

(No Model.)

J. A. LEWIS.
MACHINE FOR CLEANING COTTON SEED.

No. 603,448.

Patented May 3, 1898.

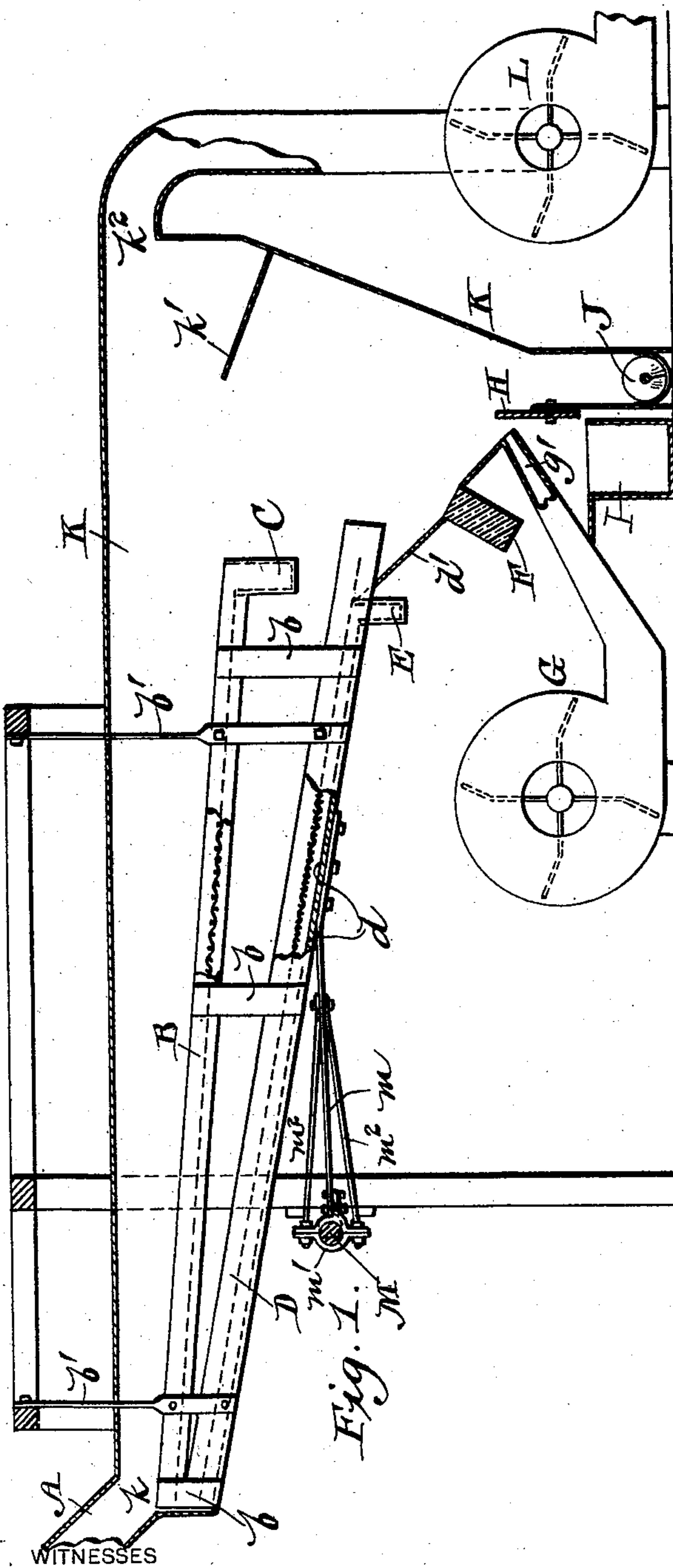


Fig. 1.

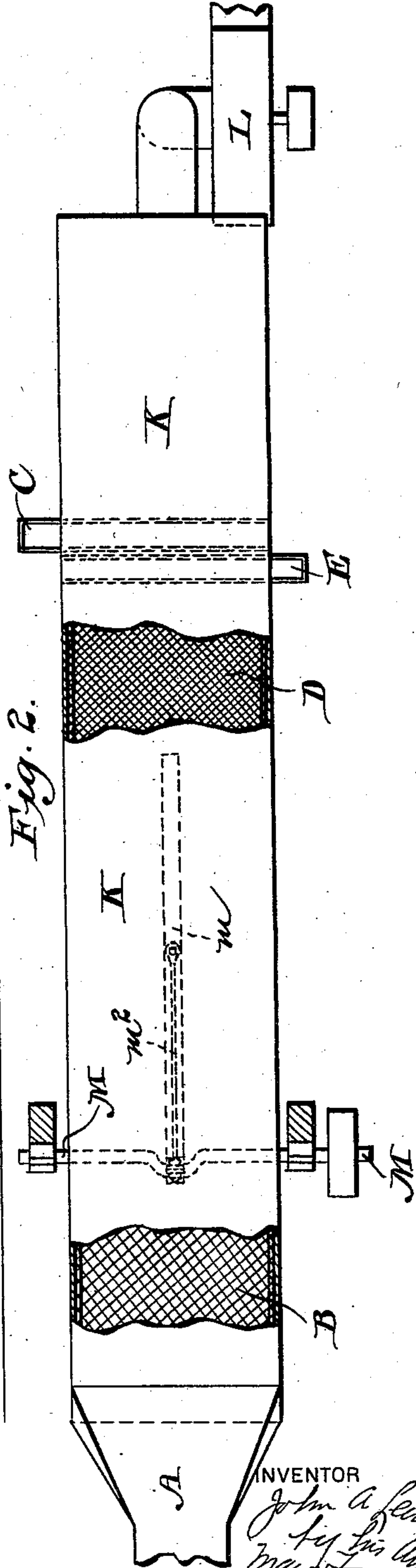


Fig. 2.

WITNESSES

Attestance.
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UNITED STATES PATENT OFFICE.

JOHN ALFRED LEWIS, OF MERIDIAN, MISSISSIPPI.

MACHINE FOR CLEANING COTTON-SEED.

SPECIFICATION forming part of Letters Patent No. 603,448, dated May 3, 1898.

Application filed March 12, 1897. Serial No. 627,159. (No model.)

To all whom it may concern:

Be it known that I, JOHN ALFRED LEWIS, a citizen of the United States, residing at Meridian, in the county of Lauderdale and State of Mississippi, have invented certain new and useful Improvements in Machines for Cleaning Cotton-Seed; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to improvements in cotton-seed-cleaning machines; and it consists of certain novel constructions, combinations, and arrangements of parts, as will be hereinafter described and specifically claimed.

In the accompanying drawings, Figure 1 represents a vertical longitudinal cross-section of a cotton-seed-cleaning machine constructed in accordance with my invention. Fig. 2 is a top plan view of the same, parts being broken away to show the interior shakers.

A represents a feed-spout; B, a boll-shaker; D, a sand-shaker; G, a blast-fan or blower, and L an exhaust-fan.

In constructing my machine for cleaning cotton-seed I have found that it is very advantageous to pass the cotton-seed first upon a screen of large mesh or provided with large perforations in order to remove large particles, and then to pass it over a screen of smaller mesh or having smaller perforations to remove smaller particles than the cotton-seed. I also find that it is very advantageous to inclose said screens entirely within a suitable casing in order that an air-blast may be used to further separate foreign particles or substances from the seed and also in order that I may use an exhaust-fan to completely exhaust the dust and smaller particles from the seed. To accomplish these ends, I construct a casing, as K, having its lower sides generally convergent toward a bottom point and having at one of its upper ends an inlet, as *k*, to receive the cotton-seed from the spout A, which delivers the same from some elevator or suitable conveyer. The spout A receives the seed taken from seed-sheds or similar places and delivers it upon an inclined

shaker B. The shaker B is mounted in the upper part of the casing K and is preferably inclined from the point where the chute enters the frame to a receptacle C at its lower end. This shaker B, I term a "boll-shaker," as it is provided with a bottom having a screen of large mesh adapted to allow the cotton-seed to drop through, but to separate and carry off larger bodies passing over the same—as, for instance, bolls from the cotton-seed. These, as they pass down the chute, will be collected in a receptacle C at the lower end of said shaker. One end of the receptacle C preferably projects through the side of the casing, as seen in Fig. 2, in order that its contents may be removed at any time. Below the boll-shaker B is another shaker D, which I term the "sand-shaker." This is held in an inclined position in the casing K and forms part of the lower wall of said casing. The sand-shaker D is preferably more inclined in its position than the boll-shaker B and is provided with a screen-bottom having a mesh of suitable fineness to prevent the cotton-seed from dropping through, but to allow heavier and smaller particles, such as sand and grit, to drop through. Beneath the screen is a floor *d*, adapted to catch all the screenings that fall through the shaker and convey them to a receptacle E at its lower end. The receptacle E also extends at one end beyond the casing, as seen at Fig. 2, so that its contents may be removed at any time. The cotton-seed travels down the inclined sand-shaker D and is deposited upon an inclined floor *d'*, which delivers it to a magnet F, the surface of which is preferably about flush with the floor *d'*. As the seed passes over this magnet any metallic particles or substances will adhere thereto and thus be removed from the seed. After passing over the magnet F the seed is subjected to a blast of air from a blower G. The blower G is situated outside the casing K and is adapted to force air through a spout or duct *g'* in such a manner as to cause said air to pass across the path of the cotton-seed. By this means the cotton-seed will be carried over an adjustable board or slide H and will fall into a conveyer J at the bottom of the casing K. Any foreign substances which have not been sep-

arated from the seed upon the shakers and which are heavier than the cotton-seed will fall into the box or receptacle I and will not be carried over the adjustable board or slide H with the cotton-seed. At the upper corner of the casing K, and preferably at the end opposite to the chute A, I provide an outlet leading to an exhaust-fan L, exterior to the casing K. This fan is operated to exhaust the air from the casing K, thus drawing all the dust and similar like particles from the interior of the said casing. If desired, a baffle-plate k' may be mounted in the casing near the outlet k^2 to the exhaust-fan. In order to operate the shakers B and D, a cross-shaft M is preferably mounted beneath them upon supporting-standards of the casing, as at k^3 . Each screen may be connected with the shaft separately, but I prefer to connect the screens together, as shown in Fig. 1 of the drawings at $b b$, and suspend the said screens thus connected upon flat spring bars or hangers $b' b'$, so that they will be free to vibrate. In order to operatively connect the screens to the cross-shaft M, I provide a spring-bar m , secured to the under side of the lower screen at one end and provided with a strap m' at the other for surrounding an eccentric or crank formed upon the shaft M. The spring-bar m may be strengthened by tie-bars $m^2 m^2$, if desired. The shaft is provided at one end with a suitable pulley, which may be connected with suitable mechanism to revolve the shaft, in order to vibrate the screens in the proper manner.

It will be observed that by my construction I am enabled to produce a machine for cleaning cotton-seed which will be very effective, particularly in the use of a boll-shaker separating the bolls from the seed and a sand-shaker for separating the sand and heavy particles. Also by completely inclosing these shakers and the path of the cotton-seed as well as the conveyer within the casing, as K, I am enabled to use effectively a blower and also an exhaust-fan for completely removing dust from the mechanism.

Having now described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In a cotton-seed-cleaning machine, the combination with an inclosing casing, of a pair of screens arranged one above the other, the upper screen being of coarse mesh to allow the cotton-seed to drop upon the lower screen while the bolls or husks will be retained by the upper screen, a transverse receptacle or trough at the lower end of the upper screen and connected thereto for collecting the bolls and conveying them outside the casing, the lower screen being of fine mesh to support the cotton-seed and to permit the grit and other foreign substance to fall through the said screen, an inclined floor immediately beneath the lower screen and connected thereto to receive said grit, and a transverse trough or receptacle at the lower

end of said floor and connected thereto to collect the said grit and convey it outside the casing, means for shaking the said screens, floor and troughs to facilitate the separating operation, a stationary inclined floor to receive the cotton-seed directly from the lower end of the lower screen, a magnet in said floor to attract and remove any metallic particles, a blast-fan adapted to deliver a blast across the path of the cotton-seed at the lower end of the said floor, an adjustable slide opposite the said blast, a conveyer for receiving the cotton-seed carried over the said slide by the blast, an exhaust-fan for withdrawing dust-laden air from the casing and a baffle-plate to prevent the possibility of cotton-seed being carried off by the suction, substantially as described.

2. In a cotton-seed-cleaning machine, the combination with an inclosing casing, of a pair of screens arranged one above the other, the upper screen being of coarse mesh to allow the cotton-seed to drop upon the lower screen while the bolls or husks will be retained by the upper screen, a transverse receptacle or trough at the lower end of the upper screen for collecting the bolls and conveying them outside the casing, the lower screen being of fine mesh to support the cotton-seed and to permit the grit and other foreign substances to fall through the said screen, an inclined floor immediately beneath the lower screen to receive the said grit, and a transverse trough or receptacle at the lower end of said floor to collect the said grit and convey it outside the casing, means for shaking the said screens and floor to facilitate the separating operation, said means comprising a flat spring-bar bolted at one end to the said screens, a yoke secured at its other end, an eccentric engaging said yoke, the said yoke being provided with lateral projections, rods secured at one end to said lateral projections upon the yoke and fastened at their other ends to said flat spring-bar whereby the said bar is stiffened and strengthened at the end adjacent to the eccentric, the bar being sufficiently flexible to allow it to accommodate itself to the movements of the eccentric, a floor to receive the cotton-seed directly from the lower end of the lower screen, a magnet in said floor to attract and remove any metallic particles, a blast-fan adapted to deliver a blast across the path of the cotton-seed at the lower end of the said floor, an adjustable slide opposite the said blast, a conveyer for receiving the cotton-seed carried over the said slide by the blast, an exhaust for withdrawing dust-laden air from the casing, and a baffle-plate to prevent the possibility of cotton-seed being carried off by the suction, substantially as described.

3. In a cotton-seed cleaner, the combination with a suitable outer inclosing casing, of vibrating screens mounted therein, means for vibrating the same comprising a flat spring-bar bolted at one end to the said screens, a yoke secured at its other end, an eccentric

engaging said yoke, the said yoke being provided with lateral projections, rods secured at one end to the said lateral projections upon the yoke and fastened at their other ends to the said flat spring-bar whereby the said bar is stiffened and strengthened at the end adjacent to the eccentric, the bar being sufficiently flexible to allow it to accommodate

itself to the movements of the eccentric, substantially as described.

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

JOHN ALFRED LEWIS.

Witnesses:

T. L. HURLBUTT,

V. L. CRAWFORD.