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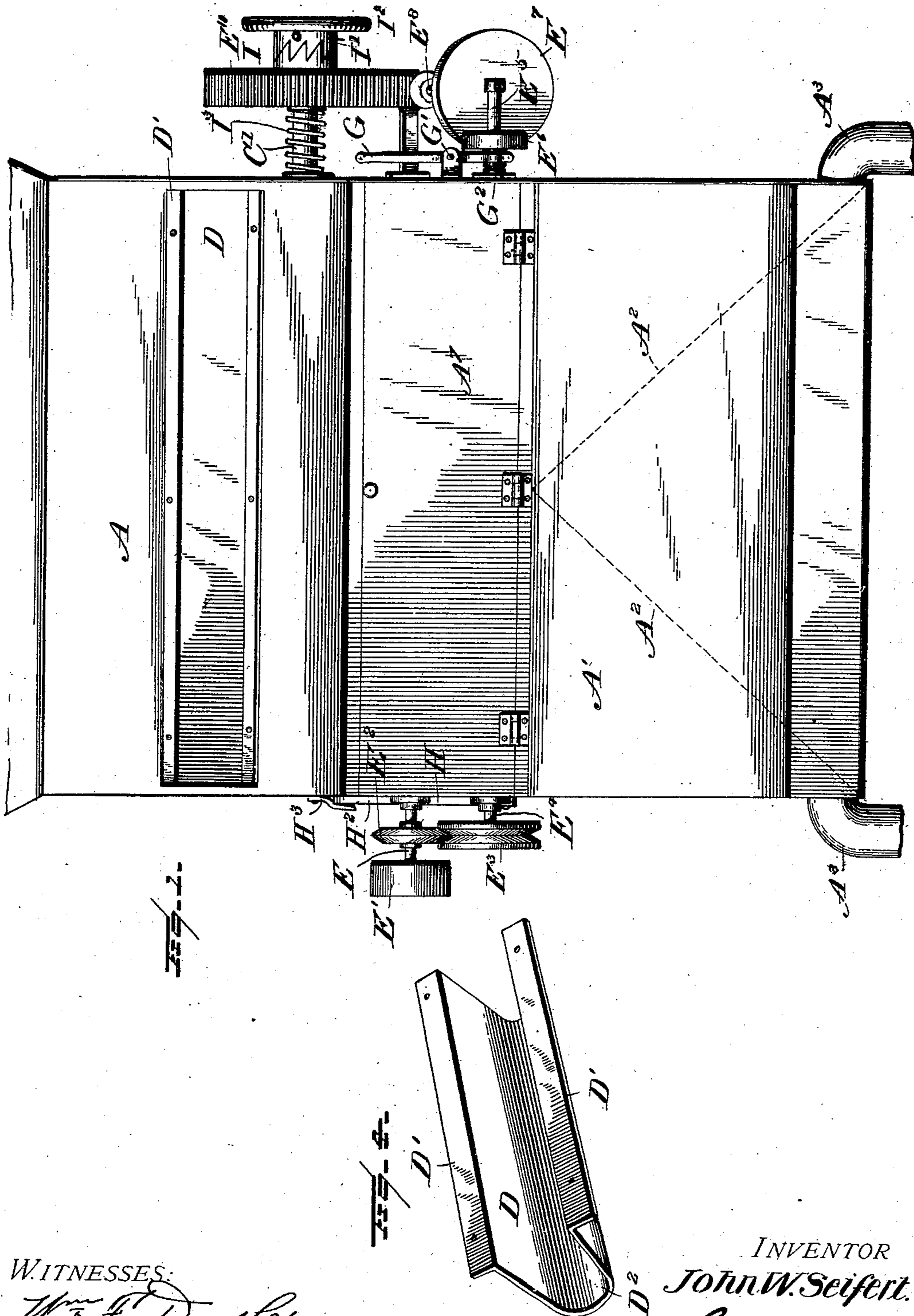
J. W. SEIFERT.

COTTON GIN FEEDER AND CLEANER.

(Application filed Jan. 28, 1901.)

(No Model.)

2 Sheets—Sheet 1.



WITNESSES:

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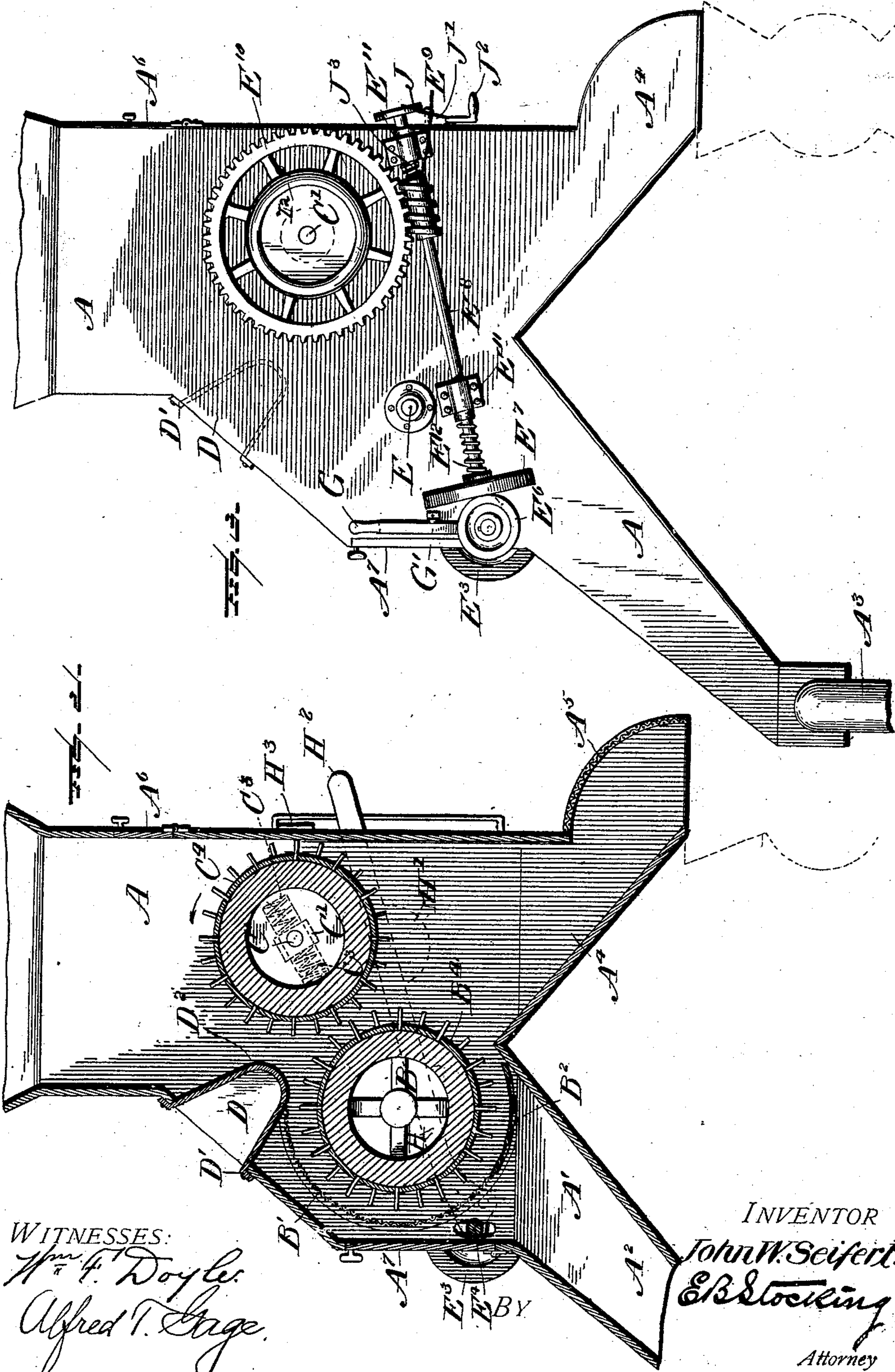
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UNITED STATES PATENT OFFICE.

JOHN W. SEIFERT, OF WACO, TEXAS, ASSIGNOR OF TWO-THIRDS TO
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COTTON-GIN FEEDER AND CLEANER.

SPECIFICATION forming part of Letters Patent No. 715,699, dated December 9, 1902.

Application filed January 28, 1901. Serial No. 45,068. (No model.)

To all whom it may concern:

Be it known that I, JOHN W. SEIFERT, a citizen of the United States, residing at Waco, in the county of McLennan, State of Texas, have invented certain new and useful Improvements in Cotton-Gin Feeders and Cleaners, of which the following is a specification, reference being had therein to the accompanying drawings.

10 This invention relates to a cotton-cleaner and gin-feeder, and particularly to a structure in which the cotton is passed over the screening-surface by means of a picker-roller.

15 The invention has for its object a material improvement in the feed-roller or device whereby a thin even bat of cotton is fed to and acted upon by the picker-roller.

20 A further important improvement consists in the driving mechanism, whereby the picker-roller is rotated at a much higher speed than the feed-roller and all danger of damage obviated by reason of the frictional connection between the parts.

25 Other and further objects and advantages of the invention will appear in the following description, and the novel features thereof will be pointed out in the appended claims.

30 In the drawings, Figure 1 is a side elevation of the invention; Fig. 2, a vertical cross-section thereof; Fig. 3, an end elevation; and Fig. 4 a detail perspective of the bat-former.

Like letters of reference refer to like parts in the several figures of the drawings.

35 The letter A designates a suitable casing, into the upper portion of which seed-cotton may be fed by any desired method, and in the lower portion thereof a picker-roller B is suitably journaled. This roller is provided upon its periphery with any ordinary form of picker-teeth, as is also the feed-roller C, which is located at one side of and above the picker-roller D. At a proper point at one side of the feed-roller C a bat-former D is rigidly supported from the casing in any desired manner—for instance, by means of flanges D'—45 and is provided with a curved face or nose D², by means of which an even thin bat of cotton is fed to the picker-roller. The teeth upon this roller carry the bat of cotton into 50 contact with the screen B', which extends

circumferentially of the picker-roller, and at the lower portion of this screen enlarged openings are provided, by means of the slats B², to permit the escape of larger substances, such as sticks or stones, from the cotton. 55 The dirt and substances which may pass from the screen are discharged by gravity into the chute A', which is provided with an inclined bottom A², extending in opposite directions from the central point and communicating 60 with dirt-conveying pipes A³ or other suitable receptacle. At the opposite side of the picker-roller a cotton-discharge chute A⁴ is provided, which may, if desired, deliver the cleaned cotton directly into a gin. This chute A⁴ is provided with a screened opening A⁵, through 65 which the character and condition of the cotton delivered to the gin may be inspected.

The case A may be provided with any desired apertures or doors—for instance, a door 70 A⁶ to permit inspection of the feed-roller or a door A⁷ opposite the screen B', which is made removable, so that the screen may be inspected or removed through the door A⁷.

75 In a cotton-cleaner of this character the picker-roller B is driven at about two hundred revolutions a minute, while the feed-roller makes only about one revolution a minute, and these conditions necessitate the use of a driving mechanism to effect the necessary reduction of speed and to prevent injury to any of the parts should the rollers become clogged. With this end in view the shaft E of the picker-roller B is provided with a driving-pulley E' and a beveled friction-wheel E², cooperating with a driven friction-wheel E³ upon one end of a counter-shaft E⁴, which is suitably journaled in the end of a pivoted lever H, provided with a weight H' and an operating-handle H². The weight normally holds the friction-wheel in contact, and 85 when it is desired to hold the same separated the handle of the lever may be engaged by a retaining-spring H³, secured to the case to hold the lever in a raised position. The opposite end of the counter-shaft is extended, as at E⁵, and has slidably mounted thereon a friction driving-wheel E⁶, adapted to travel upon the face of the driven disk E⁷, from which the shaft E⁸ extends, and is provided 90 95 100

with a worm-gear E⁹, adapted to mesh with a pinion E¹⁰, loosely mounted upon the shaft of the feed-roller C and normally held in contact with a clutch carried by a hand-wheel I², secured to said shaft, said contact being effected by a spring I³, extending between the case and the hub of the pinion. The shaft E⁸ is suitably supported in any desired form of boxing, such as E¹¹, to permit of a reciprocatory motion thereof, while the friction-disk is normally held in contact with the wheel E⁶ by means of a spring E¹², bearing at opposite ends against the disk and a fixed support.

The shaft E⁸ may be shifted longitudinally to withdraw the disk E⁷ from the wheel E⁶ by any desired means—for instance, a plate J, secured to the end of the shaft, and a cam-disk J', pivoted to the case beneath the plate J and provided with a handle J² to operate the same. This cam bears against the inner face of the plate J and forces the same away from the casing to separate the disk and wheel to stop the rotation of the feed-roller. The shaft is restored to its initial position by the spring E¹², assisted by the spring J³.

For the purpose of disconnecting the feed-roller from its driving mechanism a suitable clutch I is provided upon the pinion E¹⁰ and adapted to be operated by a similar clutch I' upon a hand-wheel I², secured to the shaft C'. Such a disconnection permits the feed-roller to be operated by the hand-wheel, which is very desirable when a small amount of cotton is to be fed through the machine. The feed-roller has its journal C' mounted at each end in boxes C², which are held in their normal position by means of springs C³, as shown in Fig. 2, which permits a yielding of the roller and prevents damage to the teeth thereon or the roller in case a stone or other obstruction becomes lodged between the roller and the nose of the bat-former. This movement of the shaft of the feed-roller through the medium of its pinion and worm causes a disconnection of the driving mechanism for the feed-roller.

For the purpose of regulating the relative speed at which the picker-roller and feed-roller shall revolve I have provided a shifting lever G, suitably pivoted at G' to the case and adapted to engage a collar G² from the friction-wheel E⁶ in order to shift the same toward and from the center of the disk.

The feed-roller C and the picker-roller B are each preferably formed of wood or similar material and inclosed by a sheet-metal covering, such as C⁴ and B⁴, respectively, which protect the body or core of the rollers and render the same durable and fireproof. They also prevent the swelling or warping of the wood, often caused by moisture carried in the wet or damp cotton, so that the work of the rollers is uniform under all conditions. When it is desired to rotate the feed-roller by hand, the hand-wheel I², secured to the shaft C', will be turned in the direction of rotation and

through the clutch-teeth forces the pinion away therefrom and out of mesh with the worm E⁹, thus placing the restoring-spring under tension.

In the operation of the machine the cotton falls upon the roller C and is fed thereby against the nose of the bat-former and into contact with the picking-roller B. This action produces a bat of a light thin character, whereby a perfectly even feed is secured and the cotton presented in the best condition to the screening-surface. In the prior art it has been old to use two feeding-rollers; but objection has been found to these, as the cotton is thereby fed in compact bunches, which are not readily separated by the picking-roller, and the cleaning of the cotton is not thoroughly accomplished. The present structure utilizes only two rollers in combination with a bat-former, and thereby secures the desired even feed of cotton. The cotton is carried by the picking-roller over the screen B' and slats B² and then discharged through the chute B⁴, and the dirt and material removed from the cotton are discharged through the chute A'. From the foregoing description the operation of the driving mechanism will be apparent, and it will be seen that thereby the feed-roller may be readily disconnected from the power mechanism and driven by hand and is so mounted as to prevent injury to the roller or teeth thereon if a hard substance be accidentally introduced into the machine. The frictional gearing also facilitates this disconnection and permits the relative adjustment of the speed of the feeding and picking rollers to accomplish the various characters of work for which they may be used. This speed of rotation will be varied, dependent upon the condition of the cotton to be screened. It will also be seen that the dirt-chute herein shown permits the discharge of all substances removed from the cotton by gravity and without the employment of any supplemental conveying agency.

It will be obvious that changes may be made in the details of construction and configuration without departing from the spirit of the appended claims, and such changes as are within the ordinary mechanical skill are contemplated within the scope of the invention.

Having described my invention and set forth its merits, what I claim, and desire to secure by Letters Patent, is—

1. In a cotton cleaner and feeder, the combination with a casing, of a picker-roller and screening-surface located therein, a stationary bat-former above said roller in the path of feed thereto, a feed-roller adapted to cooperate with said bat-former, a cotton-chute and a dirt-chute inclined in opposite directions from the picker-roller, a yielding bearing for said feed-roller, means for driving said picker-roller, means for driving said feed-roller at a less speed than the picker-roller, means for varying the relative speed of the

picker and feed rollers, and means for disconnecting the feed-roller from its driving mechanism; substantially as specified.

2. In a cotton cleaner and feeder the combination with a casing, of a toothed picker-roller, a screening-surface extending circumferentially at one side thereof, a stationary bat-former having a curved nose above said picker-roller, a toothed feed-roller opposite the nose of said former, means for driving said picker-roller, a driving-shaft for said feed-roller, intermediate connections for varying the relative speed of rotation of said rollers, a yielding support for the shaft of said feed-roller, and means for disconnecting the driving-gear of said feed-roller from the driving mechanism; substantially as specified.

3. In a cotton cleaner and feeder, the combination with a casing, of rotatable feed and picker rollers disposed in feeding relation to each other, a screen circumferential to one side of the picker-roller, a bat-former intermediate of said rollers comprising a plate provided with securing-flanges and a U-shaped nose projecting inward and downward between the rollers into the path of feed; substantially as specified.

4. In a cotton cleaner and feeder, the combination with a casing, of rotatable feed and picker rollers disposed in feeding relation to each other, a screen at one side of the picker-roller, driving means for said picker-roller, a counter-shaft geared to the shaft of said picker-roller and provided with a friction-roller, a driving-shaft disposed at an angle to said friction-roller and provided with a friction-disk and a worm-gear, and a laterally-movable pinion upon said feed-roller meshing with said worm; substantially as specified.

5. In a cotton cleaner and feeder, the combination with a casing, of rotatable feed and picker rollers, a screen at one side of the picker-roller, driving means for said picker-roller, a counter-shaft geared to the shaft of said picker-roller and provided with a friction-roller, a driving-shaft disposed at an angle to said friction-roller and provided with a friction-disk and a worm-gear, a pinion upon said feed-roller meshing with said worm, a lever for shifting said friction-roller, a spring for holding said disk in contact with the friction-roller, a clutch connecting said pinion to the shaft of the feed-roller, and a yielding bearing for the shaft of said feed-roller; substantially as specified.

6. In a cotton cleaner and feeder, the combination with a casing, of a feed-roller therein

having an extended shaft, a hand-wheel secured to said shaft for disconnecting it from a driving device and provided with a clutch member, a driving-pinion loosely mounted to reciprocate on said shaft and provided with a cooperating clutch member adapted to receive lateral motion by contact with its associate member, a spring to hold said pinion in clutching contact, and driving means for said pinion; substantially as specified.

7. In a cotton cleaner and feeder, the combination with a casing, of a picker-roller therein provided with a driving-wheel, a counter-shaft provided with a driving-wheel to engage the wheel on the shaft of said picker-roller, a feed-roller in said casing provided with a driving-gear, means for operatively connecting said counter-shaft to drive said feed-roller, and means for shifting said gear upon its shaft to disconnect it from its driving means; substantially as specified.

8. In a cotton cleaner and feeder, the combination with a casing, of a picker-roller therein, a feed-roller cooperating therewith, a driving-shaft operatively connected with the shaft of said picker-roller, a driving-gear upon the shaft of said feed-roller cooperating with a gear upon said driving-shaft, a plate at one end of said shaft, a cam-disk pivoted to a fixed member and adapted to operate against a face of said plate to reciprocate said shaft, and a frictional connection between said shaft and the driving connections therefor from the shaft of the picker-roller; substantially as specified.

9. In a cotton cleaner and feeder, the combination with a casing, of a picker-roller having a friction-wheel upon its shaft, a counter-shaft journaled in one end of a pivoted lever and provided with a cooperating friction-wheel, a feed-roller, a pinion loosely mounted upon a shaft thereof and provided with a toothed clutch member, a hand-wheel secured to said feed-roller shaft and provided with a cooperating clutch member, a spring for holding said pinion in contact with said wheel, a worm-gear having a frictional connection with said counter-shaft, a plate upon the shaft of said worm-gear, and a cam device operating against said plate to shift said worm-gear and shaft longitudinally; substantially as specified.

In testimony whereof I affix my signature in presence of two witnesses.

JOHN W. SEIFERT.

Witnesses:

H. W. NAGEL,
B. T. SNEED.