

E. O. BLACKWELL.
PEA THRESHER.
APPLICATION FILED NOV. 9, 1908.

948,130.

Patented Feb. 1, 1910.

4 SHEETS—SHEET 1.

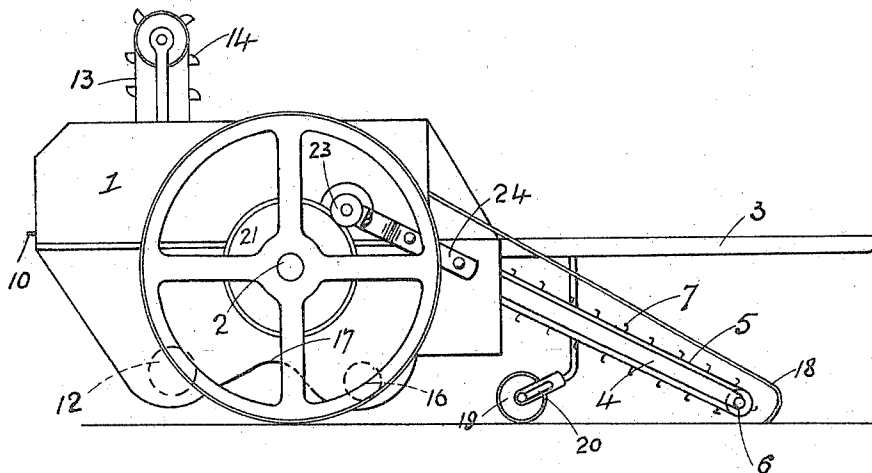


Fig. 1

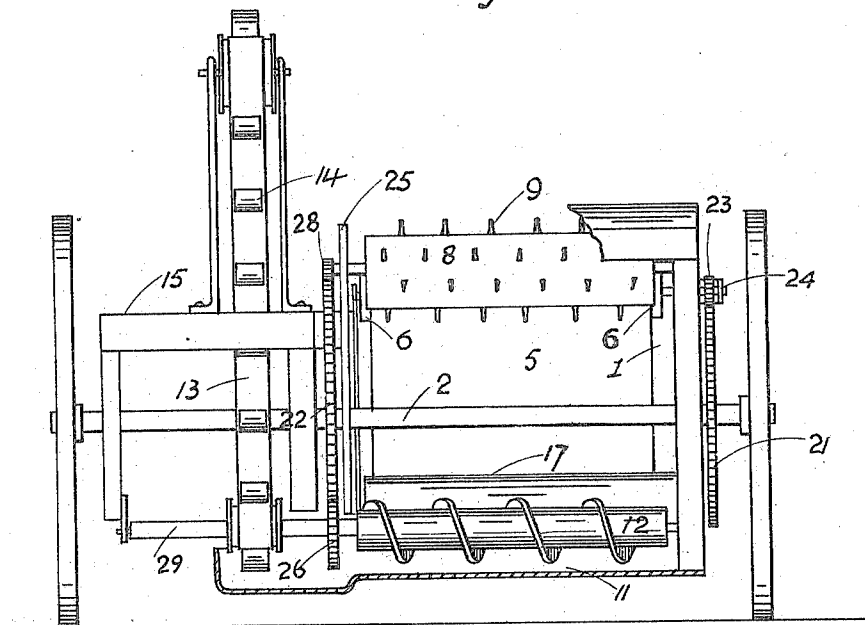


Fig. 2

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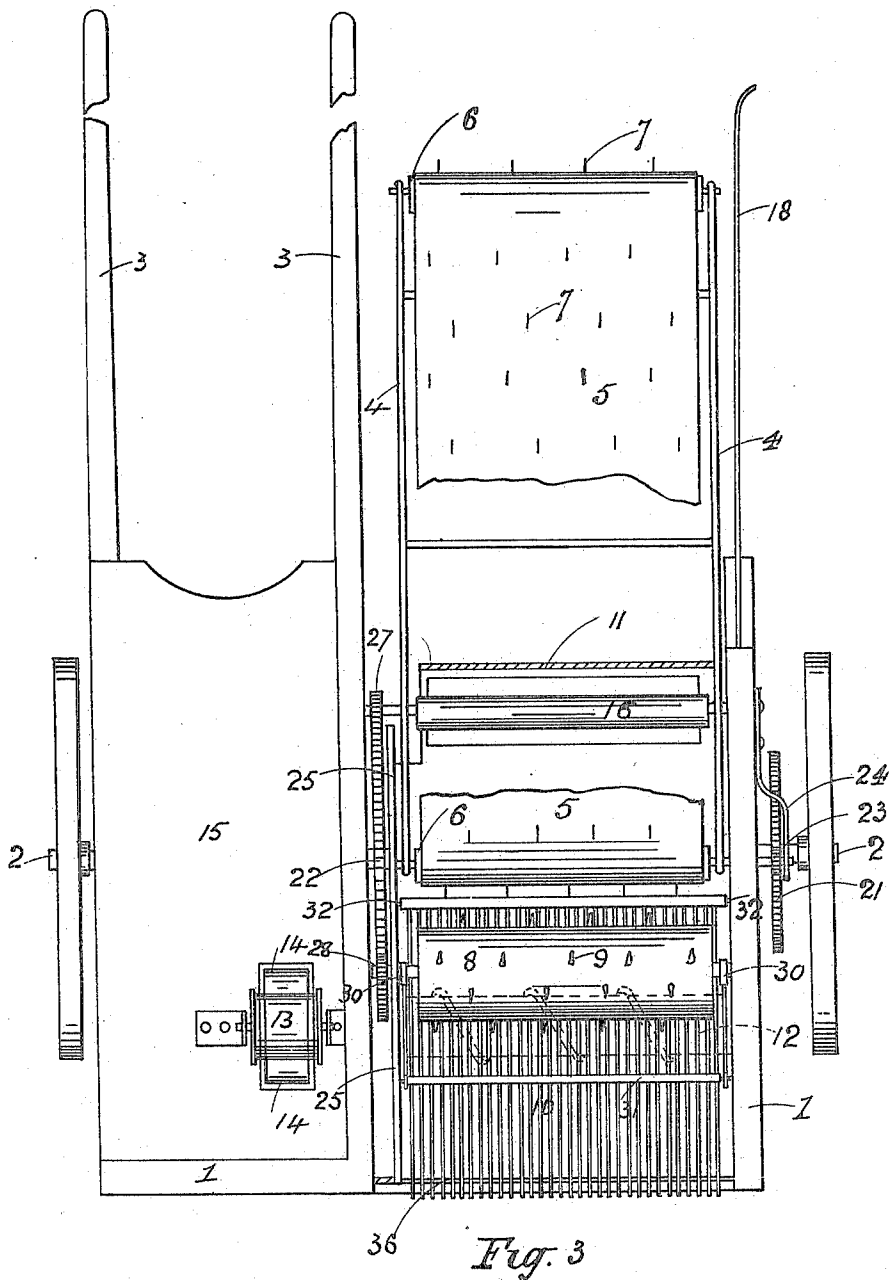
Arthur C. Kears & Co.

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 4 SHEETS—SHEET 3.

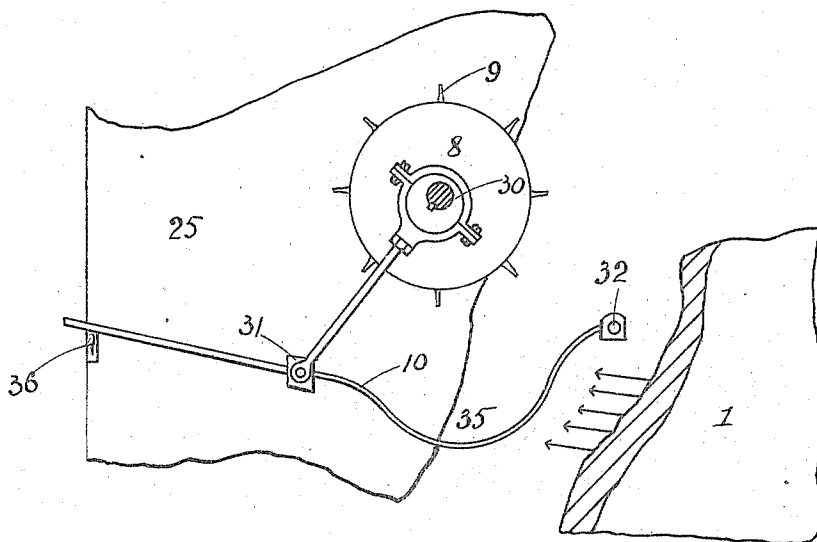


Fig. 4

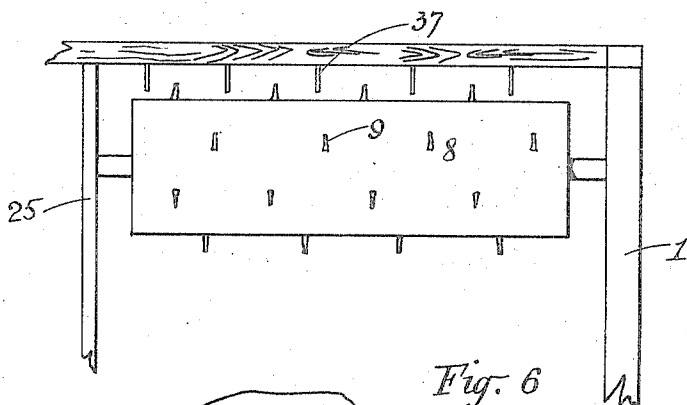


Fig. 6

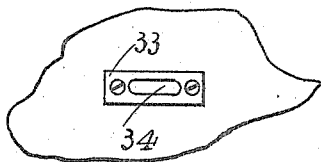


Fig. 5

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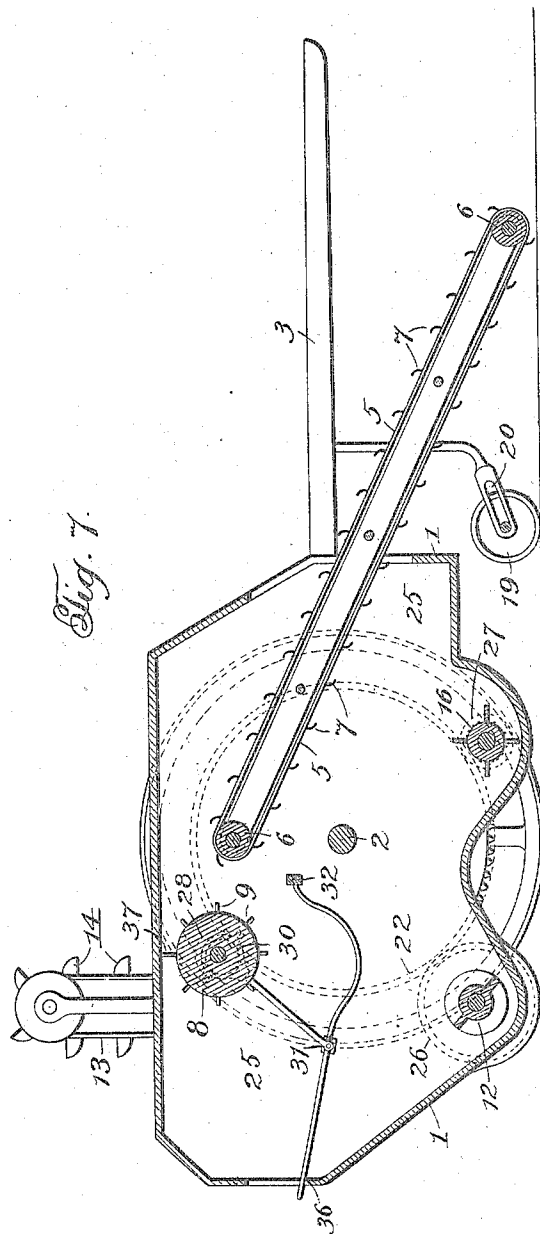
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4 SHEETS—SHEET 4.



Witnesses:
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UNITED STATES PATENT OFFICE.

EDWIN ORLANDO BLACKWELL, OF WYNYARD, TASMANIA, AUSTRALIA.

PEA-THRESHER.

948,130.

Specification of Letters Patent.

Patented Feb. 1, 1910.

Application filed November 9, 1908. Serial No. 461,682.

To all whom it may concern:

Be it known that I, EDWIN ORLANDO BLACKWELL, of Wynyard, Tasmania, Australia, sawmiller, have invented certain new and useful Improvements in Pea-Threshers, of which the following is a specification.

My invention relates to traveling machines for harvesting peas and crops of a like nature, and provides means whereby the crop may be collected, threshed, cleaned and bagged in the same machine.

The vehicle is moved in any convenient manner that shown in the drawing being by a horse or horses.

Referring to the accompanying drawings, Figure 1 is a side elevation of the machine. Fig. 2 is an end elevation of the same, with section only of roof. Fig. 3 is a plan, the roof of the machine being removed. Fig. 4 shows in detail means for operating the jig, portions of the supports only being shown. Fig. 5 shows the jig bearing by means of which a reciprocatory motion of the jig is possible, a portion of the mounting only being shown. Fig. 6 is another detail showing means for keeping the pegs on the peg drum clear of straw. Fig. 7 is a longitudinal sectional view of the apparatus.

The machine body 1 is constructed principally of wood and is divided roughly into two parts, occupied by the thresher mechanism on one side and the bagging means on the other.

The vehicle is carried on wheels supporting the axle 2 which in turn, supports the machine body containing the various mechanisms. The axle 2 also distributes the driving force which, by a convenient arrangement of gearing hereafter to be described, is imparted to the different parts in the machine.

Utilizing the machine for harvesting peas, the crop is first cut by hand, before placing machine in position. In front of the vehicle are the shafts 3, and the conveyer, consisting of the ladder 4 and belt or apron 5 which passes over or around the rollers 6, mounted in the extremities of the ladder. Secured in the apron of the conveyer are small hooks 7, which engage with the crop until it is carried up to the thresher or peg drum 8 which is adapted to disengage it from the apron. The thresher consists of a revolving drum 8 in the periphery of which are pegs 9. The pegs should be

stout and quite free of any cutting edges so that as they tear the crop away from the apron the peas shall not be cut or broken. The peg drum will cause the peas to be separated from the straw. They will fall down through the jigger screen 10 (Figs. 3 and 4) to the trough 11 which is part of the floor of the machine. Mounted longitudinally in the trough is an Archimedean screw 12, the worm of which is preferably composed of some pliable material, such as leather or rubber. The screw 12 passes the product along to the endless band elevator 13 on which are buckets or scoops 14, which lift the peas and eventually deliver the same into a sack or other receptacle held by an attendant upon the platform 15.

While the peas are being separated from the straw a blast of air is played upon the grating 10 from a fan 16 placed toward the front of the machine. The blast from this fan will clean the product and expel the straw and other light material through the rear of the machine which is left open for the purpose. The fan is geared in such a way that it will rotate to supply the current of air from the front to the rear of the machine.

Arranged underneath the machine is the undulating floor 11 which is curved around the fan 16 and comes rearwardly below the screw 12 where it provides a trough for the peas. About midway in the machine the floor 11 is arched to form a bridge 17 against which the blast from the fan 16 will strike and be deflected upward on the screen 10.

In order to assist in collecting the crop I arrange a rod 18 parallel with the ladder 4. The rod is capable of being sprung outward and is fastened to the body 1 and its forward end is flared outward and bent downward. As the machine advances the rod will assist to collect the crop by causing any that is not directly in the way of the ladder to converge toward the same.

The elevator or conveyer is driven as will be hereafter explained and it is supported in any suitable manner so that its lower end shall be near the ground. In order to adjust the position of the conveyer in relation to the ground level, which will depend to some extent upon the state of the crop to be harvested, I provide a carrying wheel 19 upon the forward part of the vehicle. The wheel 19 is mounted in a fork in which is a

slot 20. By pushing the wheel up the slot and securing it, the conveyer will be depressed.

Referring now to the driving means, upon the axle or first motion shaft 2 are mounted the spur wheels 21 and 22. 21 meshes with pinions 23 which drive the uppermost roller 6 of the conveyer, the spindle of which is mounted in the bracket 24. The opposite end of the spindle is held in the plate 25 which is placed upright in the machine for the purpose of isolating the driving mechanism from the threshing compartment. The plate 25 also serves to mount the peg drum 8. The wheel 22 meshes with pinion 26 on the spindle of the screw 12, and it may also drive the fan through a train of wheels. Wheel 22 likewise drives the peg drum 8 through pinion 28. As the machine advances, the conveyer will be operated through wheels 21 and 23; the peg drum 8 through wheels 22 and 28, while the screw 12 and elevator 13 will also be driven from wheel 22 through the pinion 26. The pinion 26 is upon the spindle 29 which is common to the elevator and screw 12.

Referring now to the screen jig 10, this is mounted in and between the body 1 and plate 25. On the spindle of the drum 8 preferably at each side of the drum, is an eccentric 30 that is connected to a plate 31 through which the bars composing the screen pass. The screen is pivotally mounted at 32, the pin reciprocating in the plate 33 wherein is a slot 34. As the drum 8 rotates the eccentrics moving therewith will cause the screen to jig, thereby assisting to separate the peas from the haulms or straw. By means of the eccentrics and the slots 34, a curvilinear motion is imparted to the screen, which is formed with a sag or trough 35 from which its surface rises slightly until its edge is reached. The object of this arrangement of the screen is to insure that the peas shall fall well within the screen and will, after passing through the same into the trough 11, be conducted by the screw 12 to the elevator 13. As the peas are separated from the straw the latter is blown out by the blast of air from the fan indicated by the arrows in Fig. 4.

The outer end of the screen normally rests upon the plate 36, and as the screen is jerked by the eccentrics it will each time contact lightly with the plate. The peg drum 8 revolves away from the endless conveyer belt 5 and as the latter brings up the crop the pegs 9 on the drum take it off and in so doing will disengage the peas. What adheres to the pegs will, as the drum revolves, be brought into contact with the hanging pegs 37 placed in the roof of the thresher box, which will assist to keep the peg drum clear.

Having thus described my invention what

I claim as new and desire to secure by Letters Patent is:—

1. The combination in a machine of the class indicated, of an endless conveyer belt, a threshing cylinder, a reciprocatory screen having connection with said cylinder so as to be operated thereby, the screen being located below the cylinder, a floor below the screen providing troughs formed by an arch or bridge, a fan to one side of the arch or bridge for delivering a current of air over the bridge and an Archimedean screw at the other side of the arch for conveying the product to an elevator.

2. The combination in a machine of the class indicated, of an endless conveyer or belt, a threshing cylinder adapted to receive from said conveyer belt, eccentrics mounted on said cylinder, and a screen mounted in slotted plates in the walls of the compartment below the threshing cylinder, said screen having a vertically reciprocatory motion imparted by said eccentrics.

3. In a machine of the character described, a suitably supported screen, an endless belt carrier having its discharge end adjacent to said screen, a suitably supported drive shaft, a gear adjacent one end thereof, an auxiliary gear adjacent the opposite end thereof, means for moving the belt including a gear in direct mesh with said first mentioned gear, a threshing roll adjacent the upper end of the belt and above the screen to receive the discharge from the belt, a direct gear connection between the roll and the auxiliary gear of the drive shaft and an eccentric connection between the roll and screen for reciprocating the latter.

4. In a machine of the character described, a suitably supported screen, an endless belt carrier having a discharge end adjacent said screen, a drive shaft, a gear adjacent one end thereof, an auxiliary gear adjacent the opposite end thereof, means for moving the belt including a gear in mesh with said first mentioned gear, a threshing roll adjacent the upper end of the belt and above the screen to receive the discharge from the belt, a gear connection between the roll and the auxiliary gear of the driving shaft, a direct connection between the roll and screen for reciprocating the latter, an auxiliary shaft mounted below the screen, a screw conveyer carried by said auxiliary shaft, an elevator arranged adjacent the end of the auxiliary shaft at a point to one side of the gears on the drive shaft and adapted to be driven by the auxiliary shaft, and a gear connection between said auxiliary gear, and the auxiliary shaft for rotating the latter and in turn the screw conveyer and elevator.

5. In a machine of the character described, the combination of a reciprocatory screen, an endless conveyer belt, a threshing

cylinder arranged above the screen adjacent the discharge end of the conveyer belt, for receiving the material therefrom, an arched flooring below the screen forming troughs
5 extending transversely of the conveyer belt, a conveyer in one of the troughs for feeding the material out of the same, means below the screen for blowing out and discharging the waste material, the arched floor forming
10 a partition between the blower and the conveyer in the trough, and means for imparting movement to the screen, belt, cylinder, conveyer, and blower comprising gearing operatively connected with the axle of
15 the machine.

6. In a machine of the character described, the combination of an endless conveyer belt, a threshing cylinder and a screen

below the cylinder having a vertically reciprocatory motion obtained from the cylinder spindle, an arched floor forming at
20 each side a trough, a fan to one side of the arch or bridge for delivering a current of air over the bridge, a conveyer in the trough for conveying the product therethrough, and
25 a direct driving means connected to the axle of the machine for imparting movement to the cylinder, belt and fan.

In witness whereof, I have hereunto signed my name in the presence of two subscribing witnesses. 30

EDWIN ORLANDO BLACKWELL.

Witnesses:

A. G. BLACKWELL,
W. L. BLACKWELL.