

No. 644,276.

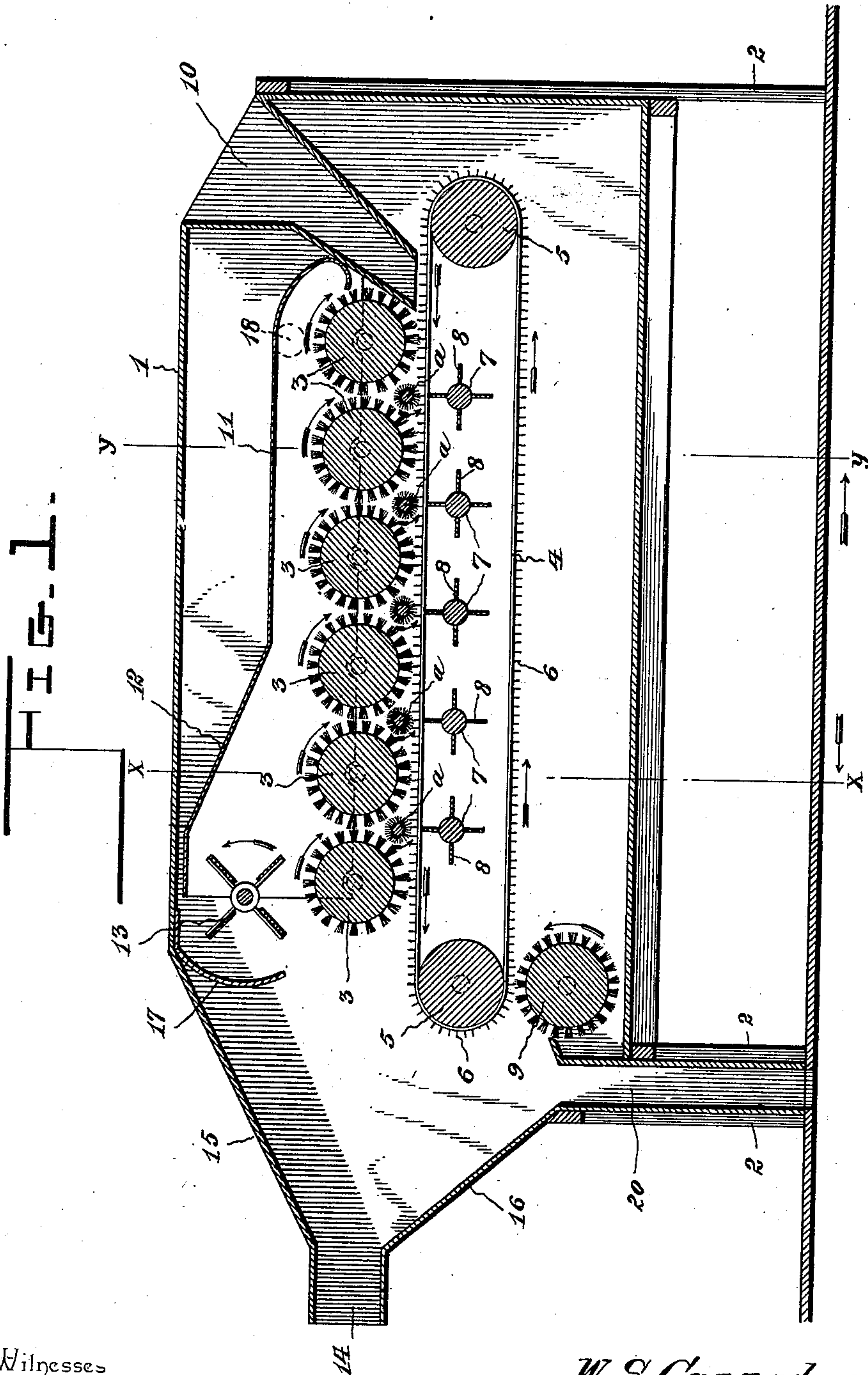
Patented Feb. 27, 1900.

W. S. CANNADAY.
DELINTING MACHINE.

(Application filed July 6, 1899.)

(No Model.)

3 Sheets—Sheet 1.



Witnesses

Am F. Daferwald

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By *his* Attorneys,

W. S. Cannaday, Inventor

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No. 644,276.

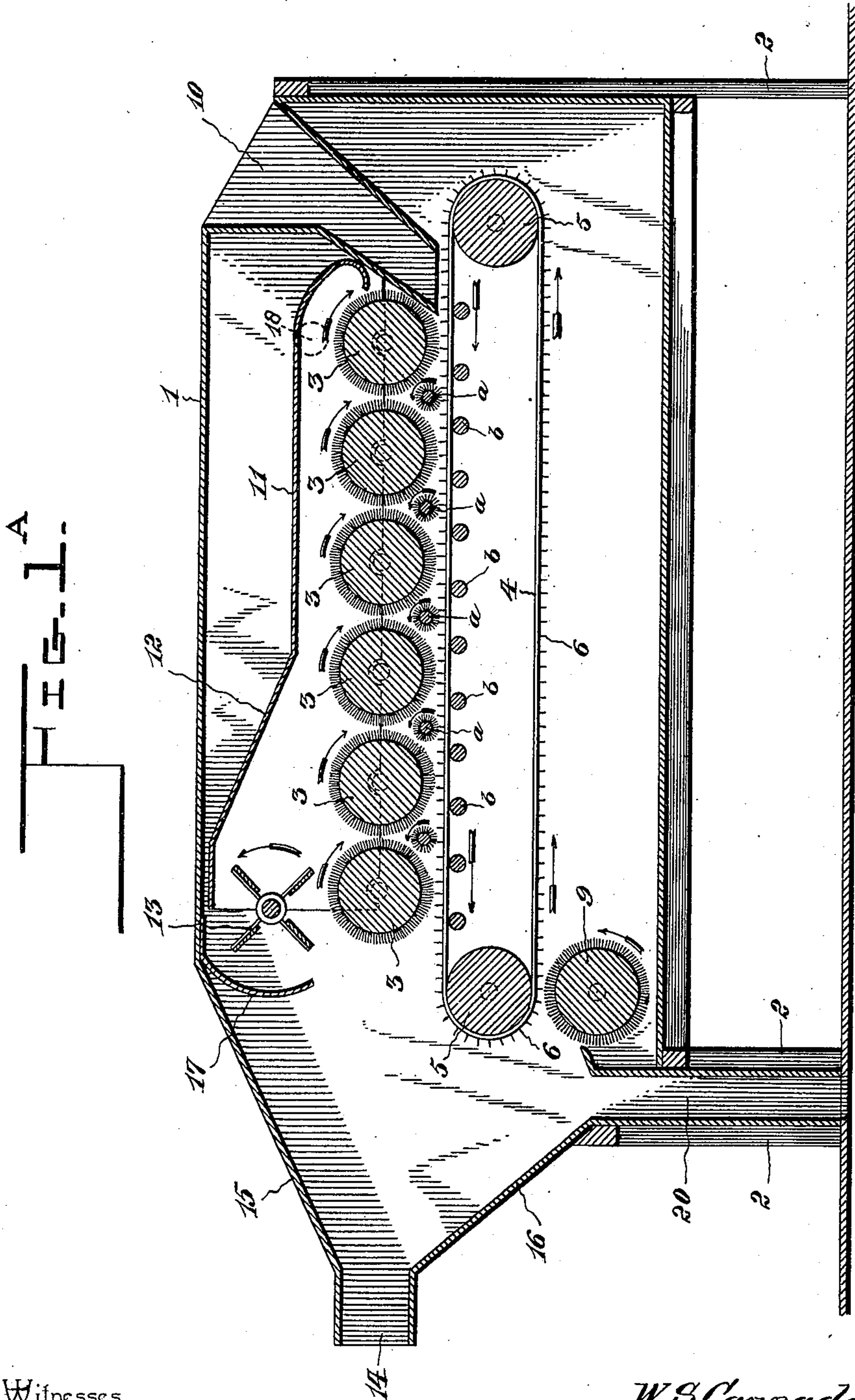
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(Application filed July 6, 1899.)

(No Model.)

3 Sheets—Sheet 2.



Witnesses

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3 Sheets—Sheet 3.

FIG-3-

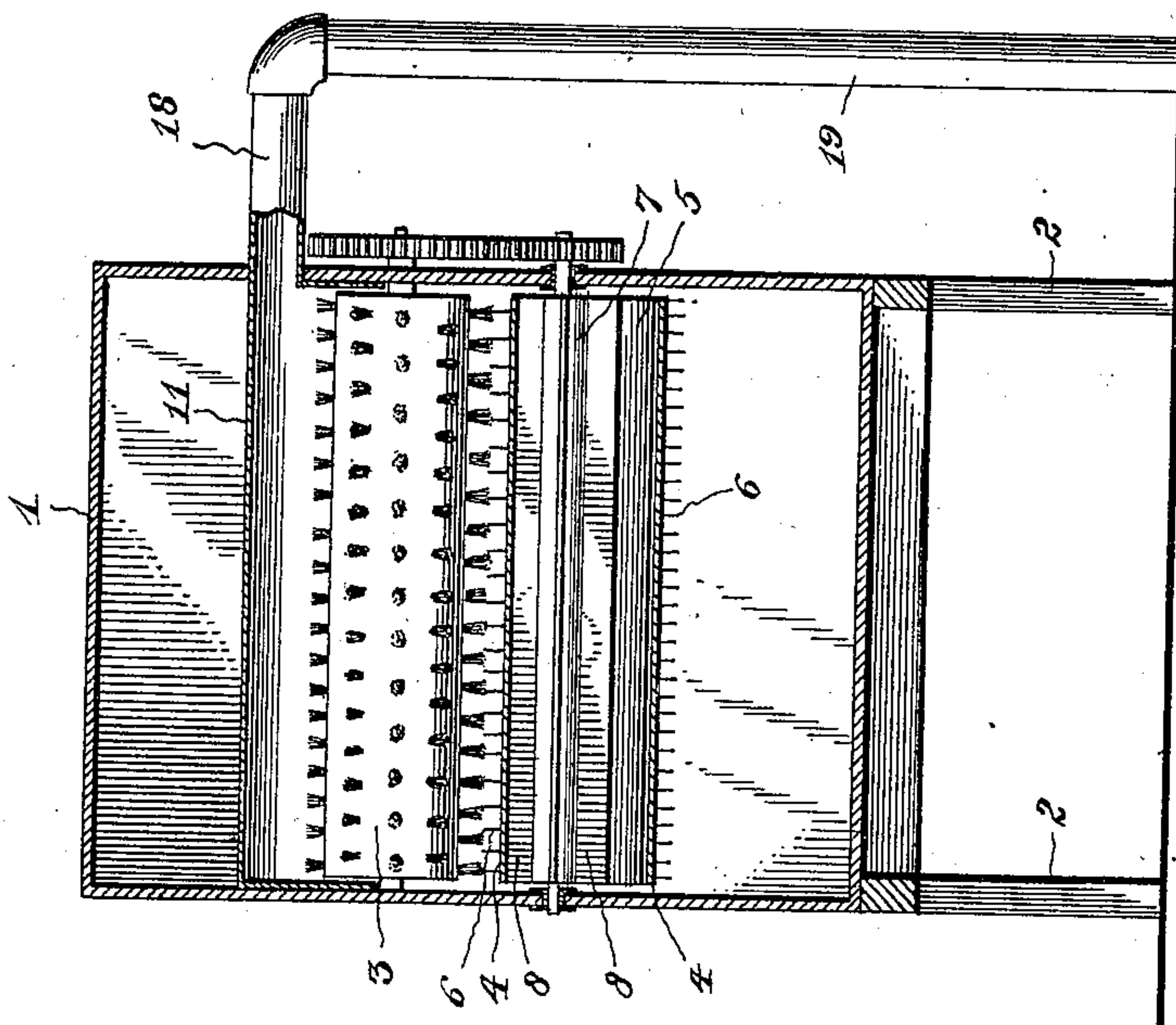
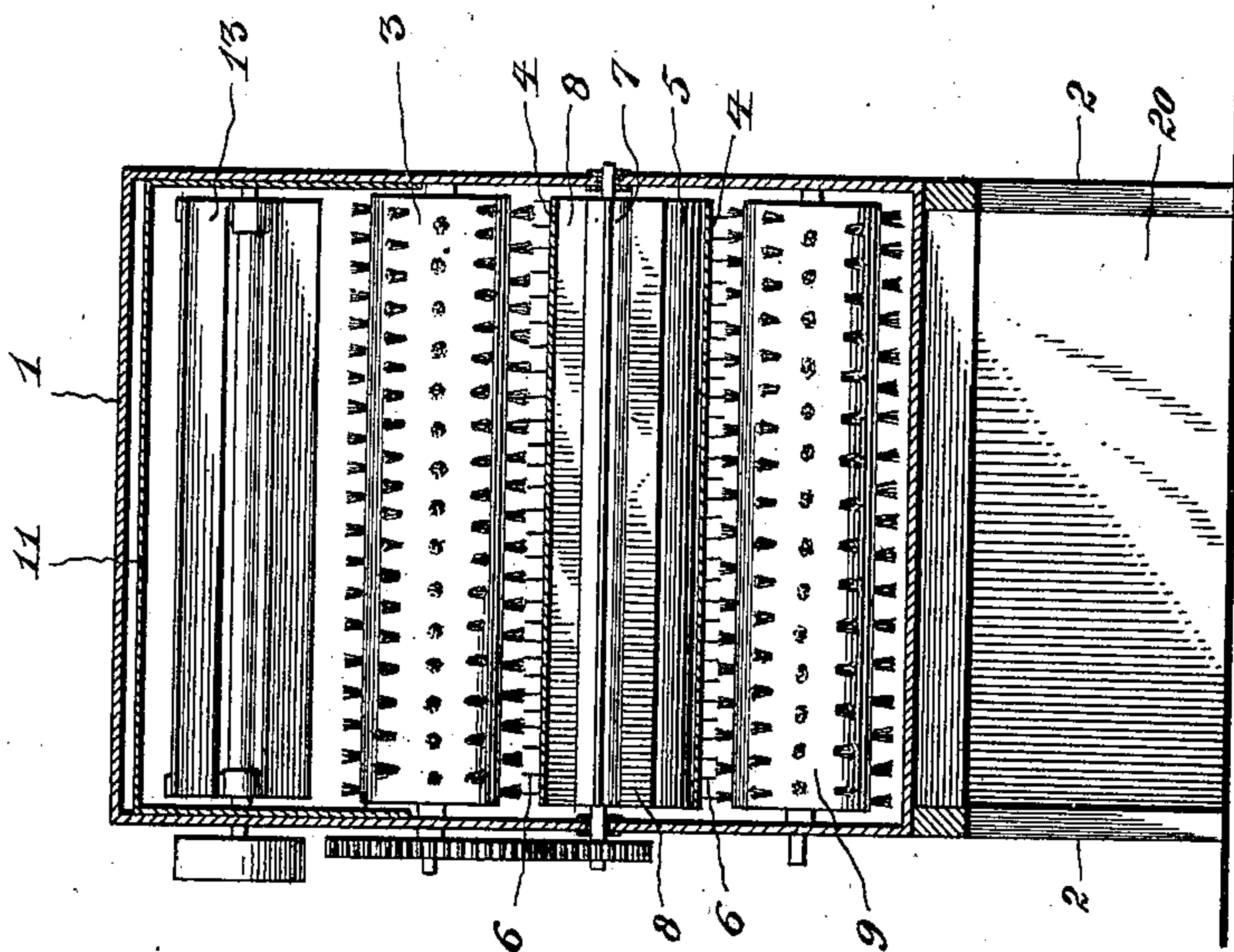


FIG-2-



Witnesses

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UNITED STATES PATENT OFFICE.

WINFIELD S. CANNADAY, OF FLORENCE, ALABAMA, ASSIGNOR OF ONE-HALF TO JOHN KASMEIER.

DELINTING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 644,276, dated February 27, 1900.

Application filed July 6, 1899. Serial No. 722,949. (No model.)

To all whom it may concern:

Be it known that I, WINFIELD S. CANNADAY, a citizen of the United States, residing at Florence, in the county of Lauderdale and State of Alabama, have invented a new and useful Delinting-Machine, of which the following is a specification.

This invention relates to machines for treating cotton-seed, and particularly to that class of machines known as "delinters," and has for one object to provide improved means for separating the lint from the seed, whereby the latter are not broken or otherwise damaged and the lint is collected and conveyed from the machine.

A further object is to provide improved means for agitating the seed, so as to present all sides thereof to the scouring or abrasive surfaces of the device and also to maintain the latter in their proper operative relation.

To these ends the present invention consists in the combination and arrangement of parts, which will be hereinafter more fully described, shown in the accompanying drawings, and particularly pointed out in the appended claims, it being understood that changes in the form, proportion, size, and the minor details of construction may be made within the scope of the appended claims without departing from the spirit or sacrificing any of the advantages of the present invention.

In the drawings, Figure 1 is a longitudinal sectional view of the improved delinting-machine. Fig. 1^a is a longitudinal sectional view of a modified form of the machine. Fig. 2 is a transverse sectional view taken on the line *xx* of Fig. 1. Fig. 3 is a similar view taken on the line *yy* of Fig. 1.

Corresponding parts in the several figures of the drawings are designated by like characters of reference.

Referring to the accompanying drawings, 1 designates the frame of the machine, which is supported at its four corners upon suitable leg-standards 2.

Located within the body of the machine and aligned longitudinally thereof is a plurality of horizontal transverse rotary brushes 3, which series of brushes extends nearly the entire length of the machine. These brushes are preferably formed of wire and all revolve in

the same direction, as indicated by the arrows, and are arranged comparatively close together, so that the seed may not be thrown upward between and above the rollers.

Arranged beneath the longitudinal series of rotary brushes is an endless carrier or belt 4, which travels over suitable idle rollers 5, which are located beneath and beyond the opposite ends of the series of brushes. This belt is provided upon its exterior surface with a plurality of sharp spurs 6, which extend throughout the entire length and breadth of the belt and are adapted to engage with the teeth or bristles of the rotary brushes 3. It will of course be understood that the rotary brushes extend from side to side of the frame of the machine, and the endless belt is of a width equal to the length of the respective brushes, so that there is no open space at opposite longitudinal sides of the belt through which the seed might accidentally drop, and thereby escape the delinting action of the machine.

To maintain the upper section of the endless belt in normal contact with the lower sides of the rotary brushes, and thereby prevent sagging of the belt, there is provided a plurality of transverse rotary beaters 7, which have their opposite ends journaled in opposite sides of the frame of the machine, each beater being located between a pair of brushes 3, and the radial blades 8 are adapted to strike the under side of the upper section of the belt, thereby preventing the same from sagging and also agitating the same for a purpose as will hereinafter appear. A suitable cleaning-brush 9 is arranged at the discharge end of the endless belt and in contact with the lower section thereof, whereby any lint or seed which may cling to the belt will be effectively cleaned therefrom, so that the belt may return to the scouring-brushes in a perfectly-clean condition.

Located immediately above the belt 4 is a series of small wire brushes *a*, which are arranged between the outer brushes 3 and the upper side of the belt. Each of these smaller brushes is arranged between the contiguous sides of adjacent brushes 3 and the upper section of the belt 4 and in vertical alinement with the adjacent beater 7 and is adapted

to turn in a direction opposite to that of the adjacent portion of the belt, so that said smaller brushes may pick up the seed from the belt and throw them against the adjacent larger brushes, thereby more effectively separating the lint from the seeds.

Provided at one end of the machine, opposite the cleaning-brush 9, is a feed-hopper 10, which is adapted to feed cotton-seed directly between the forward side of the adjacent scouring-brush and the upper side of the upper section of the endless belt 4, so that the seed may be immediately taken up by the rotary brush and the belt and conveyed along therebetween, it being understood that the upper section of the belt travels in the same direction as the lower side of the brushes or in a direction longitudinally away from the feed-hopper.

An imperforate casing or cover 11 is fitted over the upper sides of the rotary brushes 3, said casing extending over the entire length and breadth of the series of brushes and is open throughout its entire length and embraces or houses the brushes. As best indicated in Fig. 1, the end of the casing or covering opposite the feed-hopper 10 is enlarged or flared upwardly, as at 12, and mounted in the open outer end thereof is a suitable rotary fan or blower 13, which is adapted to turn in the direction shown by the arrow, and thereby draws air inwardly through the inlet-opening 14, provided in the adjacent end of the machine, and also creates a draft or current of air above the rotary brushes and forwardly toward the feed-hopper. The upper and lower sides 15 and 16, respectively, of the air-inlet-opening end of the machine are convergently inclined, so as to provide the contracted opening 14, and pendent from the upper side 15 is a bowed shield 17, located immediately in advance of the fan or blower 13, so that the air has access to the fan at the lower side only thereof, and the current of air is prevented from being discharged rearwardly over the top of the fan, but is compelled to travel forward through the air-chute provided by the cover or casing 11. At the forward end of the casing and directly over the forward rotary brush there is provided a transverse branch pipe 18, which is in communication with the casing 11 and is provided at its outer end with a pendent discharge pipe or passage 19, which is located exteriorly of the frame of the machine.

In the operation of the machine the cotton-seed is fed into the hopper 10 and is discharged therefrom onto the upper side of the upper section of the endless belt 4 and adjacent to the first of the series of rotary brushes 3. As the lower portion of said brushes and the adjacent portion of the endless belt both travel in the same direction, the seed will be carried between the contiguous surfaces of the belt and the brushes, whereby said seed is subjected to the scouring action of the

bristles of the brushes and the spurs of the belt, whereby the lint will be separated from the seeds. By reason of the rotary beaters 7 engaging the belt at points between the branches said belt is agitated, and likewise the seed carried thereby, so that the latter is caused to present all sides thereof to the scouring action of the brushes and the belt, whereby the lint is effectively separated from the seed. Thus the seed is carried along beneath the several brushes and is successively treated by the latter until it emerges from beneath the last brush and is discharged in a clean state over the rear idle roller 5 and is thence dropped through a suitable discharge-passage 20. The comparatively-light lint which is separated from the seed is naturally directed upward by the rotary movement of the brushes, and the current of air created in the casing 11 by means of the rotary fan or blower 13 collects said lint within the casing and conveys the same forward to the transverse branch passage 18 and is discharged therethrough to the downwardly-extending pipe or passage 19, which carries the lint to any suitable point, where the same is collected and packed in any suitable or well-known manner.

In some instances it may be desirable to dispense with the beaters 7, so as not to agitate the belt 4, and to provide for such an instance I employ a series of rollers *b*, journaled in opposite sides of the frame of the machine and located contiguous to the under side of the upper section of the belt, so as to prevent the latter from sagging, and said rollers revolve in the same direction as the belt, it being understood that the remaining parts of the machine remain as hereinbefore described.

What I claim is—

1. In a cotton-seed delinter, the combination with a series of rotary scouring-brushes revolving in the same direction, of an endless belt or carrier located beneath said brushes and in contact with the lower sides thereof, and provided with spurs upon its outer surface, means for moving the contiguous portions of the scouring-brushes and the belt in the same direction, to convey the seed through the machine, and means for directing a current of air over the top of the scouring-brushes, substantially as and for the purpose set forth.

2. In a cotton-seed delinter, the combination with a series of rotary scouring-brushes, of an endless carrier or belt located below the brushes, beaters located between the upper and lower sections of the endless carrier or belt and adapted to agitate the same, and means for directing a current of air over the top of the scouring-brushes, substantially as and for the purpose set forth.

3. In a cotton-seed delinter, the combination with a series of rotary scouring-brushes, of an endless belt or carrier located beneath

the brushes and in contact with the lower sides thereof, rotary beaters located between the upper and lower sections of the carrier or belt, and in engagement with one of said sections, each beater being arranged between the pairs of adjacent brushes, and means for directing a current of air over the top of the brushes, substantially as and for the purpose set forth.

10 4. In a cotton-seed delinter, the combination with a series of scouring-brushes, and a carrier cooperating with said brushes and adapted to discharge the cleaned seed at one end of the machine, of a casing or housing fitted over and embracing the upper sides of the brushes, a fan or blower provided at one end of the casing or housing adjacent to the discharge end of the machine, a transverse branch or passage communicating with the opposite end of the casing or housing, and a discharge-passage leading from the outer end of the transverse branch, whereby the cleaned seed is discharged at one end of the machine, and the lint at the opposite end thereof, substantially in the manner shown and described.

25 5. In a cotton-seed delinter, the combination with a frame having a feed-hopper at one upper outer end, and a discharge-passage at the opposite lower outer end thereof, of a horizontal series of transverse rotary scouring-brushes located intermediate of the feed and discharge ends of the frame, an endless carrier or belt located below the brushes, rotary beaters arranged between the upper and lower sections of the carrier or belt and in engagement with the under side of the upper section thereof, a casing or housing located above the scouring-brushes and embracing the same, a rotary fan or blower located at one end of the casing and adjacent to the discharge end of the frame, a transverse branch extending from the opposite end of the casing, and a discharge-passage in communication with the

outer end of said branch, substantially as shown and described.

45 6. In a cotton-seed delinter, the combination with a series of rotary scouring-brushes, of an endless belt or carrier located beneath said brushes and in contact therewith, smaller rotary brushes located intermediate of adjacent scouring-brushes and the belt, and means for directing a current of air over the top of the scouring-brushes, substantially as shown and described.

55 7. In a cotton-seed delinter, the combination with a series of rotary scouring-brushes, of an endless belt or carrier located beneath the brushes and in contact therewith, rotary supports for the upper section of the belt or carrier, smaller rotary brushes located intermediate of adjacent scouring-brushes and the upper section of the belt or carrier, and means for directing a current of air over the top of the scouring-brushes, substantially as and for the purpose set forth.

65 8. In a cotton-seed delinter, the combination with a series of rotary scouring-brushes, of an endless belt or carrier located beneath the brushes and in contact therewith, rotary beaters located between the upper and lower sections of the endless carrier or belt, supporting and agitating the upper section of the latter, smaller rotary brushes located intermediate of the adjacent scouring-brushes and the upper section of the belt or carrier, and means for directing a current of air over the top of the scouring-brushes, substantially as and for the purpose set forth.

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

WINFIELD S. CANNADAY.

Witnesses:

G. H. DUDLEY,
W. B. MCCLURE.