

No. 693,072.

Patented Feb. 11, 1902.

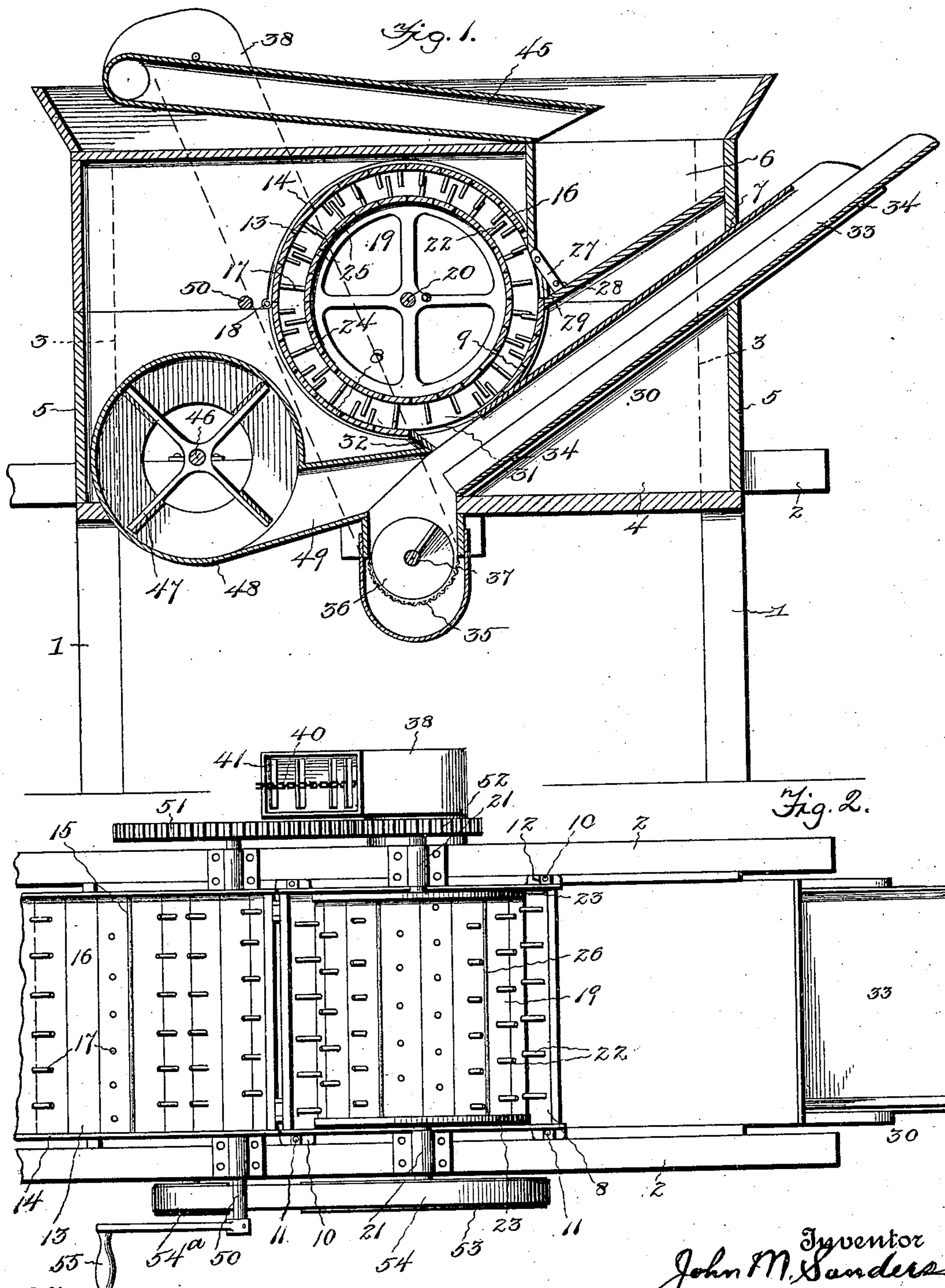
J. M. SANDERS.

PEA HULLER.

(Application filed Dec. 1, 1899.)

(No Model.)

2 Sheets—Sheet 1.



Witnesses

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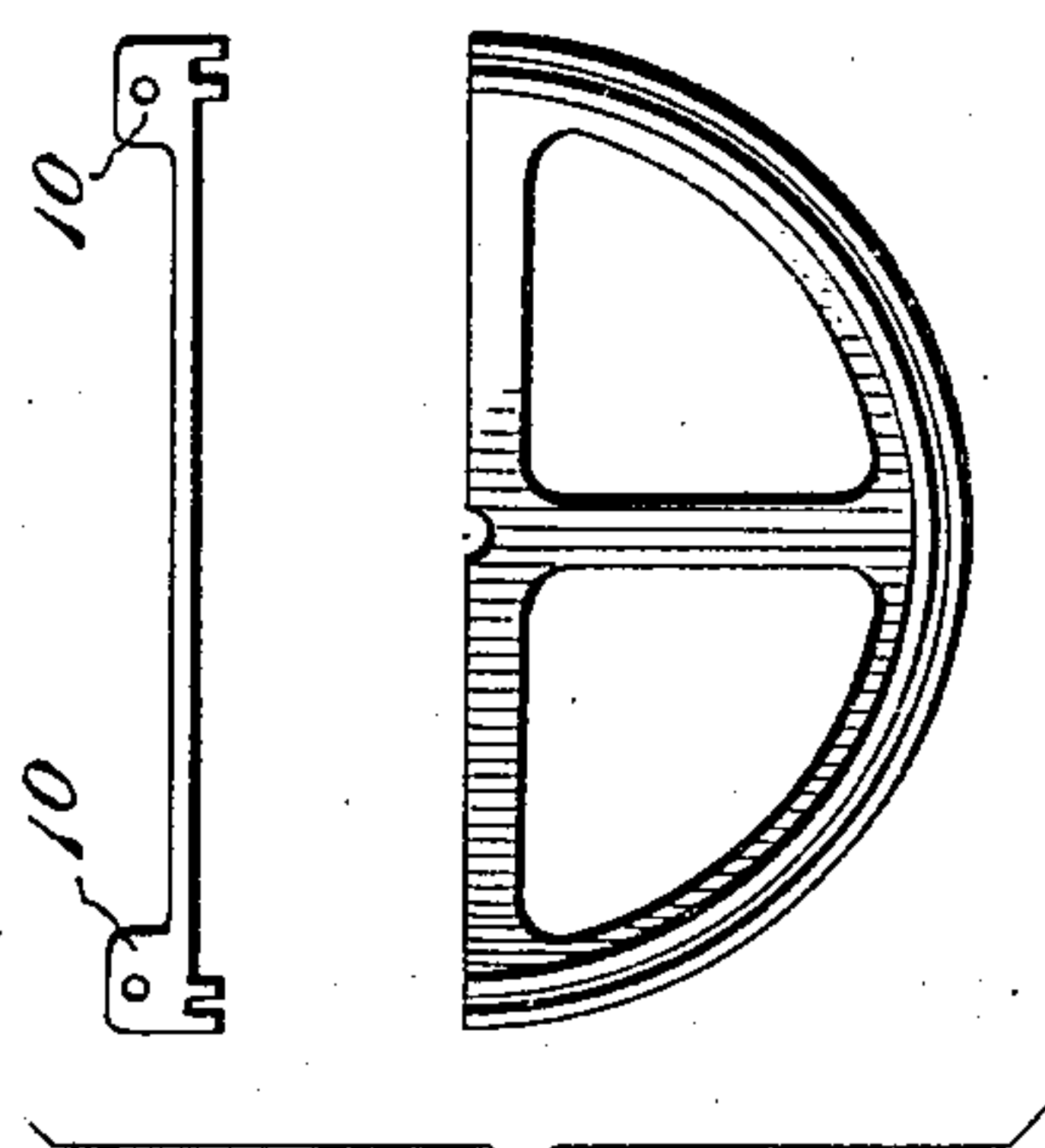


Fig. 4.

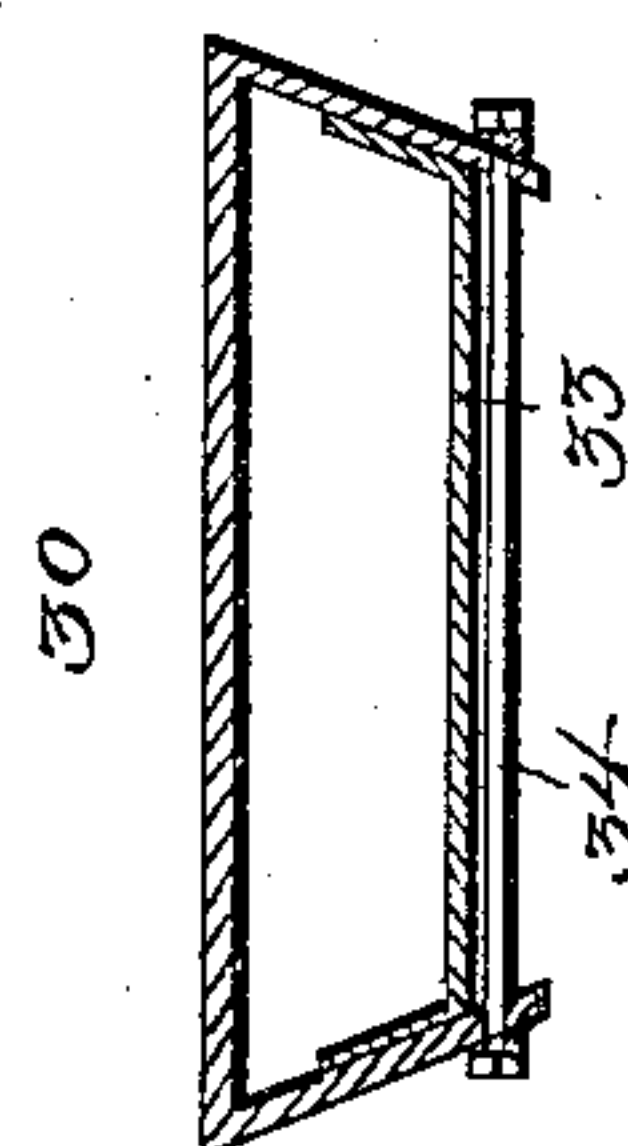


Fig. 5.

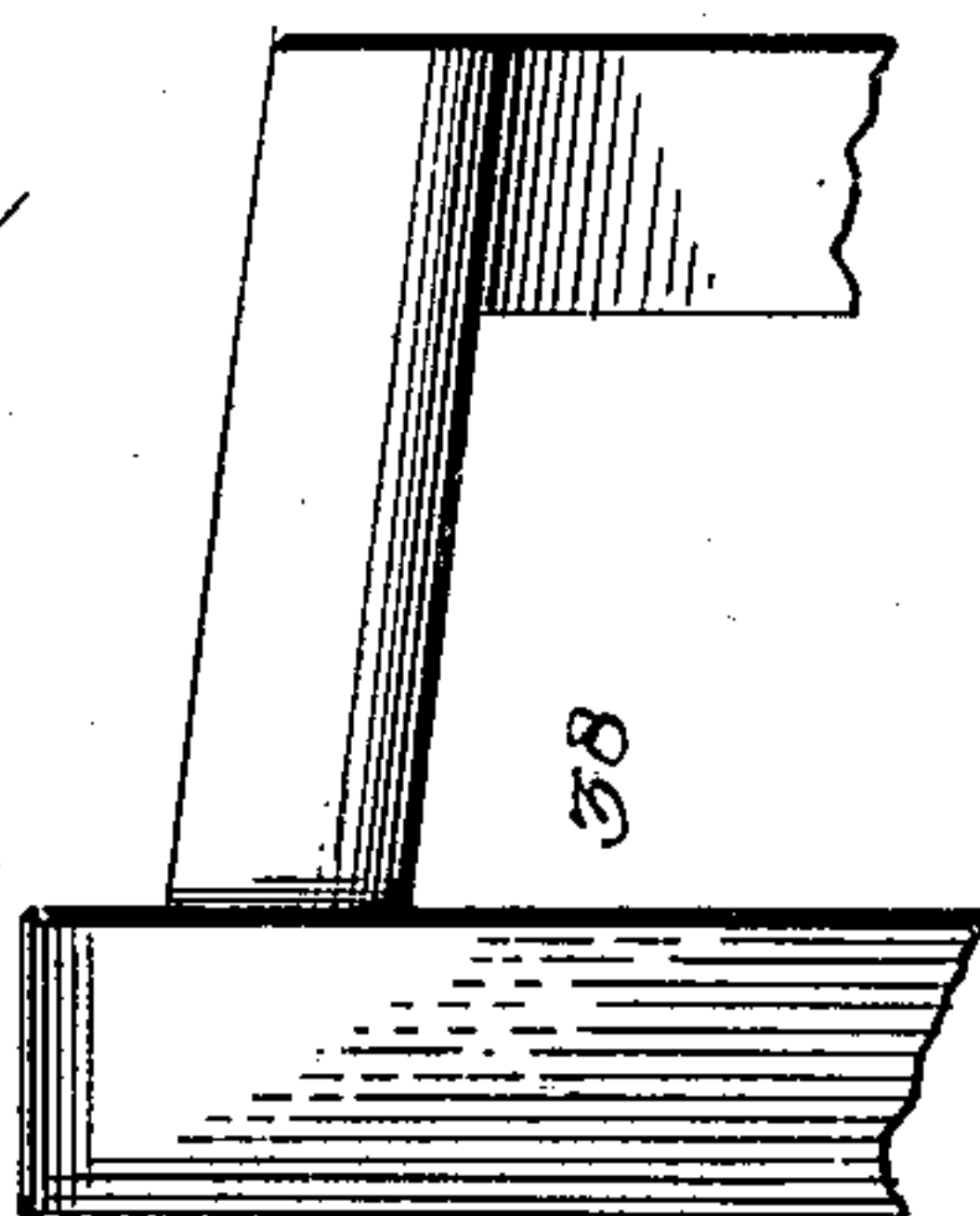


Fig. 6.

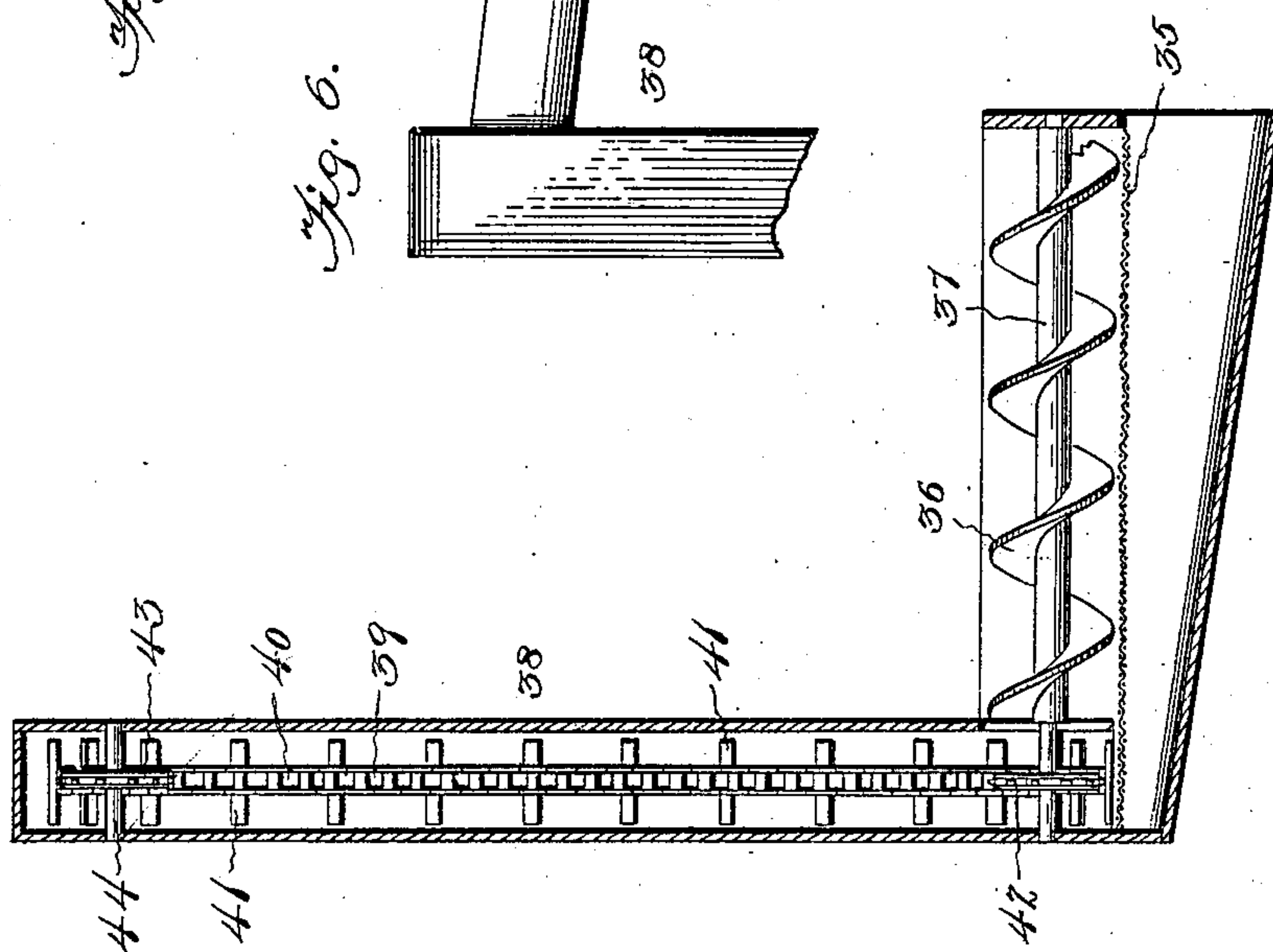


Fig. 3.

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UNITED STATES PATENT OFFICE.

JOHN M. SANDERS, OF DALTON, GEORGIA.

PEA-HULLER.

SPECIFICATION forming part of Letters Patent No. 693,072, dated February 11, 1902.

Application filed December 1, 1899. Serial No. 738,823. (No model.)

To all whom it may concern:

Be it known that I, JOHN M. SANDERS, 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 Pea-Hullers, of which the following is a specification, reference being had therein to the accompanying drawings.

My invention relates to pea-hullers; and its primary object is to provide an efficient machine of this character in which the peas are fed to the side of the hulling-cylinder and carried up over the same and in which due provision is made for removing and repairing the operative mechanism.

Other objects of the invention will be disclosed hereinafter, and its characteristic features of construction will be fully described, and defined in the appended claims.

In the accompanying drawings, Figure 1 is a vertical central longitudinal section of the machine. Fig. 2 is a plan view of the same with the upper portion of the casing removed, and Figs. 3, 4, 5, and 6 illustrate detail features of the machine.

The lower section of the frame or casing of the machine comprises standards 1, connected by side bars 2 and end bars 3 and also by side and end boards, (designated by the numerals 4 and 5, respectively.) The casing is provided with a cover or upper section of box-like form provided at one end with a feed-hopper 6 and formed with an opening 7, through which the discharge-chute of the machine projects.

Within the lower section of the casing is supported the lower semicircular half 8 of the hulling-concave, which is preferably constructed of independent sections or staves 9, the ends of which are supported in semicircular grooved supports, each provided at its ends with horizontal brackets 10, which overlap the upper side bars 2 of the frame and are secured thereto removably by bolts 11, which project upwardly through the side bars 2 and are held by nuts 12. Each of said staves is provided with a row of hulling-teeth, the several rows being so alined that spaces of equal distance are left between them for the passage of the teeth of the hulling-cylinder.

The upper half 13 of the hulling-concave consists of semicircular grooved frames or

guides 14, connected by tie-rods 15, and a series of independent sections or staves 16, provided with teeth 17, corresponding to the teeth of the lower half of the concave, and, like the latter, arranged in alined rows to permit of the passage of the teeth of the hulling-cylinder. The upper section 13 is hinged to the lower half or section 8 by hinges 18, the leaves of which are secured to the two meeting staves of the two halves at one side, as shown.

The hulling-cylinder 19 is mounted upon a rotary shaft 20, supported in bearings 21, secured to the side bars 2 of the frame, and is adapted to revolve centrally within the concave. The teeth 22 of the cylinder are arranged in spiral rows and in different vertical planes, so that they will freely pass between the stationary teeth projecting from the concave. It is important that the teeth of both the cylinder and the concave be so proportioned as to length and so relatively arranged that they will on the one hand insure a proper hulling contact with the peas and on the other be a sufficient distance apart to prevent breaking or splitting of the peas during the hulling process. The hulling-cylinder consists of counterpart end castings 23, provided with circular grooves 24 on their inner sides and series of sections or staves 25, the ends of which fit the grooves 24, the parts being securely but removably held together by tie-rods 26.

The free end of the upper section 13 of the concave is provided with pivotally-secured straps 27, which extend down within the casing and are adapted to be detachably held by screws or bolts 28 against the inner sides of the side boards of the casing. The straps 27 support the free end of the section 13 away from the adjacent end of the lower section 8, leaving an opening 29, through which the peas fall from the hopper against the side of the cylinder.

Below the hopper 6 is arranged a discharge-chute 30, which extends down at an incline within the frame to a point below the lower section 8 of the concave. This section 8 is provided with an opening 31, through which the hulled material passes, and also with a transverse inclined deflector 32. The bottom 33 of the chute is removable and is supported by cross-

rods 34. The removability of this bottom 33 enables it to be withdrawn when necessary to clear away any accumulation of pods and prevent clogging. A feature of improvement 5 in this connection resides in the fact that the inclined discharge-chute 30 extends directly over one bottom corner of the casing, which bottom corner, inclosed by the adjacent casing-boards 4 and 5, constitutes a receiving-pocket 10 or place of deposit for the lighter material, which it may be desired to collect. It is obvious that the removability of the bottom or bottom-section 33 of the chute provides means for uncovering the said receiving-pocket at 15 one bottom corner of the casing, so that the same will form a place of deposit for the lighter pieces blown past the conveyer 36 by the fan.

Below the opening 32 and arranged transversely with respect to the frame is a concave or semicylindrical screen 35, designed to receive the material which has not been separated and removed by the blast of air from the fan. The peas pass through this screen 25 and are deposited in a suitable receptacle; but the pods containing peas will be conveyed to one end of the screen by a spiral conveyer 36, whose shaft 37 is disposed axially within the screen. At the end of the screen outside 30 of the machine-frame is located a conveyer casing or chute 38, within which operates an endless conveyer 39, preferably comprising a sprocket-chain 40 and conveyer-blocks 41. The chain 40 is passed around a sprocket-wheel 42 on the shaft 37, and a second 35 sprocket 43, carried by a short shaft 44 at the upper end of the conveyer-casing.

45 indicates an inclined return-chute leading from the upper end of the casing 38 to a point above the hopper 6.

Any suitable arrangement of gearing for communicating power to the conveyers 36 and 39 may be employed; but I prefer to gear the shaft 37 of the spiral conveyer to a fan-shaft 46, carrying, as usual, a fan 47, arranged to rotate within a fan-casing 48, mounted within one end of the frame of the machine in front of the hulling mechanism. The rear end of the fan-casing is provided with a deflector 49, 50 which directs the currents of air up through the delivery-chute 30 and away from the screen 35 for the hulled peas, which latter drop by gravity through the screen. A driving-shaft 50 is provided, carrying a gear-wheel 51, which meshes with a pinion 52 on the end of the shaft 20 of the cylinder. Upon the opposite end of the shaft 20 is a belt-pulley 53, from which the fan-shaft 46 is driven by a belt 54 and pulley 54^a. The driving-shaft 50 is provided with a crank 55, or may, 60 of course, be driven by any desired power.

The operation will be readily understood from the foregoing description in connection with the drawings, but can be described as follows: The peas are fed into the hopper and fall through the opening 29 against the side of the cylinder and are carried up over the

cylinder, making about two-thirds of a revolution, thus insuring a thorough hulling action between the cylinder and concave. The 70 hulled peas readily fall by gravity through the screen, while the detached pods, &c., are blown up through the delivery-chute by the force of the air from the fan. In the event that any of the pods are not broken from the 75 peas they will drop into the screen and will be conveyed by the spiral conveyer to the bottom of the casing 37. They will then be conveyed by the endless conveyer to the return-chute 45, through which they gravitate 80 to the hopper 6 and are returned to the hulling mechanism for rehulling.

It will be observed that by my construction I provide a cylinder and a concave which may be readily repaired by the removal of one or 85 more staves and also that the sections of the concave may be readily separated to straighten or repair their teeth. I also fully provide against clogging of the parts by employing a removable bottom for the delivery-chute. The teeth and other parts of the hulling mechanism are also so relatively arranged that a thorough hulling of the peas is effected without liability of crushing or splitting the 90 hulled peas.

While the construction shown in the drawings is operative and efficient, I reserve the right to make all such changes or modifications in the details as may properly fall within the scope of the following claims. 100

I claim—

1. In a pea-huller, the combination with the casing, of an interior cylindrical toothed hulling-concave provided with a side feed-opening and a bottom discharge-opening, an inclined inclosed discharge-chute extending 105 beneath and beyond said discharge-opening, a screen arranged at the lower end of said discharge-chute, a conveyer working over the screen, a return-conveyer associated with the one working over the screen, and a fan having its casing provided with a blast-spout disposed at one side of the screen and arranged to direct a blast over the screen and its conveyer, and through the discharge-chute past 115 the discharge-opening of the concave.

2. In a pea-huller, the combination with the hulling mechanism, of the casing having at one bottom corner a receiving-pocket, a discharge-chute extending over said pocket and 120 in communication with the discharge-outlet of the hulling mechanism, a blast device arranged to direct the blast into the chute at the lower end thereof, a detachable bottom-section removably fitting in said chute and 125 extending the full length thereof, said bottom-section being so arranged as to provide for uncovering said receiving-pocket.

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

JOHN M. SANDERS.

Witnesses:

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