May 15, 1923.

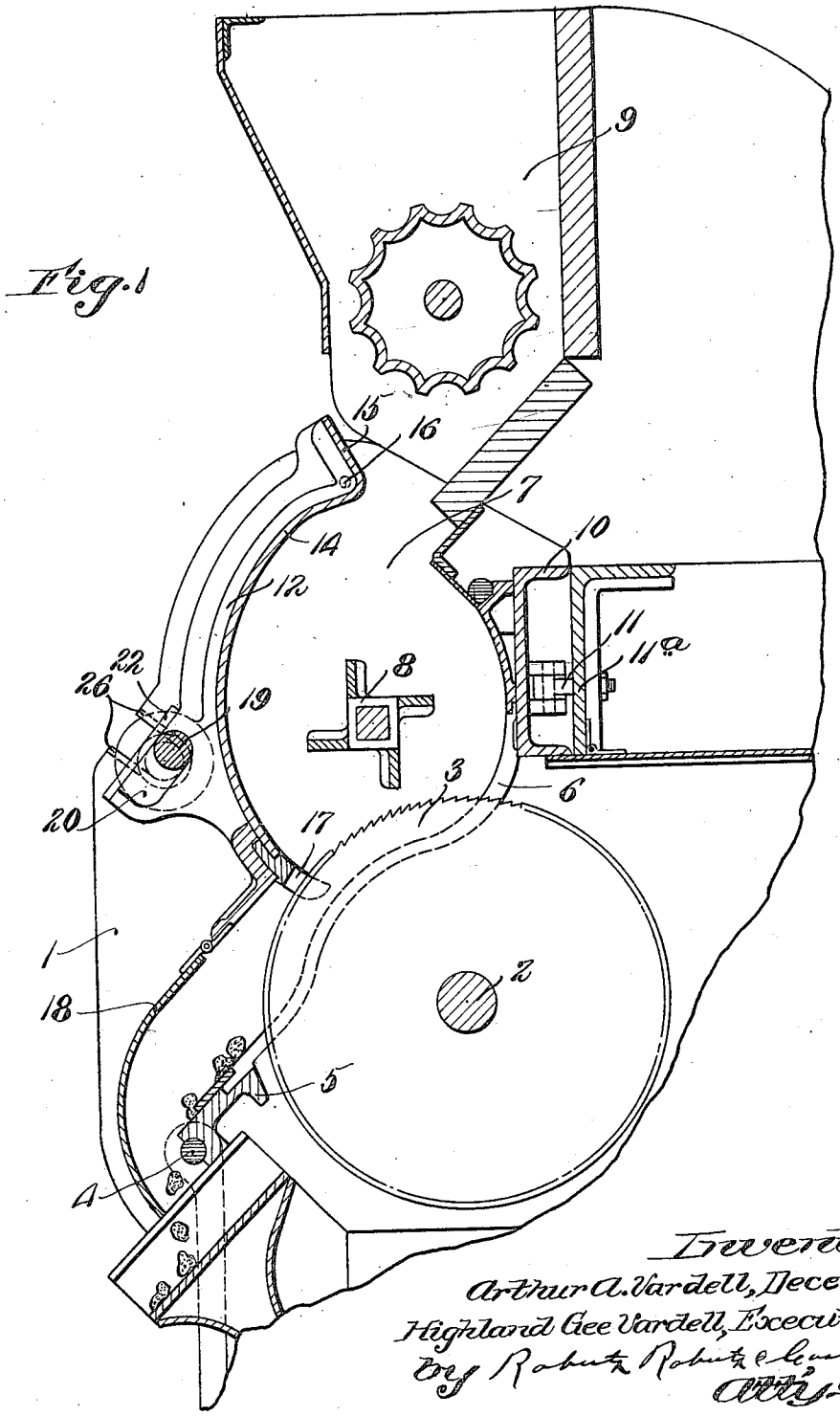
1,455,685

A. A. VARDELL

ROLL BOX STRUCTURE FOR GINS

Original Filed Nov. 30, 1920 2 Sheets-Sheet 1

Fig. 1



Inventor:
Arthur A. Vardell, Deceased.
Highland Gee Vardell, Executrix.
By Roberts Roberts & Cushman
Attys.

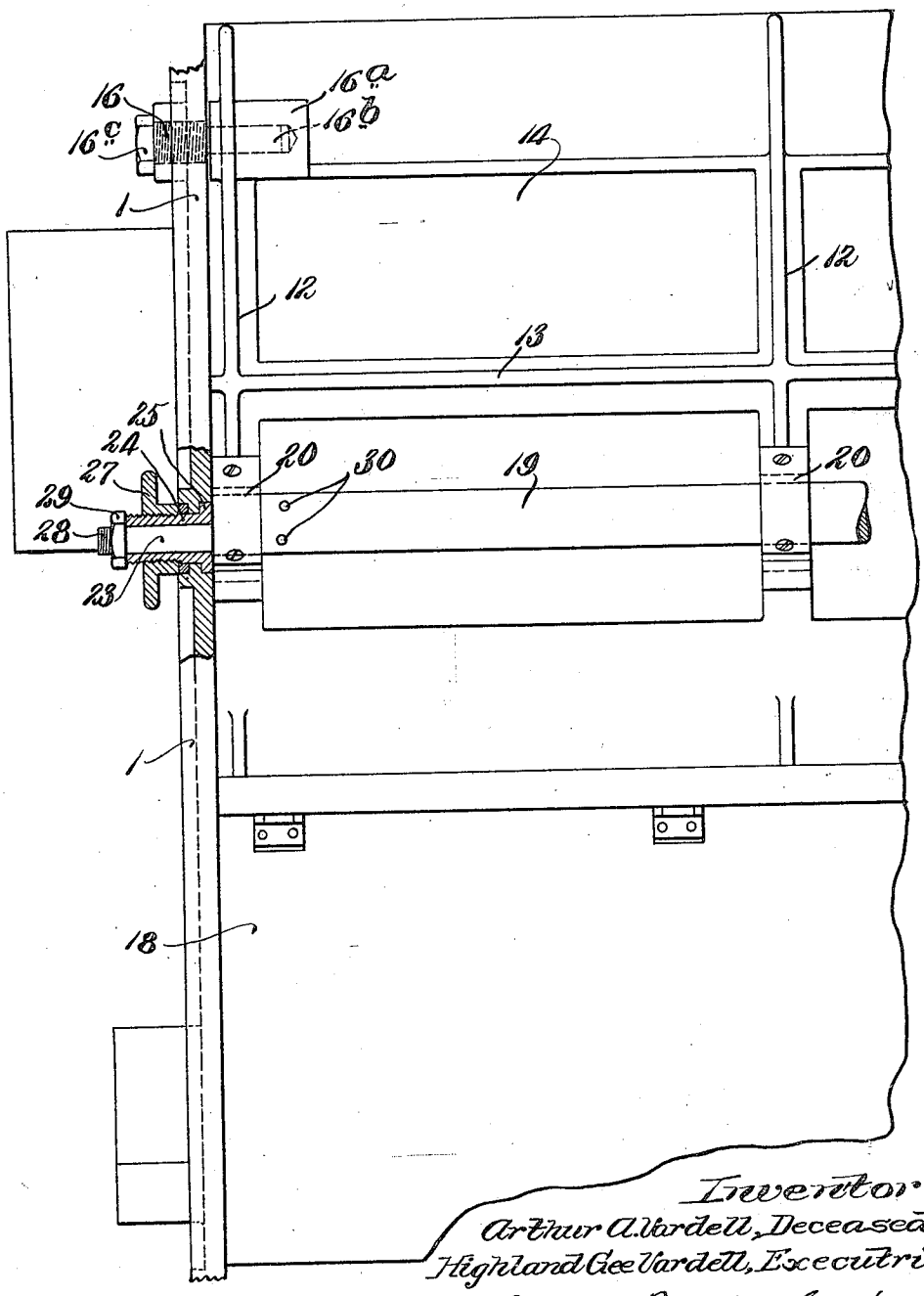
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Fig. 2



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Patented May 15, 1923. 1,455,685

UNITED STATES PATENT OFFICE.

ARTHUR A. VARDELL, DECEASED, LATE OF DALLAS, TEXAS, BY HIGHLAND GEE VARDELL, EXECUTRIX, OF DALLAS, TEXAS, ASSIGNOR TO CARVER COTTON GIN COMPANY, OF EAST BRIDGEWATER, MASSACHUSETTS, A CORPORATION OF MASSACHUSETTS.

ROLL-BOX STRUCTURE FOR GINS.

Original application filed November 30, 1920, Serial No. 427,368. Divided and this application filed September 1, 1922. Serial No. 585,687.

To all whom it may concern:

Be it known that ARTHUR A. VARDELL, deceased, late a citizen of the United States, and resident of Dallas, in the county of Dallas and State of Texas, did invent new and useful Improvements in Roll-Box Structures for Gins, of which the following is a specification.

This invention pertains to cotton gins and the like and relates more particularly to improvements in the roll-box and rake-head commonly forming essential parts of such machines.

As usually constructed gins employ devices in association with the roll-box for retaining the ginned seeds in contact with the saws until they are thoroughly delinted, but efficient action to this end has heretofore been attained with difficulty and only by highly skilled persons by reason of the lack of appropriate means for adjusting the operative elements of the mechanism.

The object of the present invention is accordingly to provide readily manipulated means for adjusting essential elements of the roll-box structure in order to permit a high degree of operative efficiency to be attained even by unskilled workmen. For this purpose the machine comprises a roll-box having a front wall which is pivoted at its upper edge to swing outwardly and away from the cylinder and a rake-head secured to the lower part of such front wall. The function of the rake-head is to determine the degree of contact with the saws of seeds otherwise free to drop out of the roll-box by gravity by positioning these seeds in respect to the rotating saws to determine whether they will be seized by the saws and again taken around with the roll or whether they will drop through the slots in the rake-head and fall out of the machine. The desired automatic action is such as to detain in the roll any seed with enough fibers projecting from it to be at all influenced by the near proximity of the saws, and to this end the present improvements provide for adjustment of the rake-head both axially and radially of the saw cylinder with appropriate means for retaining the rake-head in adjusted position.

In the accompanying drawings there is shown by way of example a prefered arrangement of parts whereby the above object may well be attained and in such drawings:

Fig. 1 is a fragmentary central vertical cross section through a linter gin embodying the present invention; and

Fig. 2 is a front elevation to larger scale showing details of the breast structure of the gin shown in Fig. 1.

The numeral 1 indicates one of the side frame members of a gin of the type disclosed in the application of Arthur A. Vardell, Serial No. 427,368, November 30, 1920, of which this application is a division.

The side frame members, of which but one is shown herein, are provided with journals for a shaft 2 which supports the usual saw cylinder 3. A shaft 4, arranged at the front of the gin, provides a pivotal support for the grate-fall comprising the frame 5 and the spaced bars 6. The gin is provided with a roll-box 7 having the float 8 and the feed box 9 for feeding the fibre into the roll-box. The upper ends of the bars 6 are secured to a channel member 10 which may be removably connected by means of shackle bolts 11 to one of the transverse frame member 11^a. The front wall of the roll-box comprises a grid-like structure having vertical bars 12 and horizontal bars such as 13, together with a sheet metal lining 14. This front wall, commonly termed "the seed board" is provided with an outwardly and upwardly inclined portion 15 constituting the usual hopper for guiding fibre into the roll-box. The grid-like support for the front wall of the roll-box is pivotally mounted adjacent to its upper end upon pivot screws such as 16 which engage threaded openings in the side frame members 1 and whose inner ends 16^b are reduced to enter bearing openings in bosses such as 16^a in the grid frame. A rake-head 17 is secured to the lower edge of the front wall and from such lower edge a hinged cover 18 extends downwardly and forwardly.

A shaft 19 extends transversely across the front wall of the roll-box and is mounted to turn in bearing slots 20 formed in the several ribs 12. These bearing slots are

provided with cover plates 22 which serve to confine the shaft within the slots. At its opposite ends the shaft 19 is provided with eccentric portions such as 23 of reduced diameter and each eccentric portion is arranged to turn in a sleeve 24. Each of the sleeves 24 is provided with a radial flange 25 which slides within a slot defined by the substantially parallel walls 26 in the end frame member 1. This slot is substantially radial as respects the center of the shaft 2, and permits bodily movement of the shaft 19 toward and away from such axis. The outer portion of the sleeve 24 is screw-threaded for the reception of a flanged hand nut 27 by means of which the sleeve 24 may be pinched in the end frame and held in adjusted position. The extremity of the eccentric portion 23 of shaft 19 is screw threaded for the reception of a locking nut 29 and the shaft 19 is furnished with suitable openings 30 for engagement by a spanner wrench.

In adjusting the front wall structure comprising the grid plate and the rake-head, the hand nuts 27 may be loosened and the entire structure swung manually toward or away from the center 2 about the pivot pins 16. After the breast structure has been roughly adjusted in this manner the sleeves 24 are locked in position by means of the hand nuts 27 and the breast structure may be given a fine adjustment by loosening the nuts 29 and turning the shaft 19 by means of a wrench engaging the openings 30. When the desired adjustment has been secured the lock nuts 29 are tightened thus retaining the parts in adjusted position. The rake-head, with the front wall structure, may also be adjusted transversely of the machine by turning the pivot screws 16 in the threaded openings in the frame members, such screws having lock nuts 16ᶜ if desired for retaining them in adjusted position. This adjustment is permitted by the sliding of the shaft 19 in the bearing slots 20.

It is to be understood that the right-hand side of the machine is similar in all respects, in so far as the adjusting means for the roll-box structure is concerned, to the left-hand side herein illustrated.

What I claim and desire to secure by Letters Patent of the United States is:

1. A gin comprising a saw cylinder, a roll-box, a rake-head, and means for adjusting the rake-head in a direction parallel to the axis of the saw cylinder.

2. A gin comprising a saw cylinder, a roll-box having a rake-head secured to an element thereof, and means for moving said element with the rake-head axially of the saw cylinder.

3. A gin comprising a saw cylinder, a roll-box having a movable front wall, a rake-head secured to said wall, means for adjusting said front wall in a direction axial of the saw cylinder, and means for securing said front wall in adjusted position.

4. A gin comprising a saw cylinder and grate, a roll-box having a front wall or seed board supported to swing outwardly about its upper edge, and also to move bodily in an axial direction, a rake-head secured to the front wall, and means for adjusting said front wall in an axial direction.

5. In a linter gin, in combination with the roll-box grate and saws, a rake-head mounted on the front member of the roll-box, and means for adjusting the front member and rake-head axially and radially of the saws, and for locking the parts in adjustment in one of said dimensions.

6. In a linter gin, a roll-box and grate-fall comprising end members, a seed board or front member for the roll-box pivoted on the end members, a rake-head fastened to the seed board, and means having a bearing in said end members and bearing at several points on the seed board adapted to move the seed board on its pivots to adjust the rake-head.

7. In a linter gin means for adjusting a rake-head comprising a movable element of a roll-box on which the rake-head is mounted, an eccentric shaft having bearings on said movable element, concentric bearings for the shaft in members of the roll-box, and means for fixing said shaft in rotative adjustment.

8. In a gin, an adjustable metallic roll-box having a front member or seed board comprising a ribbed grid, a metallic lining for the grid adapted to form one member of an entrance hopper, end frame members, and means for attaching the grid to the end members.

9. In a gin, an adjustable metallic roll-box having a front member or seed board comprising a ribbed grid, a metallic lining for the grid adapted to form one member of an entrance hopper, end frame members, means for attaching the grid to the end members, and adjustment means for the grid adapted to be moved relatively to the end members permitting motions of adjustment of the front member.

Signed by me at Dallas, Texas, this 22nd day of August, 1922.

HIGHLAND GEE VARDELL,
Executrix of the last will and testament of Arthur A. Vardell, deceased.