improved machine. Fig. 2 is a side elevation of the same. Fig. 3 is a transverse vertical section on an enlarged scale on the line *a—*a** of Fig. 1. Fig. 4 is a transverse section on an enlarged scale on the line *b—*b** of Fig. 1. Fig. 5 is an enlarged fragmentary view in elevation of the rotary roller.

Referring to the drawings:—1 represents a frame comprising standards 2 and 3.

4 represents a rotary roller or drum mounted between said standards in suitable bearings.

5 represents a doctor knife fixed with reference to the roller and extending closely along the face of the same parallel with its axis of rotation; and 6 represents an endwise reciprocating distributor blade, lying closely against the face of the fixed doctor knife, the relative arrangement, construction and operation of these parts being such that the seed with the adhering lint, will be rolled around and shifted about by the reciprocating blade at the edge of the doctor knife, as the lint adhering to the surface of the roller is carried thereby beneath the knife, and the seed being held back by the knife, the separation of the same from the lint is effected.

The roller is preferably formed of metal

with its active surface or face roughened so as to take a hold on the lint, this roughening being preferably effected by forming in the surface, two sets of parallel grooves extending diagonally of the roller so as to intersect each other, thereby forming, throughout the face of the roller, diamond shaped prominences 7, which in connection with the grooves, has been found in practice to be very effective in causing the tenacious adherence of the lint. The adherence of the lint to the surface may be facilitated and increased by forming the forward sides of the diamond shaped prominences abrupt, and the rear sides sloping backward, the result being that these abrupt edges as they are carried forward toward the doctor knife, will engage with the lint in a tenacious and firm manner and carry the same with certainty beneath the doctor knife, as the seed shifted about by the distributor blade, is held back by the knife. The roller is fixed to a shaft 4^a, mounted in bearings sustained by the standards and receiving a rotary motion from any suitable source.

The doctor knife and distributor blade are preferably mounted at the top of the roller, being sustained at their ends by blocks 8 and 9, seated on the upper ends of the standards and secured thereto by bolts 8^a and 9^a, extending through the blocks and through fore and aft slots 2^a and 3^a in the standards, whereby the doctor knife and distributor blade may be adjusted in unison with reference to the face of the roller transversely of the axis of the same, and without disturbing their relations to each other. The doctor knife is firmly bolted at its ends to the two blocks 8 and 9, by means of bolts 5^a and 5^b, so that it occupies a fixed position with reference to the face of the roller, the edge of the blade being separated from the surface of the roller a distance sufficient only to permit of the passage of the separated lint.

The distributor blade is carried by an endwise reciprocating slide 10, recessed at its front on its upper side to receive the doctor knife, and extending at its rear flush with the upper face of the knife, so that the blade supported on the rear portion of the slide will rest closely and flatly against the

upper side of the knife. The blade is fastened to the slide in such manner that it may be adjusted transversely in relation thereto, whereby the relation of the forward active edge of said blade to the edge of the knife and the surface of the roller, may be changed as the varying conditions encountered in practice may demand. The connection of the blade whereby this adjustment is possible is conveniently effected by means of bolts 6^a, extending through transverse slots 6^b in the blade and screwed into the underlying side. The active edge of the distributor blade presents a wavy sinuous outline forming a series of curved teeth 11 and alternate similarly formed depressions or recesses 12, the ends of the teeth being turned slightly upward, as shown more particularly in Fig. 4, forming pockets 13 between the upper surface of the knife and lower face of the teeth, in which pockets the seed will be temporarily held as the blade reciprocates endwise, thereby greatly facilitating the separation of the lint therefrom.

At its ends the slide 10 extends through and is guided in recesses 14 formed in the upper sides of the blocks 8 and 9, and in order that the slide may be confined in the guides and the blade held closely against the doctor knife and its endwise movements rendered smooth and even, we propose to apply to the slide a yielding pressure or tension. This is conveniently effected by means of two tension plates or straps 15 and 16, which are seated on the blocks 8 and 9 over and in contact with the ends of the slide, these plates being formed in their ends with holes passed over bolts 17 and 18 extending upwardly through the blocks. The bolts are encircled by spiral tension springs 19 confined by nuts 20, whereby the tension of the springs may be adjusted and the degree of pressure to which the slide is subjected, varied.

The slide with its distributor blade may be reciprocated in any suitable manner, but we prefer to adopt the construction shown in the drawings, which in practice has been found to be simple and effective. Here it will be seen that there is mounted in a bearing 21, sustained at the outer side of the standard 2, a vertical shaft 22 having on its lower end a bevel gear 23, above which the shaft has fixed to it a wrist pin 24, connected by a link 25 with the slide, said link being pivoted on said bearing 21 eccentrically to the center of the shaft 22, whereby rotation of said shaft will effect a sliding actuation of said link 25 which, being pivoted to the slide 10, effects a reciprocation of said slide 10 and, thus, of distributor plate. The bevel gear 23 is engaged by a vertically arranged bevel pinion 26 on the inner end of a horizontal shaft 27 mounted in a bearing 28 sustained by an arm projecting outwardly

from the standard, the shaft having imparted to it a rotary motion from any suitable source.

In the operation of the machine, motion being imparted to the two driving shafts, the roller is rotated in a clockwise direction and the distributor blade is rapidly reciprocated endwise, such movement being imparted to it by reason of its connection with the slide which is given movement through the link 25 pivoted eccentrically upon the bearing 21, as already explained. The seed laden cotton being fed to the roller by appropriate means (not shown), the lint adheres to the roughened surface of the roller, and as the seed brings up against the edge of the doctor knife it is brought by said knife into position to be operated upon by the blade, and the latter by its reciprocating movements agitates the seed, shifts, turns and twists them about, while at the same time the roller draws the lint from the seed and carries it beneath the doctor knife. The seed is held back by the knife and is lodged in the pockets between the upturned teeth of the blade and the knife, until the lint is thoroughly separated therefrom, and as fresh seed laden cotton is brought up to be acted on by the blade, the separated seed is pushed onto the surface of the blade, from which it may be collected and conveyed away in any suitable manner.

It will be understood that various changes and modifications may be made in the details of our improved mechanism without departing from the limits of the invention, provided the action and operation is substantially as described above.

Having thus described our invention, what we claim is:—

1. In a cotton gin, the combination with a rotary drum, of a normally stationary doctor knife, and an endwise-reciprocating distributor blade provided on its active edge with teeth out-turned and extending away from the adjacent face of the doctor knife to provide seed-holding pockets.

2. In a cotton gin, the combination with a rotary drum provided with a lint-catching and retaining surface, and a fixed doctor knife, of an endwise reciprocating distributor blade lying flatly against the doctor knife and provided on its active edge with teeth out-turned and extending away from the adjacent face of the doctor knife, whereby pockets are formed between the teeth and the knife.

3. In a cotton gin, the combination of a rotary drum, a doctor knife normally stationary with reference to the drum, and an endwise-reciprocating distributor blade movable on and relative to the knife and the drum, and having teeth out-turned and extending away from the adjacent face of the doctor knife to provide temporary seed-

holding pockets, and means for adjusting the blade and knife transversely with reference to the drum.

4. In a cotton gin, the combination of a rotary drum, a doctor knife, an endwise reciprocating distributor blade, means for adjusting the blade and knife in unison transversely of the drum, and means for adjusting the distributor blade transversely with reference to the knife.

5. In a cotton gin, the combination of a frame, a rotary drum mounted therein and provided with a lint-catching and retaining surface, supporting blocks adjustable on the frame transversely of the drum, a doctor knife fixed to said blocks, and an endwise reciprocating distributor-blade mounted in guides in the blocks, provided with outturned curved teeth, and shiftable transversely over said lint-catching and retaining surface, the seed being positioned by said outturned curved teeth with reference to, and while the lint is being taken up by, said surface.

6. In a cotton gin, the combination of a frame, a rotary drum mounted thereon and having its surface formed with two sets of parallel grooves extending diagonally with reference to the drum and intersecting each other, thereby forming prominences, a normally stationary doctor knife, and an endwise-reciprocating distributor blade provided on its active edge with teeth outturned and extending away from the adjacent face of the doctor knife to provide seed-holding

pockets, the reciprocating movement of the blade being with reference to the said grooved surface of the drum.

7. In a cotton gin, the combination with a rotary drum provided with a lint-catching and retaining surface, of an endwise reciprocating distributor blade provided with teeth upturned relative to and curving away from the drum-surface to provide temporary seed-holding pockets, and a doctor-knife underlying the blade to engage the seed and position it for operation by the blade.

8. In a cotton gin, the combination with a rotary drum provided with a lint-catching and retaining surface, of an endwise reciprocating distributor blade provided with teeth upturned relative to and curving away from the drum-surface to provide temporary seed-holding pockets, a doctor-knife underlying the knife to engage the seed and position it for operation by the blade, and means for reciprocating said blade relative to said drum surface.

In testimony whereof we hereunto set our hands this 13th day of April 1908, in the presence of two attesting witnesses.

JOHN C. BOESCH.

J. H. H. VON OVEN,

Administrator of John H. G. Von Oven, deceased.

Witnesses:

F. W. JEFFCOAT,

A. J. COLEMAN.