

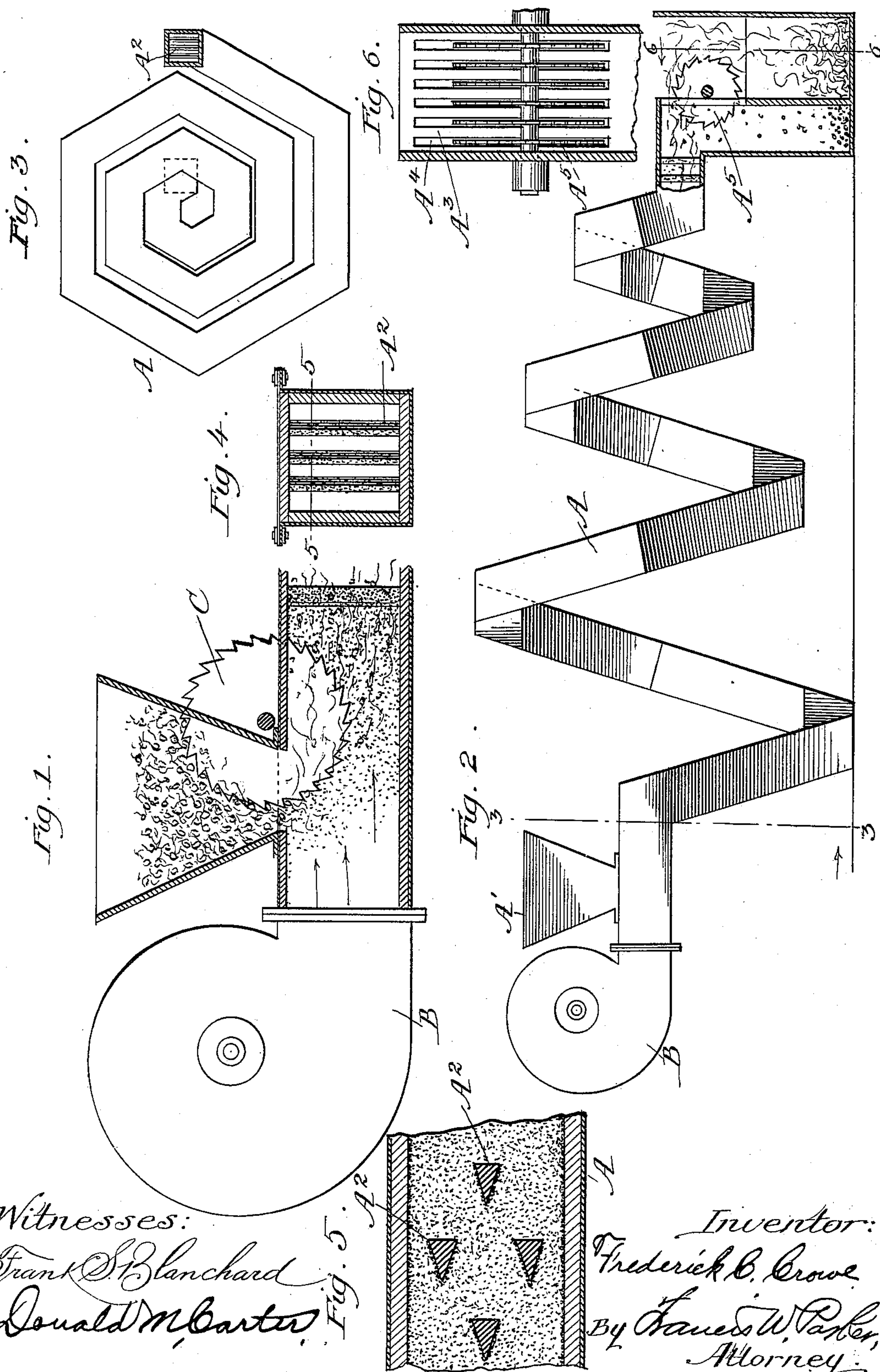
No. 618,785.

Patented Jan. 31, 1899.

F. C. CROWE.
COTTON SEED CLEANER.

(Application filed May 12, 1897.)

(No Model.)



Witnesses:
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UNITED STATES PATENT OFFICE.

FREDERICK C. CROWE, OF CHICAGO HEIGHTS, ILLINOIS, ASSIGNOR OF
ONE-THIRD TO ANDREW J. J. MILLER, OF SAME PLACE.

COTTON-SEED CLEANER.

SPECIFICATION forming part of Letters Patent No. 618,785, dated January 31, 1899.

Application filed May 12, 1897. Serial No. 636,145. (No model.)

To all whom it may concern:

Be it known that I, FREDERICK C. CROWE, a citizen of the United States, residing at Chicago Heights, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Cotton-Seed Cleaners, of which the following is a specification.

My invention relates to devices for separating the seeds from the fiber of cotton, and has for its object to provide a new and improved device for this purpose.

My invention is illustrated in the accompanying drawings, wherein—

Figure 1 is a view in part section, showing the hopper through which the material is fed into the device and the parts associated therewith. Fig. 2 is a side elevation of a device embodying my invention. Fig. 3 is a section on line 3 3, Fig. 1. Fig. 4 is an enlarged cross-section of the passage-way through which the material is forced. Fig. 5 is a section on line 5 5, Fig. 4. Fig. 6 is a view of the discharging end of the device.

Like letters refer to like parts throughout the several figures.

I have illustrated my invention in the accompanying drawings diagrammatically, as it were, in order to make its application clear and have shown a simple construction for this purpose. It is of course evident that I may greatly vary the form, construction, and arrangement of the several parts without in any manner departing from the spirit of my invention, and I wish it to be understood that I do not limit myself in any manner to the construction herein shown and described.

Referring now to the drawings, I provide a deviating or tortuous passage-way A, through which the material is forced—as, for example, by means of a blast of air or the like. This blast of air may be obtained from any source and, as illustrated in the drawings, I have shown a rotating fan B, placed at the end of the passage-way for supplying the blast of air. A hopper A' or some suitable device is placed over an opening in the passage-way A and is so constructed that the material may be fed into such passage-way. The cotton-seed inclosed in the fiber are placed in this hopper and some suitable feeding device is associated therewith, so that they may be

forced down into the passage-way A. This feeding device may be of any suitable construction, and, as shown in the drawings, consists of a series of saws C, mounted in any suitable manner, so that they project into the hopper and engage the material therein. The teeth of these saws are so shaped that they engage the material in the hopper and force it down into the passage-way. The material is then disconnected from the teeth by the blast of air. This material, which in the present instance is the cotton-seed inclosed in the fiber, is then forced through a tortuous passage-way A by the blast of air. This passage-way is provided with a series of wedge-shaped pieces A², distributed so as to engage the cotton-seed as they pass there-through. These wedge-shaped pieces may be disposed in any desirable manner. As illustrated in Fig. 5, they are “staggered” and so positioned as to change the direction of motion of the cotton-seed passing through the passage-way. These wedge-shaped pieces have the points facing in the direction from which the blast of air is obtained and are preferably provided with roughened surfaces, so as to engage the fiber on the cotton-seed and remove it, thereby separating the seed from the fiber. The sides of the passage-way A are also roughened for that purpose. These rough surfaces may be provided in any desirable manner—as, for example, by attaching powdered emery or the like to the several parts. I of course do not limit myself to any particular means for producing these rough surfaces. The passage-way A is made tortuous and is preferably of such length that the seed and fiber are separated before they reach the end of the passage-way. At the end of the passage-way I provide an opening A³, having a series of bars A⁴ extending thereacross, the spaces between the bars being too small to allow the seeds to be forced therethrough. As the separated seeds and fiber strike these bars the seeds fall downwardly into some suitable receptacle and the fiber remains in contact with the bars on account of the blast of air passing therethrough. I provide some suitable removing device for removing the cotton fiber from the end of the tube. This removing device may be of any suitable con-

struction and, as shown in the drawings, consists of a series of saws A⁵, mounted in proximity to the end of the tube and passing through the spaces between the bars, so as to engage the cotton fiber and remove it from the end of the tube. The fiber is then disengaged from the saw by the air-blast and falls into some suitable receptacle.

The use and operation of my invention are as follows: The cotton-seed inclosed in the fiber are placed in the hopper A' and are forced into the passage-way A by means of the saws C. They are then forced through the tortuous passage-way A by the blast of air and are thrown from side to side by means of the wedge-shaped pieces and the sides of the passage-way, the roughened surfaces on the passage-way and the wedge-shaped pieces tearing the fiber from the seeds. When the separated seeds and fiber reach the end of the passage-way, the fiber is removed and the seeds are deposited in a suitable receptacle free from the fiber in which they were formerly inclosed.

It will therefore be seen that I have here a simple device by which the seeds and fiber of the cotton may be easily and quickly separated.

The effect of the tortuous passage and the staggered projections, one or both of them, and the effect of devices of this general character are such as to impart to the seed a rotary motion, so to speak, thus insuring the engagement of its surface at a large number of points with the projections in the passage-way.

By forming the tortuous passage-way with a series of abrupt angles or turns therein, as described, the seeds are given a positive rotation at such angles. In other words, these seeds if sent through a regular spiral will have given them a certain rotation or cycle of rotations which is regular throughout the course. By having a tortuous passage as described, however, this motion is broken up into an irregular one and a much better effect is produced. It must be borne in mind that the object of this device is not simply to remove a considerable portion of the fiber, but to take from the seeds as nearly as possible every portion of the fiber. This result is most nearly accomplished by the construction illustrated, described, and claimed.

I claim—

1. A device for separating seeds from the

fiber in which they are inclosed, comprising a passage-way formed of a series of portions placed each at an angle to the others with which it is connected, so as to form an abrupt turn in the passage at the angle, and adapted to be connected with a source of air-supply, said passage-way provided with engaging devices adapted to engage the fibers on the seeds and tear them loose therefrom, the end of said passage-way provided with a series of openings of such size that the separated seeds cannot pass therethrough and a series of removing devices working in said openings and adapted to engage the fibers and remove them from the passage-way.

2. A device for separating seeds from the fiber in which they are inclosed, comprising a passage-way formed of a series of portions each placed at an angle to the others with which it is connected, so as to form an abrupt turn in the passage at the angle, said portions connected together and arranged so as to form a spiral and adapted to be connected with a source of air-supply, said passage-way provided with engaging devices adapted to engage the fibers on the seeds and tear them loose therefrom, the end of said passage-way provided with a series of openings of such size that the separated seeds cannot pass therethrough and a series of removing devices working in said openings and adapted to engage the fibers and remove them from the passage-way.

3. A device for separating seeds from the fiber in which they are inclosed, comprising a passage-way formed of a series of straight portions at an angle to each other, said portions connected together so as to form a conical spiral, and adapted to be connected with a source of air-supply said passage-way provided with engaging devices adapted to engage the fibers on the seeds and tear them loose therefrom, the end of said passage-way provided with a series of openings of such size that the separated seeds cannot pass therethrough and a series of removing devices working in said openings and adapted to engage the fibers and remove them from the passage-way.

Chicago, Illinois, April 7, 1897.

FREDERICK C. CROWE.

Witnesses:

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