

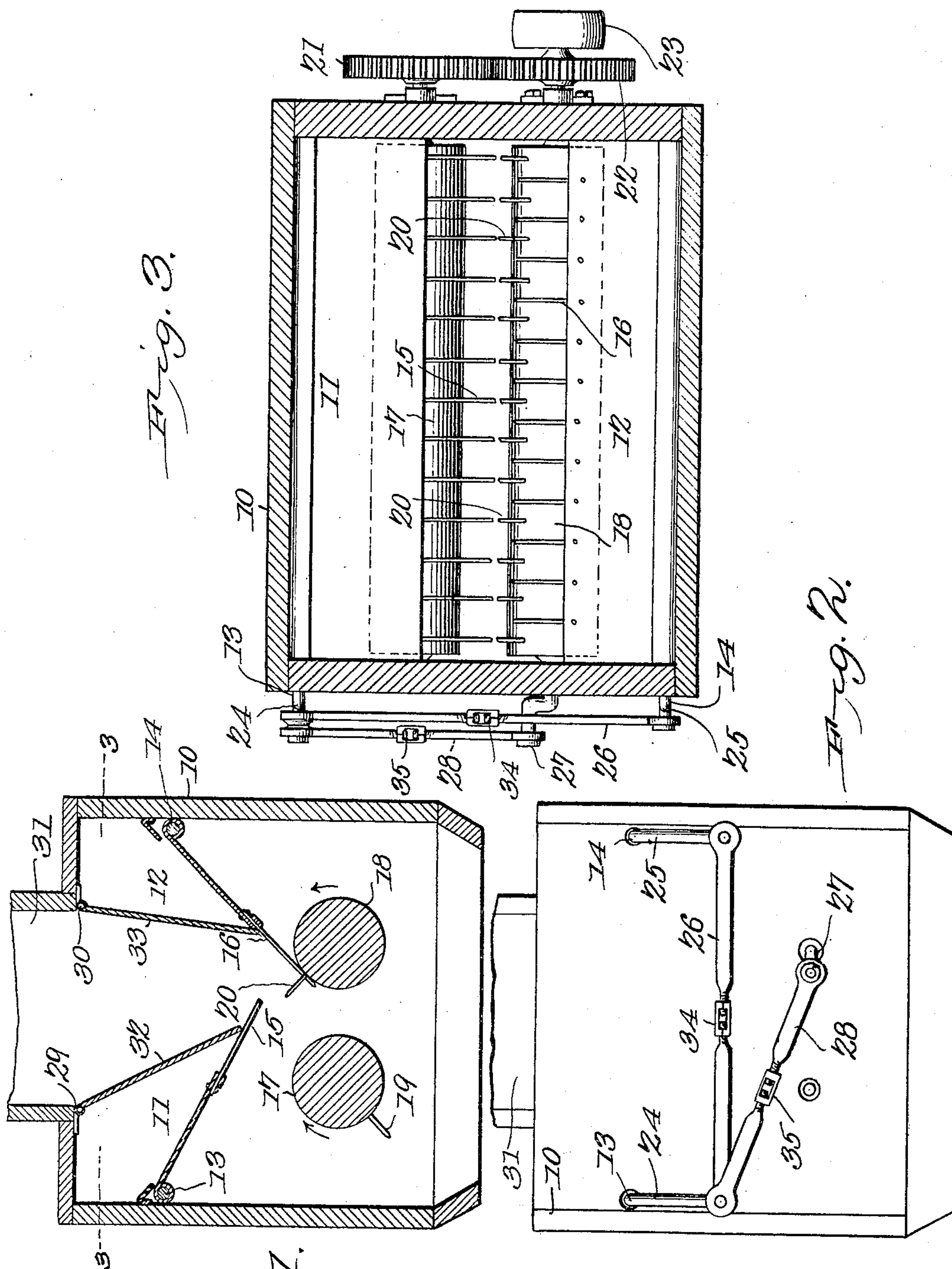
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PATENTED JULY 26, 1904.

E. MATTHIS.  
COTTON GIN FEEDER.

APPLICATION FILED DEC. 28, 1903.

NO MODEL.



Witnesses  
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# UNITED STATES PATENT OFFICE.

EUGENE MATTHIS, OF HAHIRA, GEORGIA.

## COTTON-GIN FEEDER.

SPECIFICATION forming part of Letters Patent No. 766,052, dated July 26, 1904.

Application filed December 28, 1903. Serial No. 186,844. (No model.)

*To all whom it may concern:*

Be it known that I, EUGENE MATTHIS, a citizen of the United States, residing at Hahira, in the county of Lowndes and State of Georgia, have invented a new and useful Cotton-Gin Feeder, of which the following is a specification.

This invention relates to cotton-gin feeders.

The object of the invention is in a ready, simple, thoroughly-feasible, and practical manner to feed seed-cotton to the gin-saws in a uniform and continuous stream or web, thereby to insure regularity in the bats, positively to control the capacity of the feeding mechanism to cause it under all conditions to do effective work, and generally to improve and render more efficient devices of the class of inventions to which this machine belongs.

With the above and other objects in view, as will appear as the nature of the invention is better understood, the same consists in the novel construction and combination of parts of a cotton-gin feeder, as will be hereinafter fully described and claimed.

In the accompanying drawings, forming a part of the specification, and in which like characters of reference indicate corresponding parts, there is illustrated one form of embodiment of the invention capable of carrying the same into practical operation, it being understood that the elements therein exhibited may be varied or changed as to shape, proportion, and exact manner of assemblage without departing from the spirit thereof; and in these drawings Figure 1 is a view in transverse section through a machine embodying the improvements of the present invention. Fig. 2 is a view in end elevation exhibiting the means for actuating the feeding mechanism. Fig. 3 is a view in horizontal section taken on the line 3-3, Fig. 1, and looking downward.

It may be stated that the machine of this invention is adapted more particularly for feeding long-staple cotton; but it operates in a thoroughly-efficient manner in handling short cotton. Furthermore, while the machine is described as being employed for feeding cotton to a cotton-gin, it is to be understood that the invention is not to be limited to this use alone, as it may be employed to

feed different materials to separating-machines of various kinds and still be within the scope of the invention.

The machine comprises a receptacle 10 of any desired form or size, and when employed in connection with a cotton-gin will generally correspond in length to the saw-shaft and will preferably be of a capacity corresponding to that of the gin; but, as will be apparent, it may vary in size, according to the capacity of the machine with which it is associated. Arranged within the receptacle and disposed at opposite sides thereof are retarding-plates 11 and 12, which are supported at their outer edges by shafts 13 and 14, journaled in the walls of the receptacle and provided at their inner edges with spaced fingers 15 and 16, which interengage when the plates are vibrated. The plates will preferably be made of sheet-steel; but they may be made of any other suitable material for the purpose, and the fingers will be held combined therewith in any manner that will permit of separation when repairs are necessary, as in case of breakage of one or more of the fingers.

The feed hopper or chute 31 has plates or boards 32 and 33 hinged to its mouth at 29 and 30, which plates or boards rest loosely at their free edges upon the fingers 15 and 16 or upon the plates 11 and 12, as clearly shown in Fig. 1. These plates or boards, which in operation constitute clearers or scrapers, perform the very important functions of assisting the guiding of the material to the feeding mechanism and, further, of preventing the material from banking up against the sides of the casing, which would interfere with the operation of the machine. A further and more important function of these clearers is that under the operation of the machine any cotton which might lodge or become jammed between the fingers is automatically and positively removed, so that the full feeding capacity of the machine will always be secured.

Disposed within the receptacle beneath the plates 11 and 12 and supported for rotary movement therein are rollers 17 and 18, each having in this instance one row of radially-disposed spaced teeth 19 and 20, said teeth being disposed to break joint or enter between



the fingers 15 and 16, as shown in Fig. 3. The operating mechanism is so arranged that the plates are vibrated alternately, and under this arrangement when one plate is depressed with its fingers between the teeth of its respective roller, as shown at the right in Fig. 1, the other plate is elevated with its fingers farthest removed from the teeth of its respective roller, as shown at the left in Fig. 1, and by this arrangement there will be no interference between the retarding-plates such as would tend to prevent the proper operation of the machine.

The mechanism by which the rollers are rotated consists of two intermeshing gears 21 and 22, carried by the shafts of the respective roller, and a drive-pulley 23 upon one of the shafts, by which motion is imparted to the gears to drive the rollers in opposite directions.

The shafts 13 and 14 of the retarding-plates project at one end beyond the receptacle and are formed into or provided with relatively long crank-arms 24 and 25, connected by a rod 26, and one of the roller-shafts is also projected at one end beyond the receptacle and is formed into or provided with a relatively short crank-arm 27, which is connected by a rod 28, in this instance with the crank-arm 24. As it will be seen by reference to Fig. 2, the rods 26 and 28 are each composed of two sections, the sections of the rod 26 being connected by a turnbuckle 34 and the sections of the rod 28 being connected by a turnbuckle 35. The provision of these turnbuckles is of great importance, inasmuch as through them the feed of material through the machine may be regulated at will. Thus, for instance, should it be desired to cause the machine to feed to its fullest capacity the turnbuckle 34 will be adjusted to allow the fingers of the retarding-plates when depressed to rest upon their respective rollers, and this will permit the full length of the teeth of the rollers to project beyond the fingers and remove large bulks of cotton. If, on the other hand, it be desired to decrease the feed of the machine, the turnbuckle 34 will be turned to shorten the rod 26, and thereby hold the retarding-plates when in their depressed positions at any desired distance above the rollers, thus allowing only a part of the length of the teeth of the feed-rollers to project beyond the fingers of the plates. Of course when the length of the rod 26 is altered that of the rod 28 has correspondingly to be adjusted, as will readily be understood.

By the arrangement of the mechanism shown and described it will be seen that when the pulley 23 is driven from any suitable source of power the rollers will be driven in opposite directions and the retarding-plates, through the medium of the cranks 24, 25, and 27, and rods 26 and 28, are vibrated alternately.

In the operation of the machine the cotton

always presses upon the retarding-plates, and as the roller, the teeth of which are projecting through the fingers of its respective plate, is revolved in the direction of the arrow the teeth catch a certain percentage of the cotton, strip it from the fingers, and deliver it to the gin-saw hopper, the bulk of the material in the meantime being held back or retarded by the other retarding-plate, thus to prevent any clogging of the rollers. As the retarding-plate just in operation starts to lift the clearer coacting therewith strips or removes any cotton between the fingers, thus keeping them clear at all times. The same operation takes place with the other feed-roller, retarding-plate, and clearer, and therefore needs no further description.

It will be seen from the foregoing description that a simple and thoroughly-efficient feeding apparatus is presented for the purpose designed and one that will not be liable to become deranged from long-continued use. The machine as a whole is constructed with a view to simplicity, and as none of the parts employed are intricate in character repairs may readily be made in case of damage or breakage.

Having thus fully described my invention, what I claim is—

1. In an apparatus of the class described, a retarding-plate having fingers, a toothed roller, means for vibrating the retarding-plate, and means for rotating the roller to cause its teeth to pass between the fingers of the retarding-plate.

2. In an apparatus of the class described, a retarding-plate having fingers, a toothed roller, means for vibrating the retarding-plate, means for rotating the roller to cause its teeth to pass between the fingers of the retarding-plate, and automatically-operating means for stripping the fingers of any retained material.

3. In an apparatus of the class described, a retarding-plate having fingers, a toothed roller having radially-disposed teeth, means for moving the retarding-plate toward the roller, and means for rotating the roller to cause its teeth to pass between the fingers of the retarding-plate.

4. In an apparatus of the class described, a toothed roller, a retarding-plate having teeth, means for moving the fingers of the retarding-plate into coöperative relation with the teeth of the roller, and means for adjusting the plate with relation to the roller.

5. In an apparatus of the class described, a retarding-plate having fingers, a toothed roller, means for vibrating the retarding-plate to and from the roller, and means for varying the vibrations of the plate.

6. In an apparatus of the class described, a toothed roller, a retarding-plate having fingers between which teeth of the roller are adapted to pass, and mechanism for vibrating



the retarding-plate including means for varying the arc of movement of the plate with relation to the roller.

7. In an apparatus of the class described, a retarding-plate having teeth, a shaft for supporting the plate and provided at one terminal with a crank, a toothed roller having one terminal of its shaft provided with a crank, a rod connecting the two said cranks and including adjusting mechanism, and means for driving the roller.

8. In an apparatus of the class described, a pair of oppositely-disposed retarding-plates having fingers, a pair of toothed rollers, means for vibrating the retarding-plates, and means for rotating the rollers to cause their teeth to pass between the fingers of the retarding-plates.

9. In an apparatus of the class described, a pair of oppositely-disposed retarding-plates having fingers, a pair of toothed rollers, means for rotating the rollers, and means for alternately vibrating the retarding-plates to bring their fingers into coöperative relation with the teeth of the rollers.

10. In an apparatus of the class described, a receptacle, a pair of oppositely-disposed retarding-plates supported at their upper ends therein and having their lower ends provided with fingers, a pair of toothed rollers, means for rotating the rollers, and means for alternately vibrating the retarding-plates to bring their fingers into coöperative relation with the teeth of the rollers.

11. In an apparatus of the class described, a receptacle, a pair of oppositely-disposed retarding-plates supported at their upper ends therein and having their lower ends provided with fingers, a pair of toothed rollers, means for rotating the rollers, means for effecting automatic clearing of the fingers of the accumulated material, and means for alternately vibrating the retarding-plates to bring their fingers into coöperative relation with the teeth of the rollers.

12. In an apparatus of the class described, a receptacle, a shaft supported on each side wall thereof, one end of each of the shafts being projected through the receptacle and formed or provided with a crank, retarding-plates se-

cured to the shafts and having their lower ends furnished with fingers, scraping devices depending from the upper side of the receptacle and coacting with the fingers of the retarding-plates, and a pair of toothed rollers, the shaft of one of which is formed or provided with a crank, an adjustable rod connecting the cranks of the retarding-plate shafts, and an adjustable rod connecting the crank of the roller with the crank of one of the retarding-plate shafts.

13. In an apparatus of the class described, a retarding-plate having fingers, a toothed roller with which, at intervals, the plate coacts, and means for clearing the fingers of material.

14. In an apparatus of the class described, a retarding-plate having fingers, a toothed roller, means for vibrating the retarding-plate to and from the roller, and means operating automatically to clear the fingers of material on the upward movement of the plate.

15. In an apparatus of the class described, a retarding-plate having fingers, a toothed roller, means for vibrating the retarding-plate to and from the roller, means for clearing the fingers of retained material, and means for varying the vibrations of the plate.

16. In an apparatus of the class described, a retarding-plate supported for swinging movement at its upper end and having its lower end provided with fingers, a toothed roller disposed below the plate, means for vibrating the retarding-plate to and from the roller, and a finger-cleaning element supported for swinging movement above the retarding-plate.

17. In an apparatus of the class described, the combination with feeding mechanism, of a material-feed-retarding device, means for vibrating the feed-retarding device to and from the feeding mechanism, and means for varying the vibrations of the feed-retarding device thus to vary the supply of material to the feeding mechanism.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

EUGENE MATTHIS.

Witnesses:

F. H. GASKINS, Jr.,

J. W. OVERSTREET.