(No Model.) 2 Sheets—Sheet 1.

J. W. SMITH.

COTTON GIN FEEDER.

No. 464,483. Patented Dec. 1, 1891.

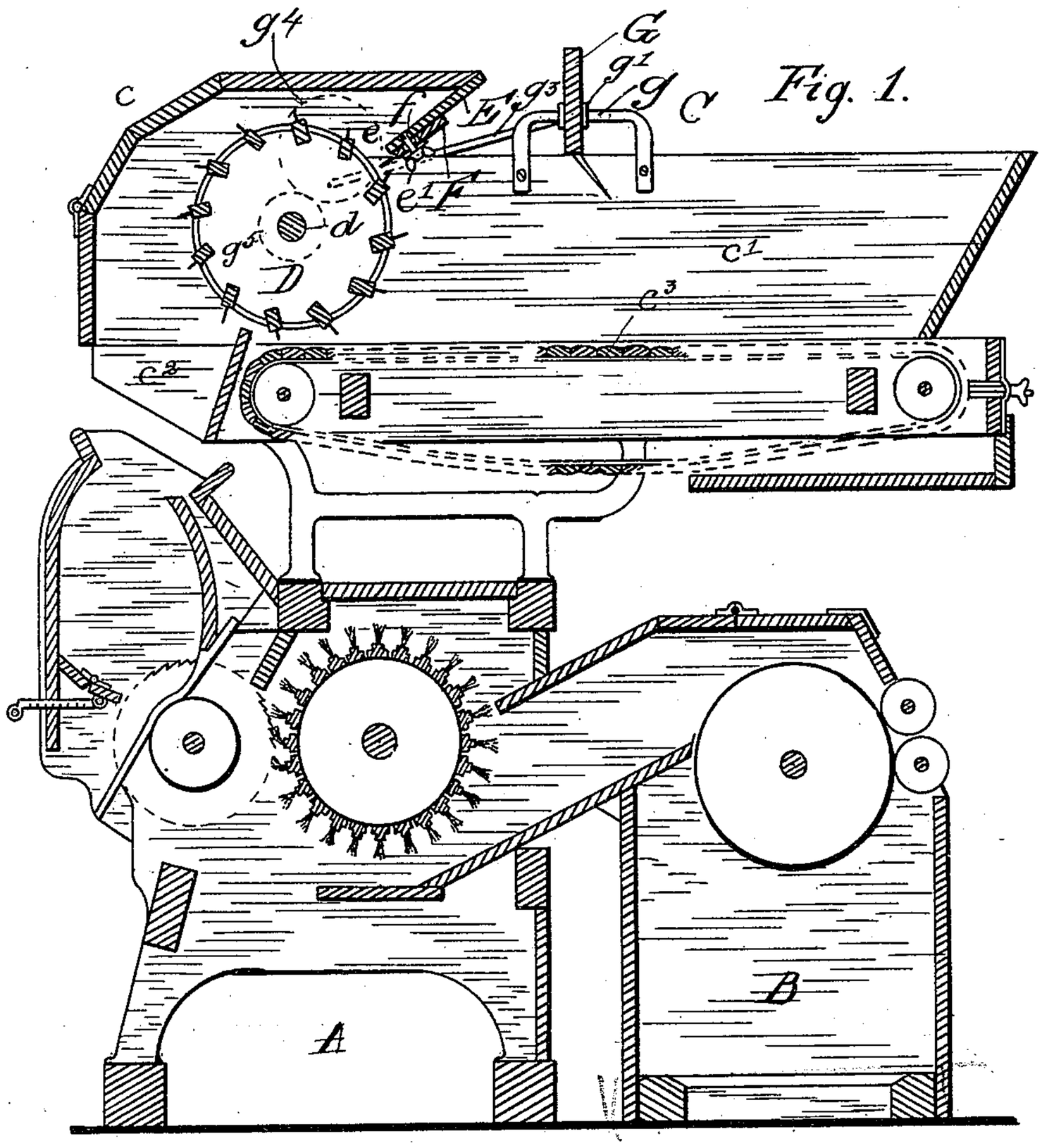

Fig. 1.

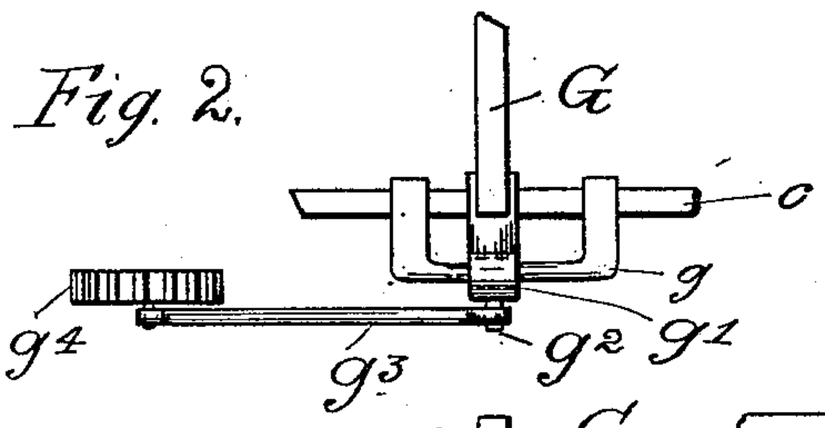

Fig. 2.

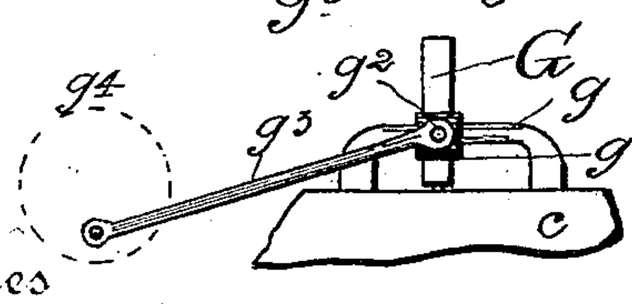

Fig. 3.

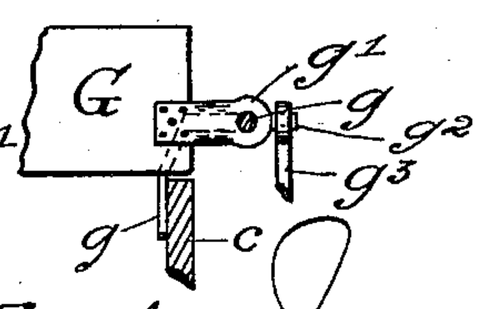

Fig. 4.

Witnesses
R. P. Wood
S. M. Wood

Inventor
J. W. Smith.
By his Attorney
Albert A. Wood.

(No Model.) 2 Sheets—Sheet 2.

J. W. SMITH.

COTTON GIN FEEDER.

No. 464,483. Patented Dec. 1, 1891.

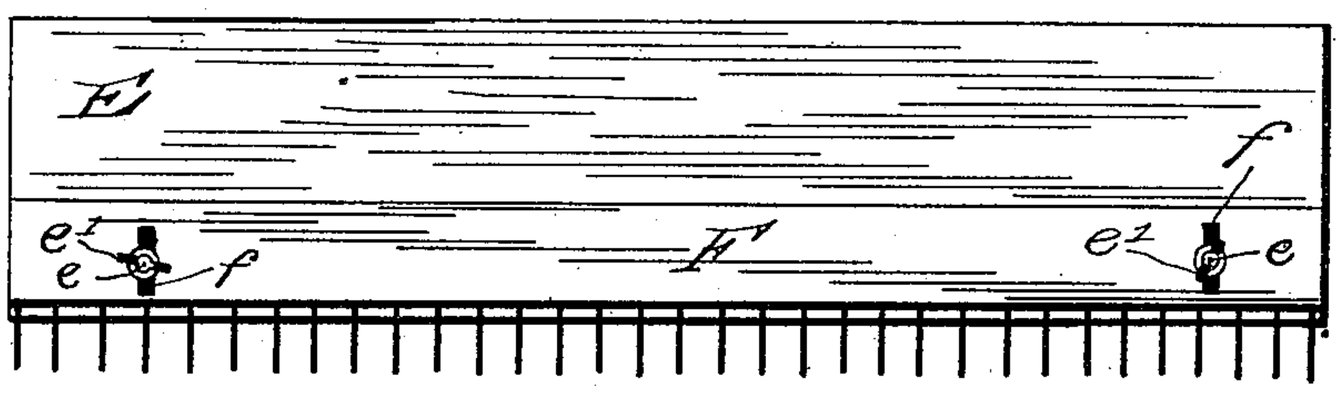

Fig. 6.

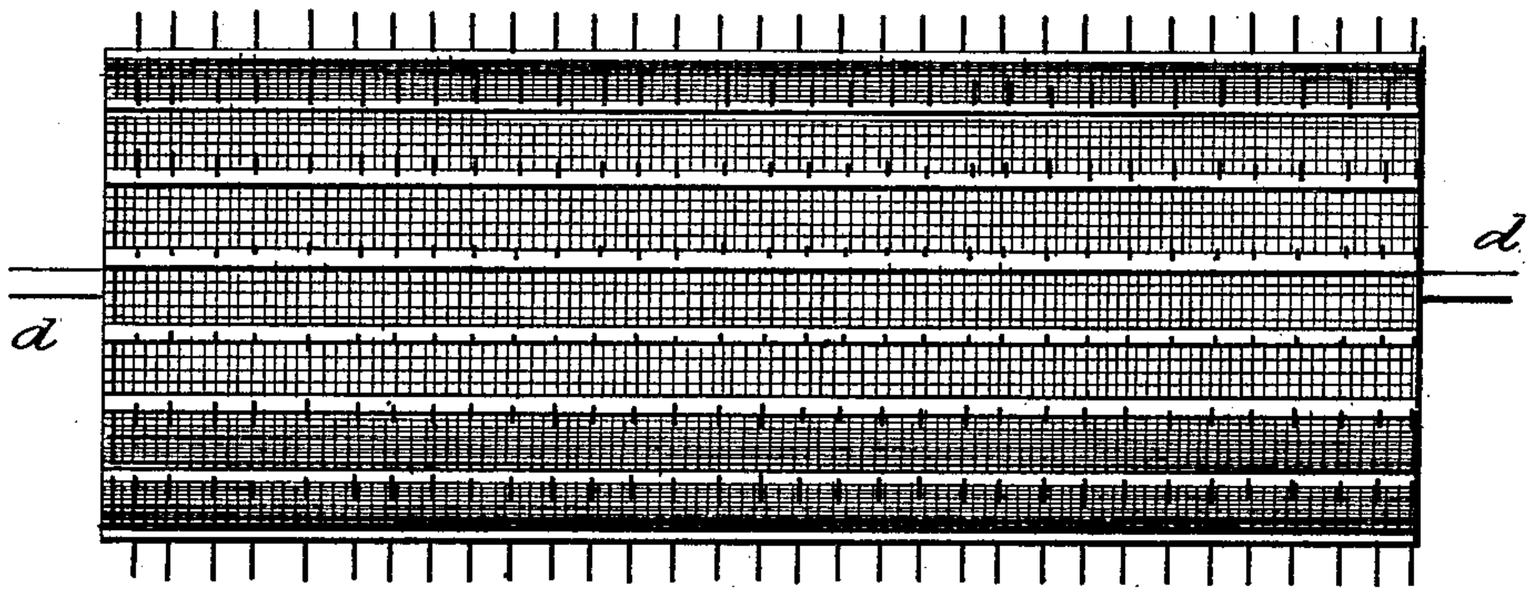

Fig. 5.

Witnesses
A. P. Wood.
S. M. Wood.

Inventor
Jeremiah W. Smith.
By his Attorney
Albert A. Wood.

UNITED STATES PATENT OFFICE.

JEREMIAH W. SMITH, OF ATHENS, GEORGIA.

COTTON-GIN FEEDER.

SPECIFICATION forming part of Letters Patent No. 464,483, dated December 1, 1891.

Application filed January 15, 1891. Serial No. 377,898. (No model.)

To all whom it may concern:

Be it known that I, JEREMIAH W. SMITH, a citizen of the United States, and a resident of Athens, in the county of Clarke and State of Georgia, have invented certain new and useful Improvements in Cotton-Gin Feeders; and I do 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, reference being had to the accompanying drawings, and to letters of reference marked thereon, which form a part of this specification.

This invention relates to machines commonly known as "gin-feeders," their function being to supply the seed-cotton to roll-boxes of cotton-gins in a regular quantity, as called for by the roll, the object being to so improve such devices as to produce a feeder that will be equal to the requirement by being both regular and sure in its action, as well as performing the duty of cleaning the cotton of sand, dust, and gravel, the details of construction whereby these ends are attained being fully specified hereinafter, and the parts for which special novelty is claimed will be pointed out in the claims.

In the accompanying drawings, Figure 1 is a vertical longitudinal section through a complete stand for ginning, with the improved feeder attached, and a condenser for assembling the lint cotton after ginning into a loose bat. Fig. 2 is a plan of a detail portion of the device, showing the reciprocating board and means for causing its vibration. Fig. 3 is an end view of the device shown in Fig. 2, further illustrating the elements therein shown. Fig. 4 is a detail showing a side elevation of the board and its guide and also the pitman attachment. Fig. 5 is a side elevation of a portion of the spiked roller of the feeder, showing its covering of wire-cloth. Fig. 6 is an inverted plan view of the adjusting-comb.

In the figures like reference-characters will be employed in the designation of corresponding parts throughout the drawings.

A is a gin, and B a condenser, which may be of any of the ordinary and well-known constructions, inasmuch as the requirements as to feeding of all gins is the same as regard steadiness of feeding to keep the roll of the proper hardness to drive easily, keep compact, and yet render its constituent cotton to the saws when required.

The feeder C, as regards to casing *c*, reservoir *c'* therein, and outlet-chute c^2, together with the conveyer-belt c^3 in the bottom of the reservoir, is of the ordinary construction and may be obviously varied to suit the preference of the manufacturer as to the proper construction and arrangement of these elements so long as a feeding is not produced thereby which will be incompatible with the additions forming the subject-matter of the present improvements. The reservoir *c'* is always filled with cotton and kept full by the addition of a basketful at a time, the movement of the belt causing the whole mass to move toward the drum D, and consequently leaving room from top to bottom at the back for the addition of cotton as required from time to time.

The drum D, as shown in Figs. 1 and 5, is journaled in the casing, is cylindrical in form, and has spikes projecting from its surface at the desired intervals circumferentially and longitudinally, which spikes are of sufficient dimensions to pick up the cotton from the belt and carry it and drop it into the roll-box of the gin. The circumferential surface of the said drum is covered with wire-cloth or otherwise suitably perforated at short intervals from its periphery to its interior, the advantageous function of which peculiar construction will be hereinafter described. In order to stop the surplus cotton from passing over the drum D into the roll-box and so choke the roll, a device of substantially the following construction has been devised: Secured to the casing *c*, and standing transversely thereof and substantially radial to the drum, is a board E, which has adjustably secured to the under side thereof, as seen in Fig. 6, the gate or comb F, which comb is provided with a row of spikes on its edge, and by means of the adjustability of said board just mentioned the same being provided for by means of slots *f* in the said comb, through which pass studs *e*, projecting from the board E, provided with fly-nuts *e'*. The said comb may be moved toward and away from the spiked periphery of the drum D, according to whether a little or considerable cotton is re-

quired by the roll. It will also be observed that the comb F has motion at each end independently of the other end, by means of which any difference in the capacity of the saws forming either end of the saw-cylinder in the gin may be compensated for by feeding the most cotton to the end having the sharpest saws, and the roll be thus kept from breaking or twisting or becoming too hard and so holding the cotton from the saws, causing them to nap and break the same. As the seed-cotton carried by the spikes on the drum D pass the spikes carried by the comb F, said cotton will be agitated and combed thereby and all the sand and dust which the said cotton contains will be knocked out and will pass into the drum through the perforated peripheral covering thereof, and will fall down through said drum and be dropped at the bottom on the belt, as well as small gravel, sticks, &c., the belt moving in the direction of the arrow, carrying the same downwardly and dropping it into a suitable receptacle on the top of the gin A, whence it may be removed when desired. Large stones will not be lifted by the pins in the drum, only such small ones as would become incorporated in the cotton and be carried thereby.

Capable of vibration on suitable guides g, attached to the side pieces of the casing c, are carriers g', which have suspended between them the board G, which is provided with spikes preferably projecting in the direction shown in Fig. 1. Said guides are preferably of wrought-iron bent downward at each end, the middle portion being rounded to fit a hole on the carrier g' and the ends being bent downwardly and being provided with holes to receive wood-screws for the purpose of attaching said guides to the side pieces of the casing. The carriers g' may be of any form desired, so long as the board G is appropriately suspended between them, and at the opposite end of each corner from the end on which is secured said board is a pin g^2, upon which oscillates the end of the pitman g^3, the other end being attached to a crank on the spur-gear g^4, which said gear engages with the pinion g^5 on the shaft d of the drum D, the said gears being in the proportion necessary to the speed ratio between the said drum and the reciprocating board G. The devices just mentioned for the purpose of vibrating the said board are duplicated upon both sides of the casing, in order that both ends of the said board may be caused to alternate in motion, which would tend to keep the pile of seed-cotton highest in the center, and so prevent overflow were the reservoir carelessly piled too full for use even with this device. This vibrating board keeps the pile of cotton pushed back and keeps the cotton contacting with drum D always at the same height and same density, which greatly ministers to the equability of the feeding, as the cotton will not be packed upon the drum, and by reason of the spikes in and the vibrating motion of the said board the cotton will not by frictional contact with the moving conveyer-belt be packed and forced under the board G.

The manipulation of the seed-cotton in the feeder will materially loosen up the locks of cotton and cause the gin to make a better sample than would otherwise be the case.

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

1. In a device of the class specified, a casing and a belt running in the bottom thereof, horizontal guides g, secured to the casing sides, a board hung between carriers adapted to be reciprocated upon said guides, said board being provided on its lower edge with teeth projecting at an angle approximating forty-five degrees downwardly and forwardly therefrom, and a crank and a pitman connection for reciprocating said board, all combined, arranged, and operating substantially as and for the purpose specified.

2. In a device of the class specified, casing A, drum D, mounted and revolving therein and having spiked slats at intervals circumferentially over its peripheral surface, and a screen-cloth secured to said slats and extending across said intervals, substantially as and for the purpose specified.

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

JEREMIAH W. SMITH.

Witnesses:

J. F. WILLS,

T. P. VINCENT.