

(No Model.)

J. B. CLOPTON.
PNEUMATIC COTTON CONVEYER.

No. 462,301.

Patented Nov. 3, 1891.

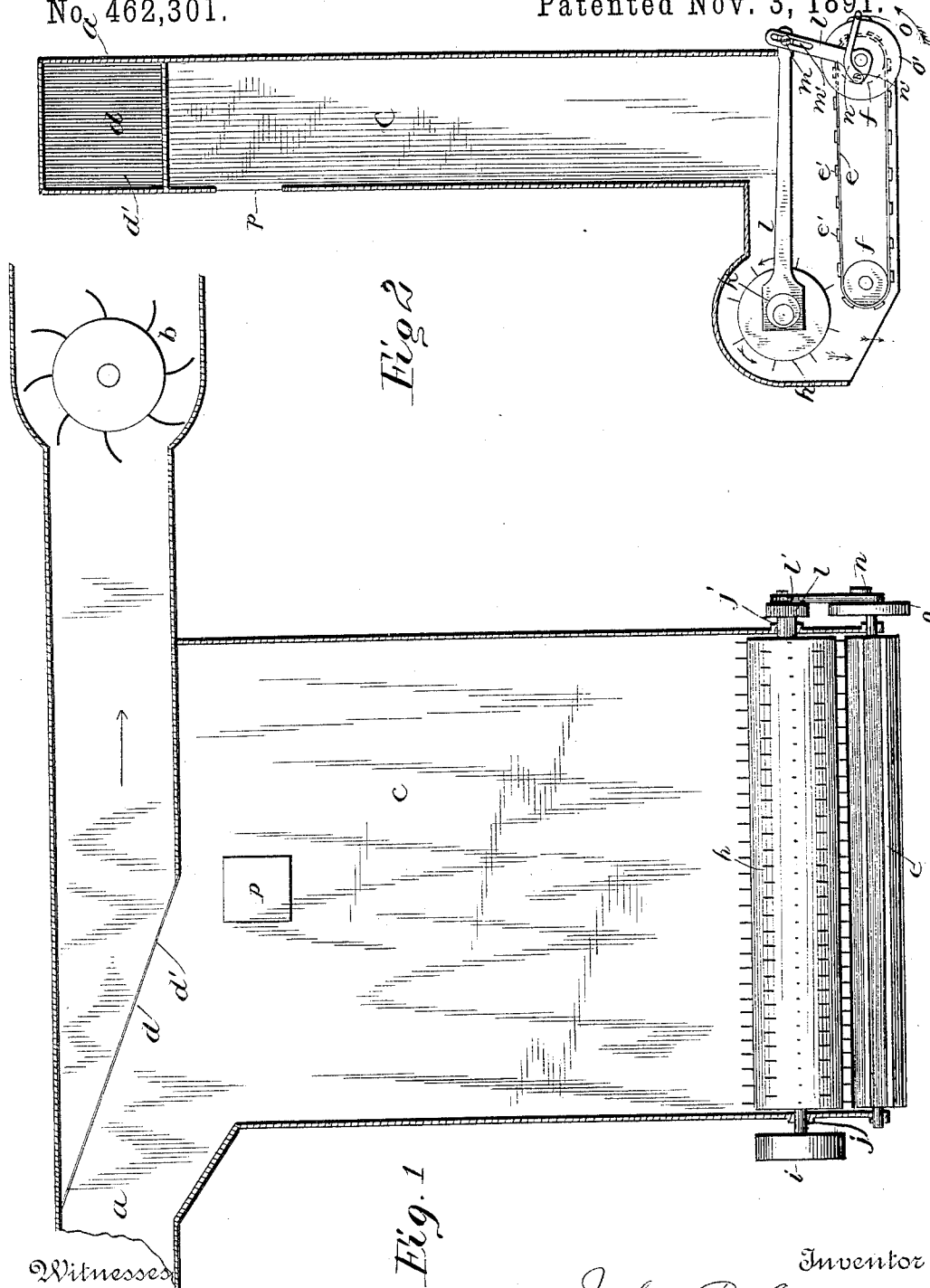


Fig. 2

Fig. 1

Witnessed
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UNITED STATES PATENT OFFICE.

JOHN B. CLOPTON, OF BASTROP, TEXAS.

PNEUMATIC COTTON-CONVEYER.

SPECIFICATION forming part of Letters Patent No. 462,301, dated November 3, 1891.

Application filed March 3, 1891. Serial No. 333,619. (No model.)

To all whom it may concern:

Be it known that I, JOHN B. CLOPTON, a citizen of the United States, residing at Bastrop, in the county of Bastrop and State of Texas, have invented certain new and useful Improvements in Cotton Elevators or Conveyers; 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 has reference to that class of cotton-elevators in which the cotton is moved from one point to another by the suction of a fan, which draws the cotton through a flue having an outlet in its lower side, through which the cotton drops by gravity into a receptacle, from where it is transferred to the gin. Heretofore machines of this class have employed wire-netting across the flue at a point above the mouth of the receptacle in which the cotton falls, so that the cotton will be prevented from going past the mouth and into the fan. Such wire-netting catches the lint and holds it in its meshes, thereby impeding the draft and requiring the machine to be frequently stopped until the netting can be cleaned; and, furthermore, the machines of this class heretofore used generally require a feeder and distributing attachments separate from the elevator with which to transfer the cotton, such machinery often being very heavy and cumbersome.

The object of my invention is to construct a combined elevator and feeder having exceedingly few parts, thereby dispensing with a large amount of the gearing heretofore employed, and which can be easily operated and kept in running order, and which will be cheap, strong, and durable.

With these ends in view my invention consists in the peculiar features and combination of parts more fully described hereinafter, and pointed out in the claims.

In the accompanying drawings, Figure 1 represents a side elevation, partly in section; and Fig. 2, an end view.

The reference-letter *a* represents a horizontal flue leading from a wagon loaded with cotton or from any other supply to an exhaust-fan *b*. This flue *a* passes over a receptacle *c* for the reception of the cotton, which

is drawn to it by suction in the usual way. A deflecting-screen *d* is located above the receptacle and placed diagonally across the flue for the purpose of deflecting the cotton into the receptacle below. Instead of using wire-netting, in which the transverse strands arrest and clog the meshes of the screen, I employ a deflector composed of straight bars, wires, slats, or similar devices *d'* without any transverse obstructions, thereby preventing the cotton from clinging to the deflector, but allowing it to slide over the surfaces thereof to the hopper below, thus keeping the deflector always open, and at the same time allowing the draft to flow freely through the flue, so that the fan will have a uniform suction on the cotton. In addition to this improvement for keeping a steady and uniform feed to the receptacle I have provided an improved means for automatically emptying the receptacle and delivering its contents into the hopper of a gin located near by. This means consists of a traveling bottom or endless apron *e*, extending transversely across the bottom of the receptacle and provided with cross-slats *e'*, and it passes over rollers *f f'*, journaled in the frame-work *g*. A spiked cylinder *h* is journaled in the frame-work at the outlet of the receptacle and just above the roller *f* and revolves in a direction opposite to the apron, so as to catch the outcoming cotton, carry it over the cylinder, and drop it into the mouth of a cotton-gin below. This spiked cylinder is actuated by a pulley *i* on its journal *j*, the opposite end of which is provided with an eccentric cam *k*, operating in the end of a drive-rod *l*, and this rod is connected to the free end of a rock-arm *l'*, pivoted on the journal of pulley *f'*. The drive-rod *l* is adjustably connected to the rock-arm by a pin *m*, movable in a longitudinal slot *m'*, whereby the stroke of the rod may be varied to suit the occasion.

Instead of a pawl and ratchet with which to actuate the belt-pulley, I have provided an arm *n*, which is attached to a pivot *n'* on the lower part of the rock-arm and has upon its free end a pivoted friction-shoe *o*, which engages the periphery of a wheel *o'*, secured to rotate with the pulley *f'*.

The back of the box extends down to the traveling bottom or endless apron *e*, and its

front side is somewhat shorter in order to allow the cotton to be conveyed by the apron to the spiked cylinder *h*.

The receptacle *c* is provided with a glass window *p* and is given such a capacity that when the cotton fills it up to the window the weight will be sufficient to overcome the suction of the fan and allow the cotton to descend and be carried forward by the apron below and emptied into the gin by the spiked roller. Hence it will be seen that the cotton acts as an automatic valve to close the bottom of the receptacle against the ingress of air.

The preferred construction of my device having been set forth, I will now proceed to give a general and brief description of its operation.

When the end of the flue *a* is placed in a wagon or other conveyance containing cotton, while the fan is in operation the cotton will be sucked into the flue, and passing in the direction denoted by arrows it strikes obliquely against the rods *d'* of the deflector *d* and glances downward into the receptacle *c* below. In striking the deflector the cotton brushes off any lint that may have collected and keeps it swept clean. A belt being applied to pulley *i*, the spiked cylinder is rotated, and this rotation reciprocates the rod *l* and rocks arm *l'*, and each stroke forward of this arm causes the shoe *o* to engage the periphery of wheel *o'* and advance the pulley *f'* a partial rotation, while every backward stroke loosens the shoe and slides it back over the periphery of the wheel for a new purchase. By this arrangement the advance of the apron is more steady than if a pawl and ratchet were employed. The cotton descends upon the apron as soon as its weight becomes sufficient to overcome the suction above, as hereinbefore explained.

It is evident that my device could be varied in many slight ways which might suggest themselves to a skilled mechanic. Therefore I do not confine myself to the exact construction herein shown and described, but

consider myself entitled to all such variations as come within the spirit and scope of my invention.

What I claim as new, and desire to secure by Letters Patent, is—

1. In a cotton elevator or conveyer, the combination of an air-flue and fan, a diagonal deflector composed of a series of parallel bars placed across the flue, a receptacle located below the deflector, and an endless apron located at the bottom of the receptacle, all arranged in the manner and for the purpose set forth.

2. In a cotton elevator or conveyer, the combination of an air-flue, fan, and deflector, a traveling apron located at the bottom of the receptacle, a spiked cylinder, an eccentric secured to rotate with the journal of said cylinder, a driving-rod actuated by the eccentric, rollers carrying said traveling apron, a rock-arm mounted on the axis of one of said rollers, an arm attached to the rock-arm, a pulley secured to rotate with said rollers, and a friction-shoe arranged to engage the periphery of said pulley, all arranged and adapted to operate in the manner and for the purpose substantially as described.

3. In a cotton elevator or conveyer, an air-flue and fan, in combination with a diagonal deflector placed across the flue, a receptacle located below the deflector, a traveling apron at the bottom of the receptacle, and an elevating-cylinder, as and for the purpose set forth.

4. In a cotton elevator or conveyer, an air-flue, fan, and receptacle, in combination with a traveling apron located across the bottom of the receptacle and actuated by a rock-arm, friction-shoe, and wheel, in the manner and for the purpose substantially as described.

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

JOHN B. CLOPTON.

Witnesses:

A. C. ERHARD,
J. D. CLAIBORNE.