

I. F. BROWN.
COTTON-GIN FEEDER.

No. 177,199.

Patented May 9, 1876.

Fig. 1.

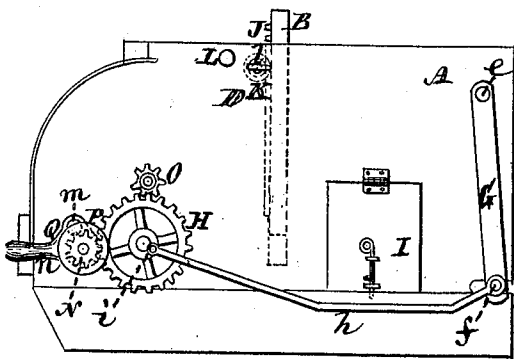


Fig. 2.

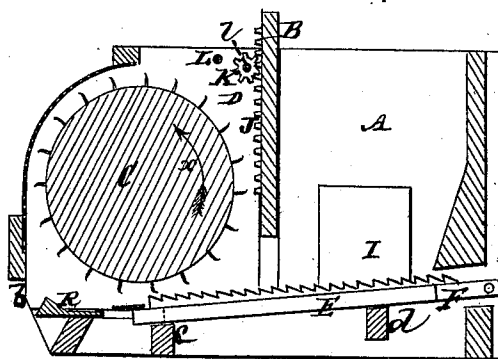


Fig. 3.

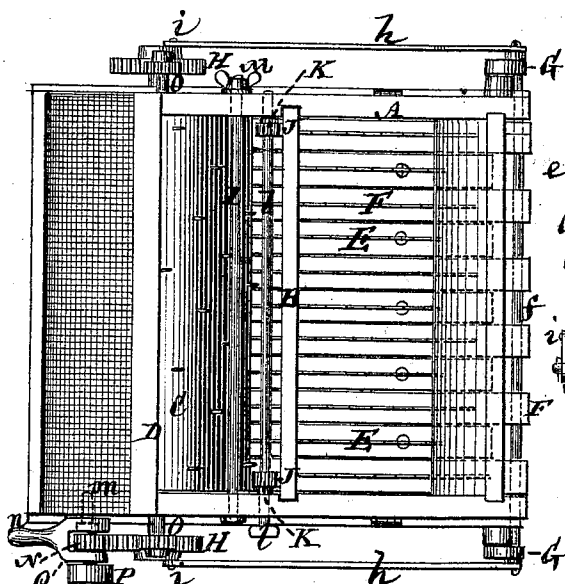
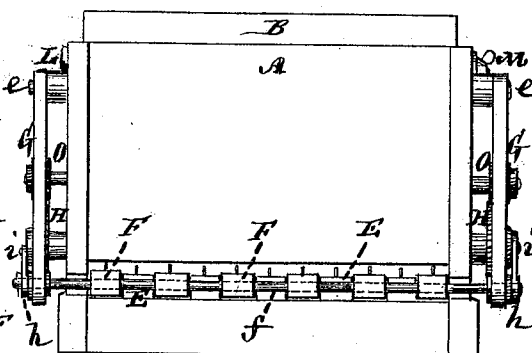


Fig. 4.



Witnesses
John Becker
J. H. Haynes

Israel F. Brown
By his Attorneys
Brown & Allen.

UNITED STATES PATENT OFFICE.

ISRAEL F. BROWN, OF NEW LONDON, CONNECTICUT.

IMPROVEMENT IN COTTON-GIN FEEDERS.

Specification forming part of Letters Patent No. 177,199, dated May 9, 1876; application filed October 19, 1875.

To all whom it may concern:

Be it known that I, ISRAEL F. BROWN, of New London, in the county of New London and State of Connecticut, have invented new and useful Improvements in Feeders for Cotton-Gins; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawing, which forms part of this specification.

This invention relates to feeding chambers or hoppers for cotton-gins, provided with means for picking open and separating lumps and matted seed-cotton, and feeding it steadily and uniformly to the gin.

The invention, which is applicable either to saw-gins or roller-gins, consists in novel means in the bottom of the feed-box or hopper for feeding the cotton to the hopper-cylinder, which passes it to the gin; likewise in novel means for clamping or holding the feed-board, under which the cotton is fed to the toothed cylinder.

Figure 1 is a side view of a cotton-gin feeder, having my invention applied. Fig. 2 is a centrally vertical longitudinal section of said feeder. Fig. 3 is a plan view thereof; and Fig. 4 a rear elevation of the same.

A is the receiving-chamber, into which the cotton to be fed is thrown or placed, and B a feed-board, adjustable up or down, and beneath which the cotton is passed to and up over the revolving toothed cylinder C that conveys or passes it in a picked or separated condition, and through a front opening, *b*, to the gin. In the bottom of the receiving-chamber A, and extending beneath the feed-board B into the bottom of the chamber D, within which the toothed cylinder C operates, are a series of ratchet shaped or toothed bars, E F, arranged to lie side by side, and preferably set inclining downward from the back of the receiving-chamber to their forward ends below the toothed cylinder C. These ratchet shaped or toothed bars E F form the means for feeding the cotton to the toothed cylinder C, which latter rotates in the direction indicated by the arrow *z*. Said feeding-bars are alternately or intermediately stationary, and the other bars made to reciprocate in direction of their length. Thus every other

bar E may be stationary, and the intermediate bars F reciprocating. Both sets of bars, however, are provided with thin ratchet-shaped or inclined teeth, arranged so that the bars F, when moving forward, feed the cotton to the toothed cylinder C without much or any interruption from the teeth of the stationary bars E, and so that the teeth of the latter hold on to the cotton so fed, and prevent it from being drawn backward by the teeth of the reciprocating bars F, when moving backward. Although these bars are here shown of a rectangular construction with thin ratchet-shaped teeth on their upper faces, they may be made of wire, suitably bent, or fashioned to form inclined teeth.

The stationary bars E may be secured to cross-beams *c d* of the frame, but the reciprocating bars F need only rest on, and slide over, the front beam *c*, and are supported or carried at their backs by pendent side rockers G, having their pivots at *e*, and connected below by a cross-rod, *f*, with the rear ends of the reciprocating bars. Thus hanging or carrying the reciprocating bars admits of their easy movement, and does away with much friction, inasmuch as their weight is transferred to the pivots *e*, and the rockers G form a ready means for reciprocating the bars F by or through connecting-rods *h*, and crank or eccentric pins *i* on revolving toothed side gears H.

The receiving-chamber A is provided in either or both of its sides with lower doors I, to enable the attendant to insert his hands and arms for the purpose of reaching and removing stones, bolls, or other matters or obstacles, and thereby dispensing with the necessity of the attendant getting into the hopper or feed-box for the purpose.

The feed-board B, under which the cotton is fed to the toothed cylinder C, is adjustable up or down, for the purpose of regulating the supply to said cylinder, by means of duplicate racks J J at or near opposite ends of said feed-board—that is, on both sides of the feeder. These racks have pinions K K gearing with them, which pinions are fast on a cross-shaft, *l*, so that by turning the latter the feed-board B is simultaneously and uniformly raised or lowered at both of its ends, thus doing away with the difficulty of adjusting both sides or

ends alike, and providing for the easier manipulation or adjustment of said board. These adjusting means, however, are insufficient of themselves to hold the feed-board in position after adjustment, by reason of the great weight of said board, the ends of which fit vertical ways in the sides of the feeder case. To hold or secure the feed-board, when adjusted, I combine with the adjusting means a clamping bar or rod, L, which extends across the feeder from side to side in proximity to the feed-board, and which bar is provided with a screw-thread on its one end, and a screw-nut, M, fitting the same, so that by screwing up the nut the sides of the feeder-case are sprung or caused to bind on the ends of the feed-board C, and hold the latter in position, as required.

Motion is communicated to the feeder by a pinion, N, arranged to gear with the one spur-wheel H on the one side of the feeder. This wheel H operates a pinion, O, on the one end of the shaft of the toothed cylinder C, and on the other end of said cylinder-shaft is a corresponding pinion, O, which serves to drive the spur-wheel H on the other side of the feeder. To provide for throwing the feeder out of gear, and to quickly stop it in case of any choking of the gin, or under other circumstances, the pinion N, which receives its motion from the

gin by a pulley, P, is, together with said pulley on the same shaft as the pinion, carried by a shifter, Q, working on a pivot, m, and provided with a handle, n, whereby the pinion may be rapidly thrown out of gear with the wheel H on the same side of the feeder, and so stop the motion of the latter.

The bottom of the chamber D is provided with a sliding board or gate, R, for letting out dirt and trash liberated from the cotton by the revolving toothed cylinder C or carried into the chamber D by the feeding-bars F.

I claim—

1. The combination of the toothed cylinder C, rotating as described, the stationary bars E, and intermediate reciprocating feed-bars F, arranged in the bottom of the hopper or receiving-chamber A, and both provided with ratchet-shaped or inclined teeth, substantially as specified.

2. The combination, with the adjustable feed-board B and sides of the case, in which it works, of the clamping-bar L and its screw-nut M, essentially as and for the purpose herein described.

ISRAEL F. BROWN.

Witnesses:

A. C. LIPPITT, Jr.,
T. V. BLACK.