

No. 742,183.

PATENTED OCT. 27, 1903.

J. H. GARDNER.
THRESHING MACHINE.

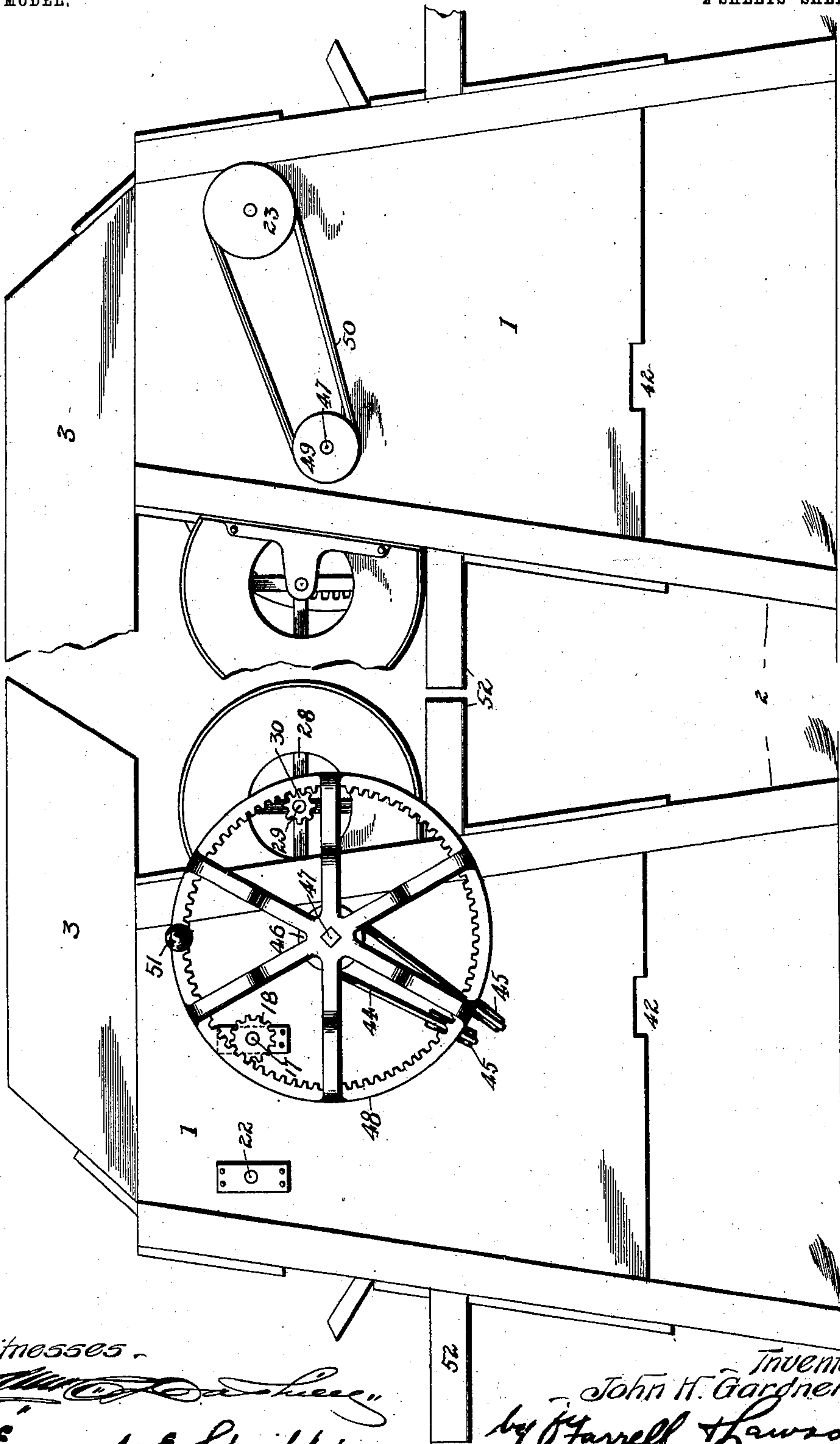
APPLICATION FILED SEPT. 9, 1902.

NO MODEL.

2 SHEETS—SHEET 1.

Fig. 2.

Fig. 1.



Witnesses.

Ernest C. Giffin

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2 SHEETS—SHEET 2.

Fig. 3.

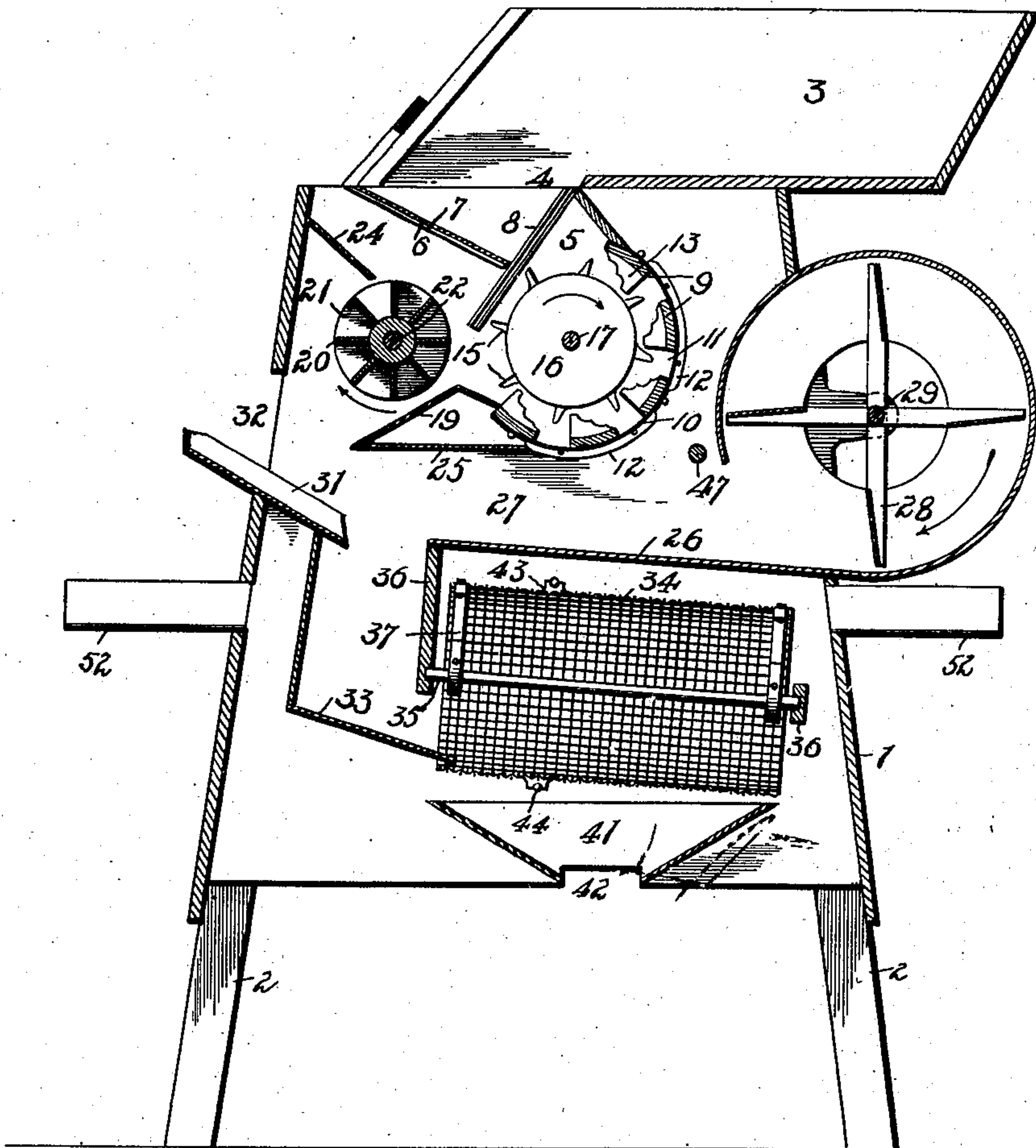


Fig. 4.

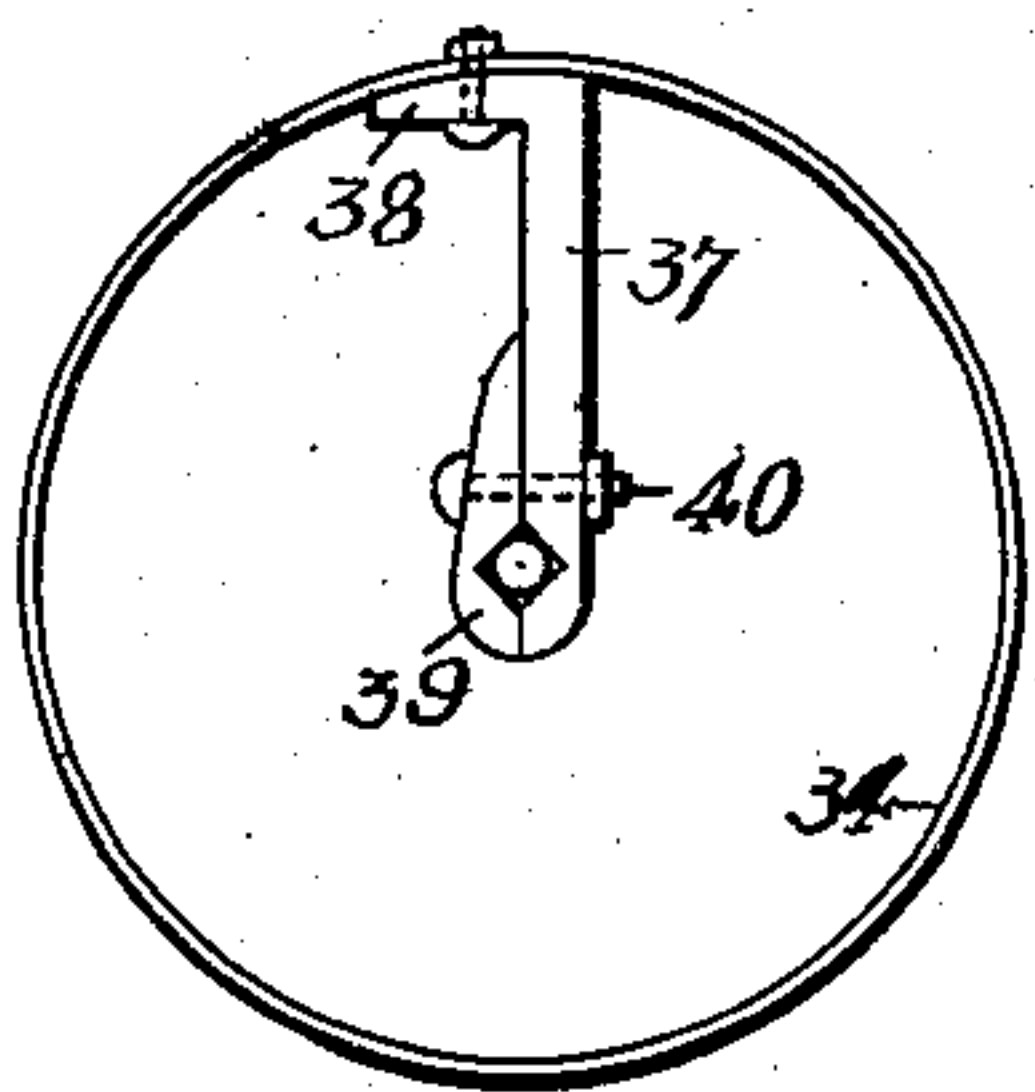
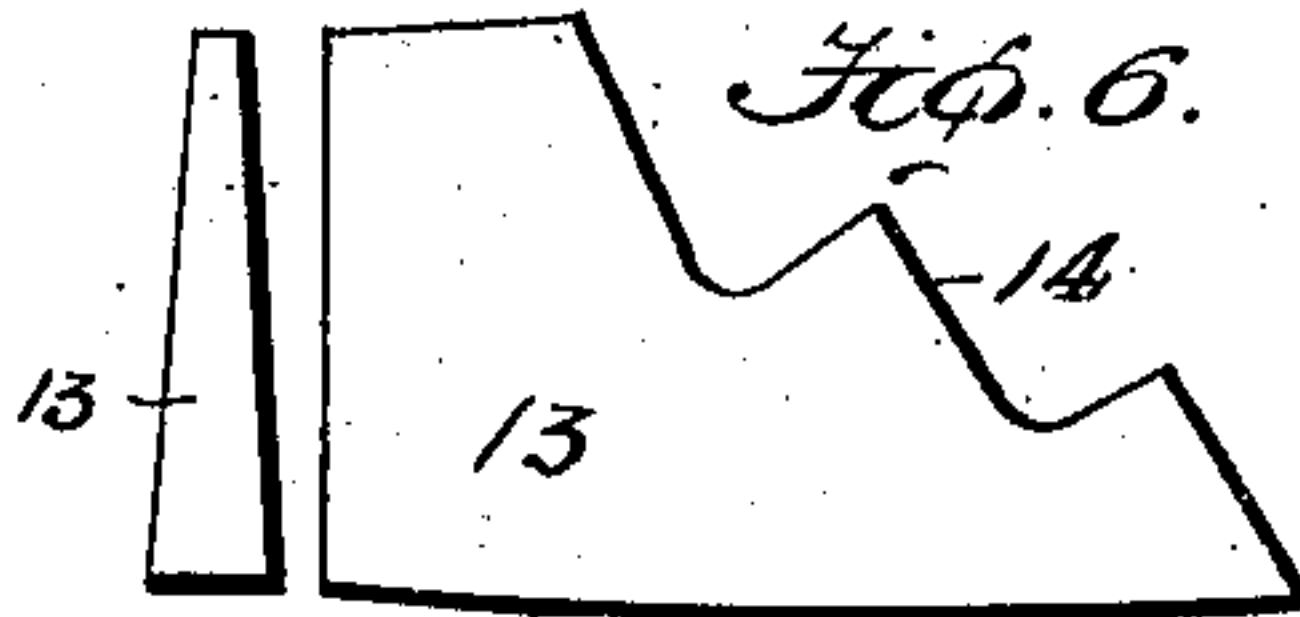


Fig. 5.



Fig. 6.



Witnesses.

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UNITED STATES PATENT OFFICE.

JOHN H. GARDNER, OF DALTON, GEORGIA.

THRESHING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 742,183, dated October 27, 1903.

Application filed September 9, 1902. Serial No. 122,654. (No model.)

To all whom it may concern:

Be it known that I, JOHN H. GARDNER, a citizen of the United States, residing at Dalton, in the county of Whitfield and State of Georgia, have invented certain new and useful Improvements in Threshing-Machines, of which the following is a specification, reference being had therein to the accompanying drawings.

My invention relates to new and useful improvements in threshing-machines of the character employed for hulling peas, beans, &c.

The object of the invention is to provide a simple and inexpensive device of this character having means whereby the pods are thoroughly broken and then directed across an air-blast into a rotating screen which separates the peas or beans from the larger particles.

A further object is to employ teeth of peculiar construction for breaking the pods and to provide means for catching the material discharged from the breaking mechanism and dropping it slowly across the passage through which the air-blast is directed.

Another object is to employ a rotary screen of peculiar construction.

With the above and other objects in view the invention consists in the novel construction and combination of parts hereinafter more fully described and claimed, and illustrated in the accompanying drawings, showing the preferred form of my invention, and in which—

Figure 1 is an elevation of one side of the machine and showing the mechanism for driving the fan, threshing-cylinder, and screen. Fig. 2 is a similar view of the opposite side of the device. Fig. 3 is a vertical longitudinal section through the machine. Fig. 4 is an end elevation of the screen detached. Fig. 5 is a detail view of a series of breaking-teeth, and Fig. 6 shows a side and end view of one of the teeth of said series.

Referring to the figures by numerals of reference, 1 is the body of the machine, mounted on suitable standards 2 and having a hopper 3 at the top thereof provided with an outlet 4 at the forward end of the bottom. A concave threshing-chamber 5 is arranged beneath the outlet 4, and an inclined feed-board

6 extends down thereinto from the forward end of the outlet 4. This board is detachably mounted upon cleats 7 and can, if desired, be removed and slid down between inclined cleats 8, extending downward from the inner end of outlet 4. The threshing-chamber 5 is formed of a series of strips 9, concavo-convex in cross-section and spaced apart, as shown. These strips are secured in any suitable manner to the side walls of the frame of the machine, and a curved sheet 10, of metal or other suitable material, extends under the strips 9 and forms recesses 11 therebetween. This sheet 10 is secured in position in any desired manner, preferably by arranging curved cleats at the edges thereof and bolting them to the side walls of the frame, as shown at 12.

A series of teeth 13 are arranged on each strip 9 and extend inward therefrom. Each of these teeth is of peculiar construction, the working edge thereof being stepped, as shown at 14, and the entire tooth being tapered in cross-section from bottom to top. The teeth of the series are sufficient distances apart to permit the passage therebetween of teeth 15, extending from the face of a threshing-cylinder 16, revolvably mounted within the chamber 5. This cylinder is mounted on a shaft 17, extending through the sides of the frame of the machine and provided with a small gear 18, as shown.

An inclined board 19 extends downward from the forward end of the bottom of the chamber 5, and arranged thereabove is a cylinder 20, having longitudinally-extending pockets 21 therein. This cylinder is mounted on a shaft 22, extending through the sides of the frame of the machine and having a pulley 23 thereon. An inclined partition 24 is located above the cylinder 20 and is for the purpose hereinafter more fully described.

A horizontal wall 25 projects from the lower end of the board 19 back to the bottom of the concave chamber 5, and it and a lower partition 26 form a passage 27, leading from a fan 28. This fan is revoluble with a shaft 29, having a gear 30 at one end thereof. An inclined board 31 is arranged at the forward end of passage 27 and extends upward through an aperture 32, while its lower end overhangs a feed-board 33, projecting into a cylindrical screen 34. This screen is mounted

on a shaft 35, journaled in hangers 36, and is connected thereto by arms 37. These arms, as shown in Fig. 4, are L-shaped, the short arms 38 thereof being bolted to the screen, while the long arms are clamped to the shaft by means of blocks 39 and bolts 40. A hopper 41 is arranged under the screen and is provided with an outlet 42 at the bottom.

The screen 34 is inclined downward from the receiving end thereof and the lower end projects beyond the hopper 41. A grooved flange 43 encircles the screen at a point between its ends and receives a cord or belt 44, which passes over inclined pulleys 45, journaled in one side of the frame of the machine, and around a pulley 46. This last-mentioned pulley is secured upon a shaft 47, having an annular gear 48 thereon which meshes with the gears 18 and 30, hereinbefore mentioned. A pulley 49 is arranged at the other end of shaft 47 and is connected to the pulley 23 by means of a belt 50. A handle 51 is arranged upon the gear 48, whereby it may be readily revolved by hand, and arms 52 extend from the frame of the machine to enable it to be carried from place to place.

In operation the peas or beans are placed on the feed-board 6 and fed into the threshing-chamber 5. The teeth 15 carry them rapidly into contact with the teeth 13, which thoroughly break them. Owing to the peculiar shape of the teeth 13, the material is prevented from clinging thereto, but is, as above stated, thoroughly broken thereby. The recesses 11 permit the material to move out of reach of the teeth 15 of the cylinder for a sufficient length of time to permit it to again come into contact therewith in a different position, thereby permitting the peas to be thoroughly operated upon. The teeth 15, which revolve very rapidly, throw the material upward over the cylinder 20 and upon board 24, from which it slides down into the pockets 21 of the slowly-revolving cylinder 20. It is thus carried around in the direction of the arrow and deposited upon board 19, from which it drops of its own weight across the passage 27. Here it is struck by the blast from fan 28 and the chaff and light hulls discharged through the opening 32. The peas and heavy hulls are directed by the board 31 upon board 33, from whence they pass into the upper end of screen 34. As the screen slowly revolves the peas pass there-through into the hopper 41, and the large hulls and other undesirable particles are discharged from the end thereof.

When it is desired to use the machine simply for cleaning peas, the feed-board 6 is removed from the position shown and inserted between the cleats 8, thereby practically closing the threshing-chamber and serving to direct the peas directly upon the cylinder 20.

In the foregoing description I have shown the preferred form of my invention; but I do not limit myself thereto, as I am aware that modifications may be made therein without departing from the spirit or sacrificing the advantages thereof, and I therefore reserve the right to make such changes as fairly fall within the scope of my invention.

Instead of providing the screen with the grooved flange said flange may be dispensed with and the belt merely placed around and upon the screen.

The outer end of the inclined board 31 is preferably bent upward, as shown in Fig. 3, and this serves to prevent the peas from being blown over the end of said board.

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

1. In a threshing-machine the combination with a fan, an air-passage leading therefrom, and an inclined rotary screen below said passage; of a threshing-chamber, a threshing-cylinder therein, a board inclined from said chamber to the air-passage, a cylinder mounted above said board and having pockets therein for the reception of material discharged by the threshing-cylinder, an inclined board for directing the material into said pocketed cylinder, means for directing the material from the air-passage to the screen, and means for revolving the fan, cylinders, and screen.

2. In a threshing-machine the combination with a threshing-cylinder, a pocketed cylinder for receiving the material discharged from said threshing-cylinder, and an inclined board below the pocketed cylinder; of an inclined rotary shaft, a cylindrical screen inclosing the same, an L-shaped arm bolted to the screen near each end thereof, means for clamping each arm to the shaft, inclined boards for directing the material from the pocketed cylinder to the screen, and a hopper below the screen.

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

JOHN H. GARDNER.

Witnesses:

JOHN WARMACK,
C. C. BOWEN.