(No Model.) 2 Sheets—Sheet 1.

W. A. RAGSDALE.

SCOURING DEVICE FOR COTTON SEED.

No. 601,169. Patented Mar. 22, 1898.

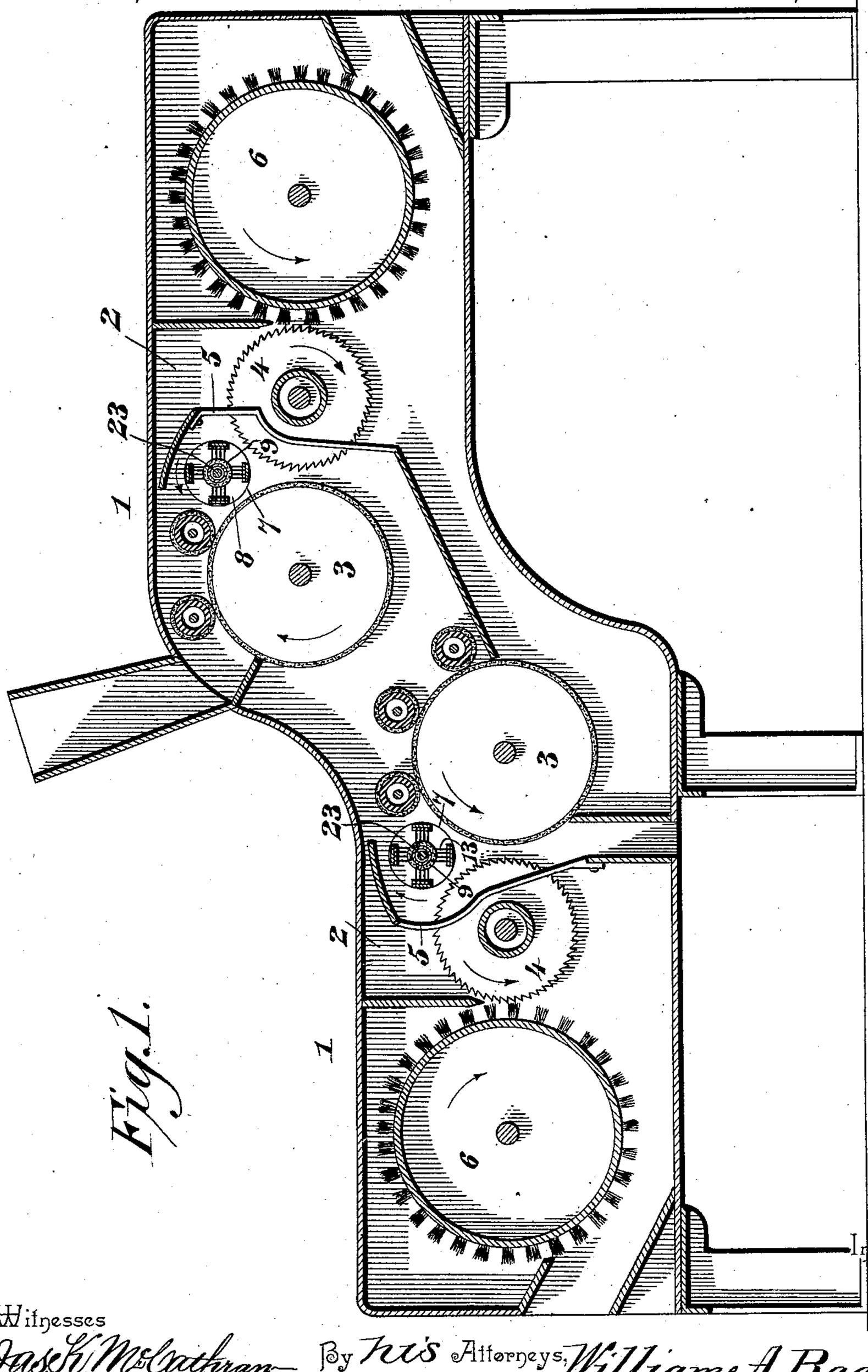

Fig. 1.

Witnesses
Jas. K. McCathran
L. P. Holmes

By his Attorneys, William A. Ragsdale
C. A. Snow & Co.

(No Model.) 2 Sheets—Sheet 2.

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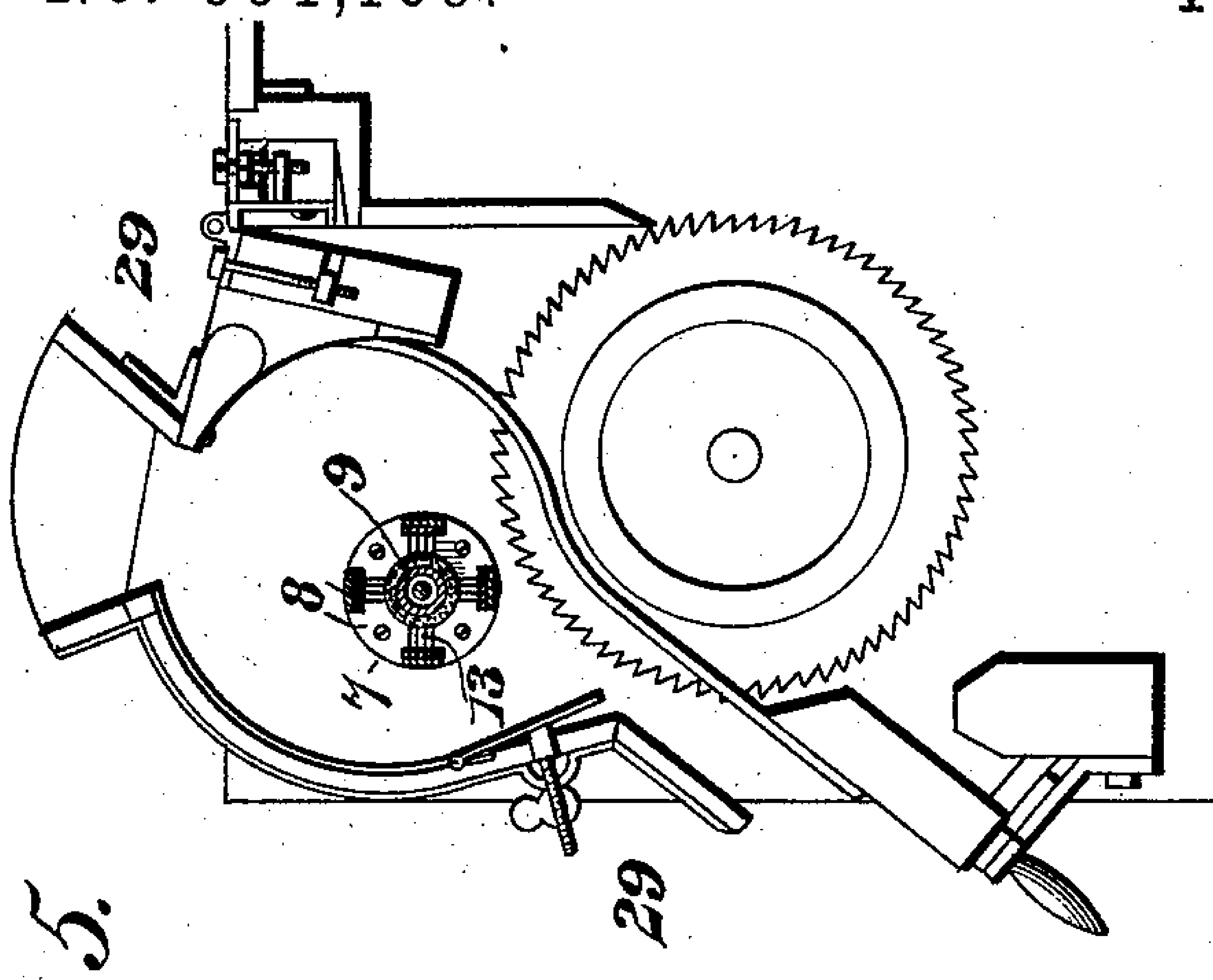

Fig. 5.

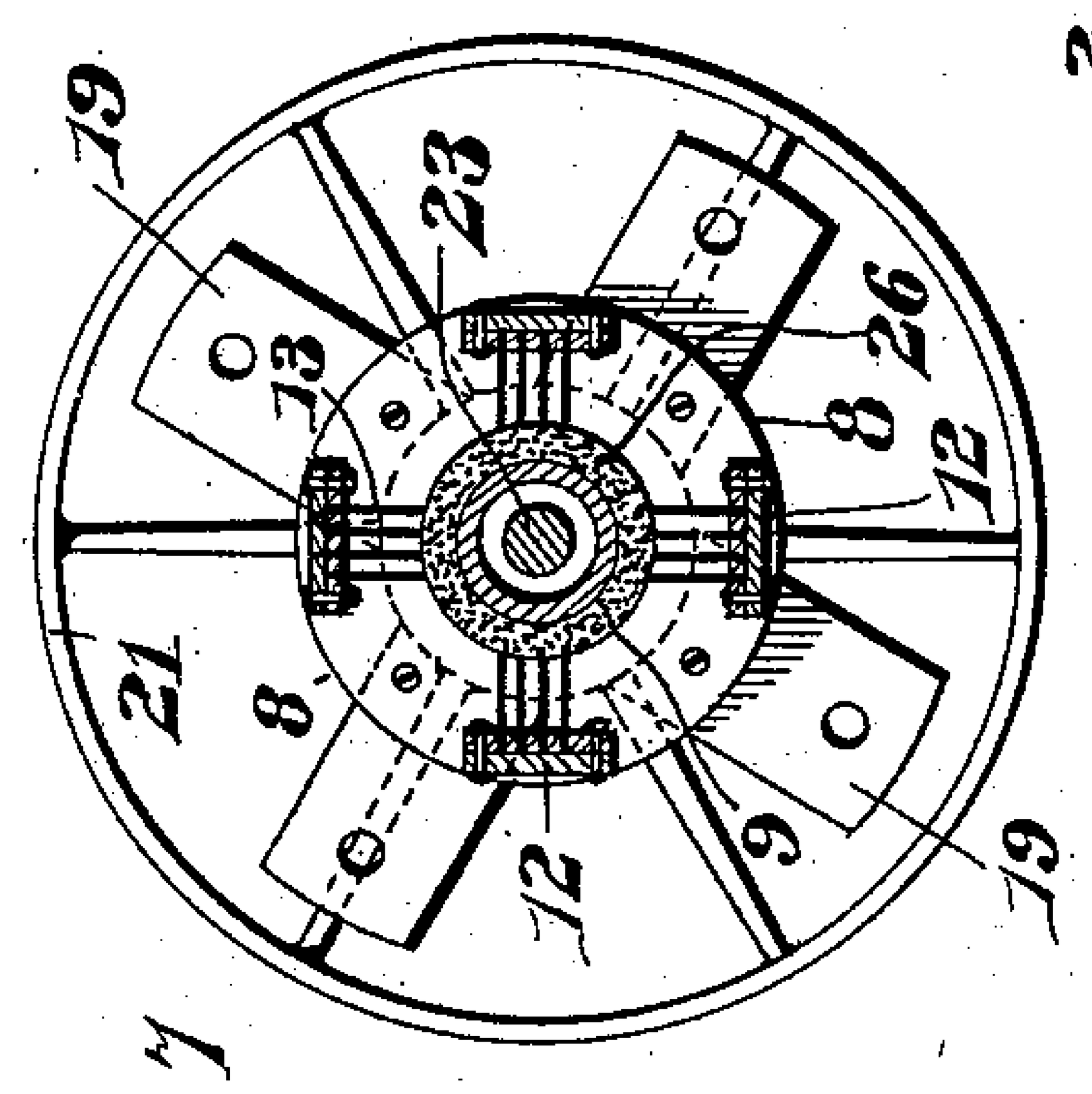

Fig. 4.

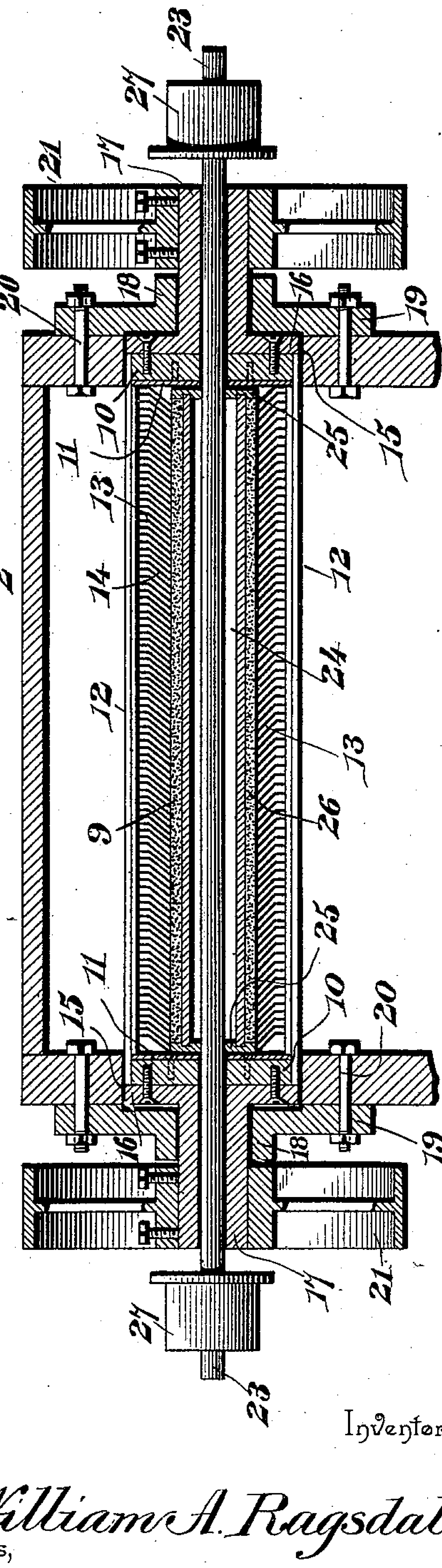

Fig. 3.

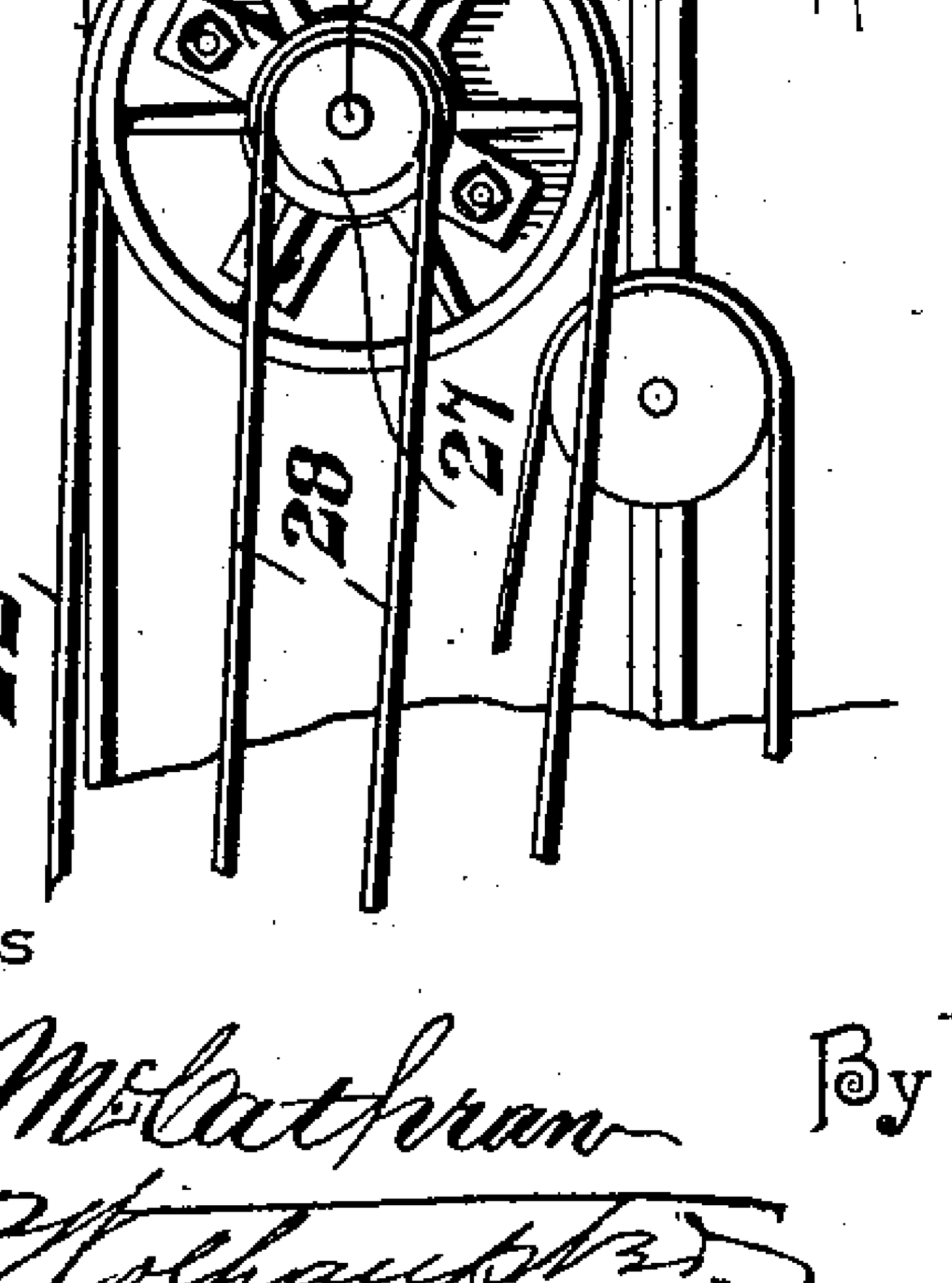

Fig. 2.

Witnesses
Jas. K. McCathran
D. P. Wolhaupter

Inventor
William A. Ragsdale
By his Attorneys,
C. A. Snow & Co.

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

WILLIAM A. RAGSDALE, OF GREENVILLE, MISSISSIPPI.

SCOURING DEVICE FOR COTTON-SEED.

SPECIFICATION forming part of Letters Patent No. 601,169, dated March 22, 1898.

Application filed June 10, 1897. Serial No. 640,236. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM A. RAGSDALE, a citizen of the United States, residing at Greenville, in the county of Washington and State of Mississippi, have invented a new and useful Scouring Device for Cotton-Seed, of which the following is a specification.

This invention relates to a new and useful scouring device for cotton-seed, especially intended for use as an attachment to cotton-seed-delinting machines of that class employing lint-removing mechanism having a cylinder of saws, like the saws of a cotton-gin, for separating the lint from the seed after having been scoured or loosened therefrom.

To this end the invention primarily contemplates a revolving scouring device or attachment constructed and operated in a close relation with respect to lint-removing saws of a cotton-seed delinter, cotton-gin, or similar machine in such a manner as to assist in rotating the roll or bat of seed and lint at a regular speed, while at the same time assisting in thoroughly scouring the lint from the seed. In this operation the invention can be adapted for use in the roll-box of any cotton-handling machine employing saws to provide for the removal of the lint from the seed.

With these and other objects in view, which will readily appear as the nature of the invention is better understood, the same consists in the novel construction, combination, and arrangement of parts hereinafter more fully described, illustrated, and claimed.

In the drawings, Figure 1 is a longitudinal sectional view of a cotton-seed-delinting machine equipped with the scouring device or attachment contemplated by this invention. Fig. 2 is a detail elevation of that portion of the machine-casing in which the device or attachment is fitted. Fig. 3 is a longitudinal sectional view of the scouring device or attachment, showing its applied position within the casing of a delinting-machine. Fig. 4 is a vertical cross-sectional view of the scouring device removed from the casing of the machine. Fig. 5 is a detail sectional view showing the manner in which the scouring device may be arranged within the roll-box of a saw cotton-gin.

Referring to the accompanying drawings, the numeral 1 designates a form of cotton-seed-delinting machine in connection with which the present invention may be employed. This machine is of the type disclosed in my pending application, Serial No. 594,601, and is provided with a long casing 2, in which are arranged separate duplicate sets of delinting mechanism, each of which sets of delinting mechanism is provided with a main emery delinting-roll 3 and a cylinder or series of lint-removing saws 4, arranged adjacent to the main delinting-roll 3 and working between the saw-ribs 5 in a manner similar to the saws in an ordinary saw cotton-gin. In the operation of the delinting mechanism, which is fully explained in the application referred to, the cotton-seed, together with the loosened lint, form into a roll or bat in the space immediately above and between the adjacent surfaces of the roll 3 and the saws 4, which roll and saws, by reason of rotating in the same direction, continuously revolve the bat or roll of seed and lint, while the saws separate or remove the lint from the seed and carry the same between the ribs 5 to the doffing-brush 6 of the lint-removing mechanism. This operation is well understood by those skilled in the art, and it is also understood that the space immediately above and between the adjacent surfaces of the delinting-roll and the saws 5 is commonly known as a "roll-box," and in this space or box the scouring device or attachment contemplated by the present invention is intended to be arranged and rotated in a direction opposite to the rotation of the saws.

The scouring device or attachment (designated by the numeral 7) is arranged horizontally in the position referred to and essentially comprises a skeleton cylindrical revolving brush-holder 8 and a cylindrical revolving scouring-roller 9, rotating within the revolving brush-holder. The skeleton revolving brush-holder 8 of the scouring device may also be broadly termed a "scouring-shell" and comprises opposite circular end heads 10, having inner metal facing-plates 11, and a circular series of parallel regularly-spaced brush-bars 12, secured at their extremities in the peripheries of the oppositely-located end heads 10. The longitudinally-disposed parallel brush-bars 12 have suitably secured to their inner sides the longitudinally-disposed

scouring-brushes 13, having angled wire bristles 14, similar to the wire bristles of ordinary card-clothing, and said wire brushes 13 extend longitudinally from end to end of the bars 12, to which they are secured, so that the bristles thereof will contact with the peripheral surface of the roller 9 the entire length of such roller. To insure a thorough scouring action between the wire bristles of the brushes and the scouring-roller 9, the wire bristles of the adjacent brushes are preferably angled in opposite directions with respect to each other, as clearly indicated in Fig. 3 of the drawings.

The oppositely-located end heads 10 of the revolving cylindrical brush-holder 8, carrying the brushes 13, are designed to rotate within circular openings 15 formed in diametrically opposite sides of the machine-casing 2, and said end heads 10 are rigidly secured to the inner sides of the circular spindle heads or flanges 16 formed at the inner ends of the outwardly-extending tubular spindles 17, and said heads or flanges 16 also work within the circular bearing-openings 15 of the casing. The outwardly-extending tubular spindles 17 for the rotating brush-holder are supported for rotation in the bearing-collars 18 of the bearing-spiders 19, arranged exterior to the machine-casing, and the radial arms of which are bolted, as at 20, to the outer sides of the casing. The outer extremities of said spindles 17 have fitted thereon the belt-wheels 21 to receive the drive-belts 22, driven from any suitable point, and said tubular spindles 17 also form bearings for the longitudinally-arranged roller-shaft 23.

The longitudinally-arranged roller-shaft 23 extends centrally and longitudinally through the revolving brush-holder 8 and the tubular spindles thereof, and said shaft has rigidly fastened thereon by any suitable means the revolving scouring-roller 9, which works within the brush-holder 8 in peripheral contact with the tips of the wire brush-bristles 14. The roller 9 may be constructed in any suitable manner with a cylindrical body portion 24 and circular heads 25 at the ends of such body portion; but whatever may be the detail construction of such roller the same is provided with an emery-covered or peripheral abrasive surface 26, which, in connection with the wire bristles 14, provide for a thorough scouring action of the cotton-seed which falls into the skeleton brush-holder. The opposite extremities of the roller-shaft 23 has fitted thereon the belt-pulleys 27, which receive suitably-driven belts 28 to provide means for rotating the roller 9 entirely independently of the revolving brush-holder 8.

In the operation of the scouring device or attachment the brush-holder 8 and the roller 9 are rotated in the same direction, but opposite to the direction of the rotation of the saws 4, while at the same time the brush-holder is rotated at a slow speed—such, for instance, as one hundred and fifty revolutions per minute—and the roller 9 is rotated very rapidly—say, for instance, at about fifteen hundred revolutions per minute. The differential speed between the brush-holder 8 and the roller 9 serves to thoroughly scour the seed which falls into the brush-holder and positively insures a complete removal of the lint from the seed before the same falls onto the saws. The scouring device is also intended to be supported at about one inch from the delinting-roll 3 and the saws 4, so that the rotating brush-holder will serve to assist in rotating the roll or bat of seed and lint at its regular speed.

In Fig. 5 of the drawings the device or attachment is shown used in the roll-box of an ordinary cotton-gin 29, where substantially the same action takes place as already described, and it will be understood that the invention may be applied with good results in connection with any cotton-handling machine employing saws for the removal of the lint from the seed.

Changes in the form, proportion, and the minor details of construction may be resorted to without departing from the principle or sacrificing any of the advantages of this invention.

Having thus described the invention, what is claimed, and desired to be secured by Letters Patent, is—

1. A scouring device for cotton-seed comprising a scouring-shell having closed ends and peripheral open spaces extending the full length thereof to form passages through which the lint-bearing seed enters and escapes, and a scouring-surface working inside of said shell.

2. A scouring device for cotton-seed comprising a skeleton revoluble scouring-shell having closed ends and peripheral open spaces extending the full length thereof to form inlet and escape passages for the lint-bearing seed, and a revoluble scouring-surface arranged to work inside of said shell.

3. A scouring device for cotton-seed comprising a skeleton revoluble scouring-shell having closed ends and peripheral open spaces extending the full length thereof to form inlet and escape passages for the lint-bearing seed, a separate revoluble scouring-surface working inside of said shell, and means for rotating the shell and the separate scouring-surface in the same direction and at different rates of speed.

4. A scouring device for cotton-seed comprising a revoluble scouring-shell or brush-holder carrying interior radially-disposed brushes and having longitudinal spaces between the brushes extending the full length thereof to form inlet and escape passages for the lint-bearing seed, and a revoluble roller concentrically arranged within said shell or holder and having a continuous abrasive surface contacting with the brushes.

5. A scouring device for cotton-seed comprising a revoluble scouring-shell or brush-

holder carrying a series of spaced inwardly-projecting brushes, the longitudinal spaces between the brushes extending the full length of the shell or holder and forming inlet and escape passages for the lint-bearing seed, a revoluble scouring-roller concentrically arranged within the shell or holder in peripheral contact with the brush-bristles, and means for causing the shell or holder and the roller to relatively rotate at different rates of speed and in the same direction, substantially as set forth.

6. A scouring device for cotton-seed comprising a revoluble scouring-shell or brush-holder having a peripheral series of longitudinal brush-bars extending from end to end thereof and carrying at their inner sides radially-disposed wire brushes, the open spaces between said brush-bars forming inlet and escape passages for the lint-bearing seed, and a revoluble scouring-roller concentrically arranged within the shell or holder in peripheral contact with the brush-bristles, substantially as set forth.

7. In a delinting-machine, the combination with the main delinting-roll and the lint-removing saws adjacent to such roll, of a separate scouring device supported for rotation in the space immediately above the adjacent surfaces of the roll and saw, said scouring device having interior exposed scouring-surfaces and an outer revoluble shell which serves to assist in rotating the roll or bat of seed and lint, substantially as set forth.

8. A scouring device comprising a skeleton revolving brush-holder having a series of parallel longitudinal regularly-spaced scouring-brushes, and oppositely-located end heads carrying tubular outwardly-extending spindles, bearing-spiders receiving said tubular spindles, a roller-shaft extending longitudinally through the brush-holder and journaled in said tubular spindles, and a revolving scouring-roller having an abrasive surface, said scouring-roller peripherally contacting with the brush-bristles and rotating faster than the brush-holder and in the same direction as the same, substantially as set forth.

9. In a delinting-machine, the combination with the main delinting-roll and the lint-removing saws adjacent to such roll, of a separate scouring device supported in the space immediately above the adjacent surfaces of the roll and saws and comprising a skeleton cylindrical revolving brush-holder carrying brushes, and a scouring-roller mounted for rotation within the brush-holder, said holder and roller rotating in a direction opposite to the rotation of the saws, substantially as set forth.

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

WM. A. RAGSDALE.

Witnesses:
W. A. POLLOCK, Jr.,
WM. C. DUFOUR.