No. 768,166. PATENTED AUG. 23, 1904.

J. BARNARD.

CORN HUSKING DEVICE.

APPLICATION FILED MAY 21, 1904.

NO MODEL. 2 SHEETS--SHEET 1.

Fig. 1.

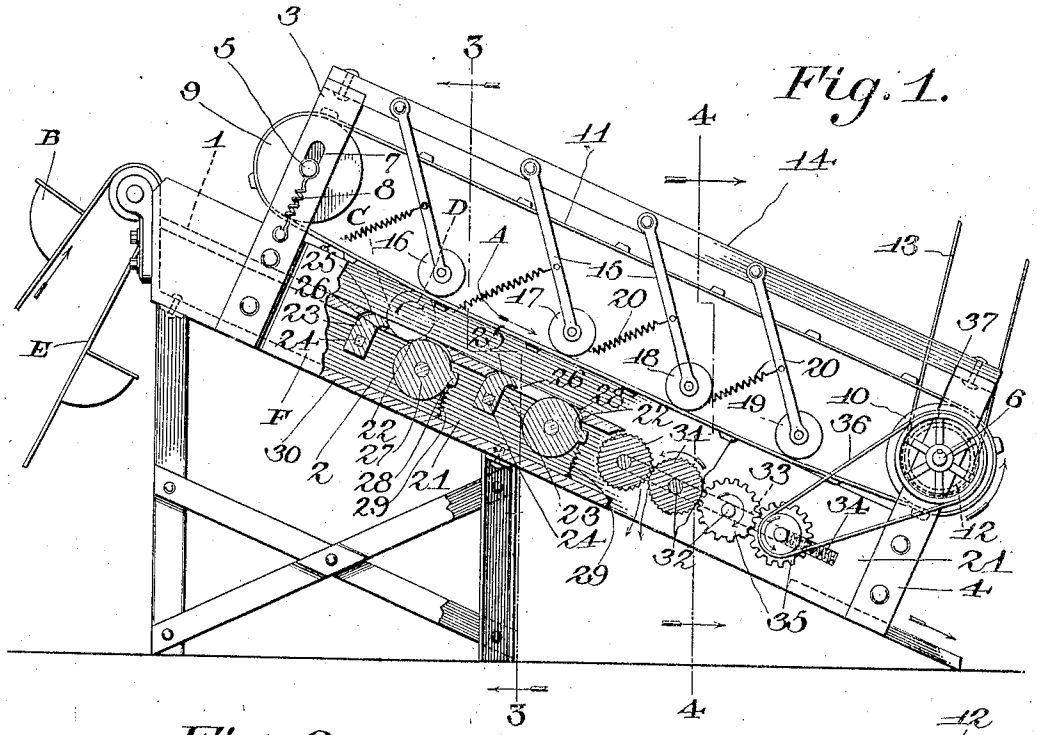
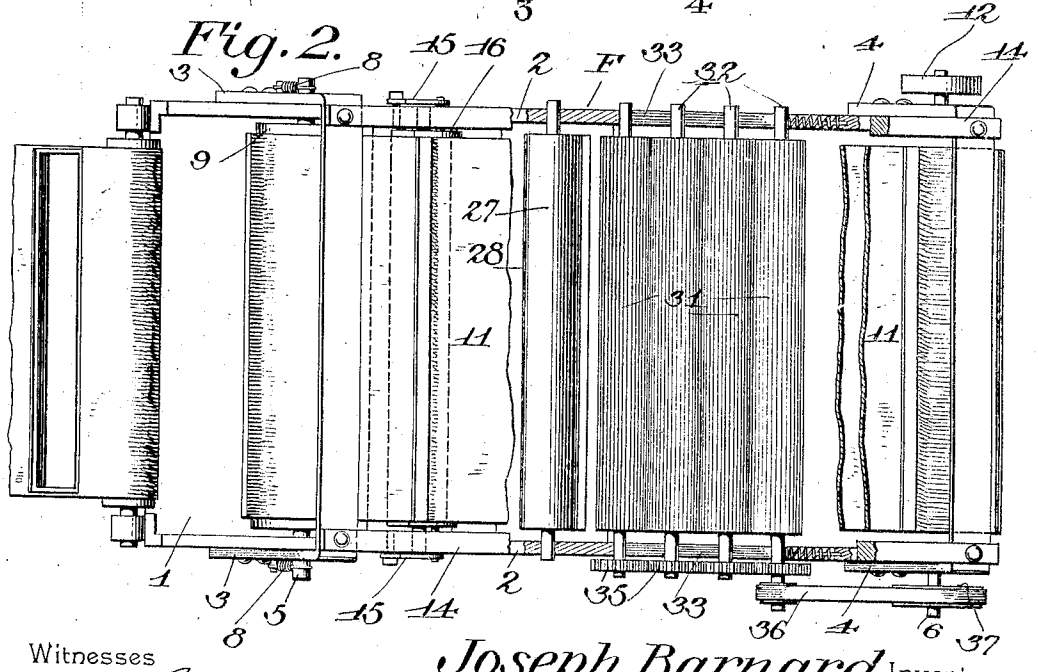


Fig. 2.



Witnesses

E. F. Stewart

Wm. Bagger

Joseph Barnard, Inventor.

by Cachow & Co

Attorneys

No. 768,166. PATENTED AUG. 23, 1904.

J. BARNARD.

CORN HUSKING DEVICE.

APPLICATION FILED MAY 21, 1904.

NO MODEL. 2 SHEETS—SHEET 2.

Fig. 3.

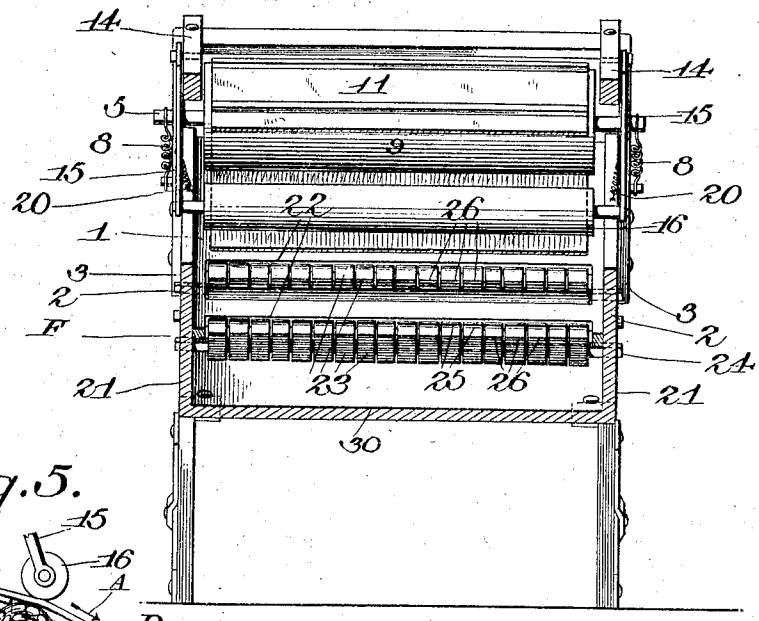


Fig. 5.

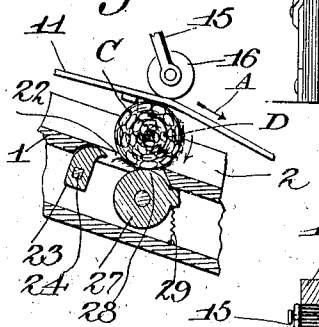
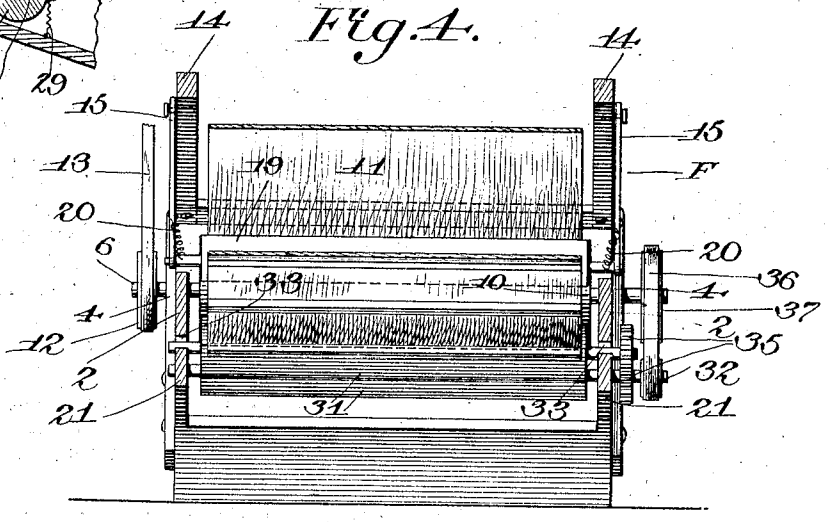


Fig. 4.



Witnesses

E. C. Stewart

Wm. Bagger

Joseph Barnard, Inventor.

by Cushman & Co

Attorneys

No. 768,166. Patented August 23, 1904.

UNITED STATES PATENT OFFICE.

JOSEPH BARNARD, OF OKLAHOMA, OKLAHOMA TERRITORY, ASSIGNOR OF ONE-HALF TO WILLIS E. PELTON, OF OKLAHOMA, OKLAHOMA TERRITORY.

CORN-HUSKING DEVICE.

SPECIFICATION forming part of Letters Patent No. 768,166, dated August 23, 1904.

Application filed May 21, 1904. Serial No. 209,098. (No model.)

To all whom it may concern:

Be it known that I, JOSEPH BARNARD, a subject of the King of Great Britain, residing at Oklahoma, in the county of Oklahoma and Territory of Oklahoma, have invented a new and useful Corn-Husking Device, of which the following is a specification.

This invention relates to corn-husking devices; and it has for its object to provide a device in the nature of an attachment to corn-harvesting machines which are provided with corn-husking devices for the purpose of remedying an objection which is very frequently encountered in devices of this class—namely, that while the heavy or outer husks are successfully removed from the ears of corn by such ordinary husking device it frequently happens that the thin inner husks will remain, necessitating their removal afterward by hand.

The object of this invention, then, is to provide what may be termed a "rehusking" device capable of being attached to and used in connection with ordinary self-husking corn-harvesters or with corn-husking machinery of any description whereby ears already subjected to the action of the corn-husking device shall be subjected to a second operation, which while not in any way interfering with the ears from which the husks have been entirely removed will detain and operate upon such ears as are still fully or partially enveloped by the inner husks. Another object of the invention is to carry this prime object into effect without danger of shelling the corn.

With these and other ends in view the invention consists in the improved construction and novel arrangement and combination of parts to be hereinafter described, and particularly pointed out in the claims.

In the accompanying drawings has been illustrated a simple and preferred form of embodiment of the invention, it being, however, understood that no limitation is necessarily made to the precise structural details therein exhibited, but that the right is reserved to any changes, alterations, and modifications which come fairly within the scope of the invention and which may be resorted to without departing from the spirit or sacrificing the efficiency of the same.

In said drawings, Figure 1 is a sectional elevation of a corn-rehusking device constructed in accordance with the principles of the invention. Fig. 2 is a top plan view of the same with parts broken away for the purpose of more clearly showing subjacent parts of the device. Fig. 3 is a sectional view taken on the line 3 3 in Fig. 1. Fig. 4 is a sectional view taken on the line 4 4 in Fig. 1. Fig. 5 is a sectional detail view showing an ear of corn in position to be operated upon by the machine.

Corresponding parts in the several figures are indicated by similar characters of reference.

In carrying out the invention it is to be understood that the frame of the device, which is generally designated F, is to be suitably connected with a feeder which in the drawings has been illustrated as an elevator E, having buckets B, whereby the ears of corn are delivered in a transverse position to the table or platform 1 of my improved device. It is to be understood that the feeder or elevator E may convey the corn from the husking mechanism of a corn-husking harvester or from any corn-husking mechanism to the improved rehusking device, and it is to be further understood that the ears are to be deposited upon the table 1, which latter is disposed in an inclined position transversely, so that the said ears will readily roll or gravitate in a downward direction upon said table, which is of sufficient width to accommodate the longest ears and which is provided at the sides thereof with flanges 2, forming parts of the frame F.

Included in the frame F are pairs of uprights 3 and 4, the former near the upper or receiving end and the latter near the lower or delivery end. These uprights afford bearings for shafts 5 and 6, the former of which is journaled in slots 7 in the uprights 3, springs 8 being connected with the ends of the shaft 5 or, if preferred, with boxings in which the ends of said shaft may be mounted

to force the latter in the direction of the lower ends of the slots 7. The shafts 5 and 6 carry rollers 9 and 10, which support an exteriorly-slatted endless belt or carrier 11, the lower lead of which is driven in the direction of the delivery end of the device, the direction being indicated by an arrow A. The motive power may be derived from any suitable source and may be applied to a pulley 12, (indicated upon the shaft 6.) The means for transmitting motion has been indicated as a belt 13; but it is obvious that any suitable means may be employed within the scope of the invention.

The frame F includes a top piece 14, which connects the uprights 3 and 4, and to the sides of this top piece are pivoted a plurality of pairs of arms 15, carrying between them a plurality of rollers which are designated 16, 17, 18, and 19, said rollers being disposed between the leads of the endless belt or carrier 11 and adapted to bear upon the inner upper lead, thereby to force the latter in a downward direction with some degree of pressure, which is augmented by means of springs 20, which suitably connect the pairs of pivoted arms with the sides of the frame. It will be seen, then, that the endless belt or carrier 11 has the following characteristics, all of which are important in contributing to the successful operation of the machine, namely: The end of the belt nearest the receiving end of the machine is supported upon a roller which is vertically movable and which is spring-actuated in the direction of the table of the machine in order that ears of corn of various diameters may pass below the lower lead of the belt, and thereby be successfully operated upon by the machine. Again, the lower lead of the belt is subjected to the action of spring-actuated guide-rollers, whereby it is forced in the direction of the operating-table, so that ears of corn of unequal diameters may be operated upon with equal efficiency.

The operating-table 1 of the machine is supported in the frame F, the sides of which latter are extended downwardly below the plane of the table, said downwardly-extending sides being designated 21. At suitable intervals this table is provided with transverse slots 22, having downwardly-divergent edges, and adjacent to the upper edges of said slots are secured hook-shaped members 23, mounted upon cross-bars 24, whereby they are retained securely in position, said hook-shaped members being provided with smooth curved upper faces 25, which are extended downwardly in the direction of the discharge end of the machine and provided with sharp points or prongs 26, which latter are disposed slightly below the level or upper surface of the table 1. These hook members may be arranged in sets of any desired number and are preferably made about a quarter of an inch wide, so as to permit husked ears to pass over them without injury. Facing the pointed ends of said hook members are disposed rollers 27, each provided with a laterally-extending lug or rib 28, which is connected, by means of a light spring 29, with the beam 30 of the casing.

Journaled between the sides 21 of the casing, at the lower end of the latter—that is, below the point to which the table 1 extends—are several pairs of husking-rollers 31, the shafts 32 of which have bearings in slots 33 in the sides of the casing, so that by the action of a single spring 34 in each slot the several husking-rollers shall be held flexibly in contact with each other. The husking-rollers are provided with intermeshing gear-wheels 35, and one of said rollers is directly driven by means of a belt 36 from a pulley 37 upon the shaft 6, which, as hereinbefore described, is directly driven from some suitable source of power. The husking-rollers, which are thus rotated downwardly in pairs with relation to each other, may be slightly corrugated or longitudinally ribbed in order to enable them to operate successfully upon the fine husks, as will be presently understood.

In the operation of this device the ears of corn coming from the ordinary husking mechanism are deposited upon the upper end of the inclined table 1, upon which they roll or gravitate in a downward direction until they come within the range of action of the endless belt or carrier 11, the upper end of which is spring-supported, as described. The ear will be rolled by the action of said bolt in a downward direction until it reaches one of the slots between the hooks 25 and the roller 27. By contact with said roller 27 the ear of corn C under the influence of the slatted belt 11 will be rotated in the direction of the arrow D, the surface of the ear meanwhile sliding upon the rounded upper edge of the hook members 23. If the ear is completely husked, the hard kernels of the ear will not be engaged by the points of the hooks; but as soon as the roller 27 has been sufficiently rotated to cause the lug or rib to pass into engagement with the under side of the table the ear will be elevated against the tension of the belt 11 and will be carried by the action of the latter over said roller and in the direction of the next roller 27, which it passes in like manner. Frequently, too, the husked ear will be carried by the action of the belt 11 over the rollers 27 without rotating the latter at all, they being held against rotation by the springs 29. In like manner the belt 11 will carry the husked ear over the husking-rollers 31 to the point of discharge at the lower end of the machine. Whenever an unhusked or partly-husked ear is encountered, it will cause the rotation of the roller and will be thereby rotated in the direction indicated by the dart D, with the result that the fibers of the husk will be engaged and torn open by the points of the

hook member 23 before by the action of the rib or lug 28 they are caused to be elevated and passed onward by the action of the belt 11. As soon as the ear passes out of engagement with the roller 27 the latter is restored to normal position by the spring 29. One side of the ear having been operated upon, its opposite side, or a different portion thereof, will be operated upon by the next set of hooks 23 and roller 27, and the husk will thus be further loosened and adapted to be seized upon by the husking-rollers 31, whereby it is torn loose and detached from the ear, the latter after passing the several sets of husking-rollers being permitted to escape at the discharge end of the machine, while the husks pass downwardly between the husking-rollers to a husk-pile.

This device, as will be seen from the foregoing description, is extremely simple in construction. It may be operated at a slight expenditure of power, and it is well adapted to be attached to and operated in connection with husking machinery of any ordinary well-known description for the purpose of thoroughly completing the husking operation and avoiding the necessity, now frequently existing, of completing the husking operation by hand.

Having thus described the invention, what is claimed is—

1. In a device of the class described, an operating-table, means for conveying ears of corn from the receiving to the discharge end of said table, and ear-supporting hooks secured to said table for loosening the husks.

2. In a device of the class described, an inclined operating-table, means for rolling ears of corn in a downward direction upon said table, ear-supporting hooks, and rotary means for checking the ears and causing the latter to be rotated against said hooks.

3. In a device of the class described, an operating-table having recesses, ear-engaging means for rolling the ears over the table, rotary means mounted in the recesses of the table for checking the movement of said ears and causing them to be rotated by the advancing movement of the ear-engaging means and husk-loosening means opposed to the rotary checking means.

4. An operating-table, an endless ear-engaging carrier supported at a distance above said table, rotary ear-checking means projecting slightly above the level of the table, and ear-supporting husk-engaging means disposed opposite to the rotary checking means and cooperating therewith.

5. An operating-table, an endless ear-engaging carrier supported above said table, flexible supporting means for the upper end of said carrier, and spring-actuated rollers bearing against the inner side of the lower ear-engaging lead of said carrier, in combination with ear rotating and checking means journaled in recesses in said table and husk-loosening means in said recesses, opposed to the ear rotating and checking means.

6. In a device of the class described, an operating-table having slots, an endless ear-engaging carrier disposed above said table, rotary ear-checking means disposed in said slots adjacent to the lower edges of the latter, and husk-engaging hook members disposed adjacent to the upper edges of said slots and having downturned points disposed below the plane of the table.

7. In a device of the class described, a husk-loosening device comprising a plurality of ear-supporting hook members, and means for rotating an ear of corn in contact with said hook members.

8. In a device of the class described, a husk-loosening device comprising ear-supporting hooks having downturned points, a rotary checking member and an endless carrier traveling at right angles to the axis of the rotary checking means and coöperating with said rotary member to rotate an ear of corn in contact with said hook member and in the direction of the point thereof.

9. In a device of the class described, a husk-loosening device comprising curved ear-supporting hook members, a rotary member having a stop-lug, and an endless carrier adapted to rotate an ear of corn in contact with the rotary checking member and the husk-loosening hook members.

10. In a device of the class described, an operating-table, ear-engaging means for rolling ears of corn over said table, rotary checking means having stop-lugs, and retracting means for said rotary checking means.

11. In a device of the class described, an operating-table having transverse slots, husk-engaging hooks and rotary ear-checking means disposed contiguous to opposite sides of said slots and spaced slightly apart to permit ears to drop between the same, and spring-pressed ear advancing and rotating means.

12. In a device of the class described, an operating-table, having transverse slots, husk-engaging hooks and rotary ear-checking devices disposed contiguous to the edges of said slots and spaced apart for the reception between them of ears of corn, stop lugs or flanges upon the rotary checking means, retracting-springs connecting said flanges with fixed points, and endless flexibly-mounted ear engaging and advancing means.

13. In a device of the class described, an operating-table, flexibly-supported means for positively rolling ears of corn over said table, husk-loosening devices, rotary ear-checking means for holding ears of corn in rotary operative engagement with said husk-loosening devices, and husk-stripping rollers disposed near the discharge end of the machine.

14. In a device of the class described, an inclined operating-table, an endless ear-advancing carrier supported flexibly above said table, spring-actuated means for pressing the lower lead of said carrier in the direction of the table, husk-engaging hooks, and rotary checking means coöperating with the advancing means to rotate the ears operatively in contact with the husk-engaging members and provided with stop lugs or flanges to enable the ears to pass out of such engagement, and retracting means for said checking members.

15. In a device of the class described, ear-supporting husk-engaging hooks and means for rotating ears of corn in contact with said hooks and in the direction of the points of the latter.

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

JOSEPH BARNARD.

Witnesses:

EDWARD I. FRANKS,

JEROME DUNN.