E. W. DOUGLAS & D. PARKHURST.

CORN-SHELLER.

No. 183,653. Patented Oct. 24, 1876.

FIG. 1.

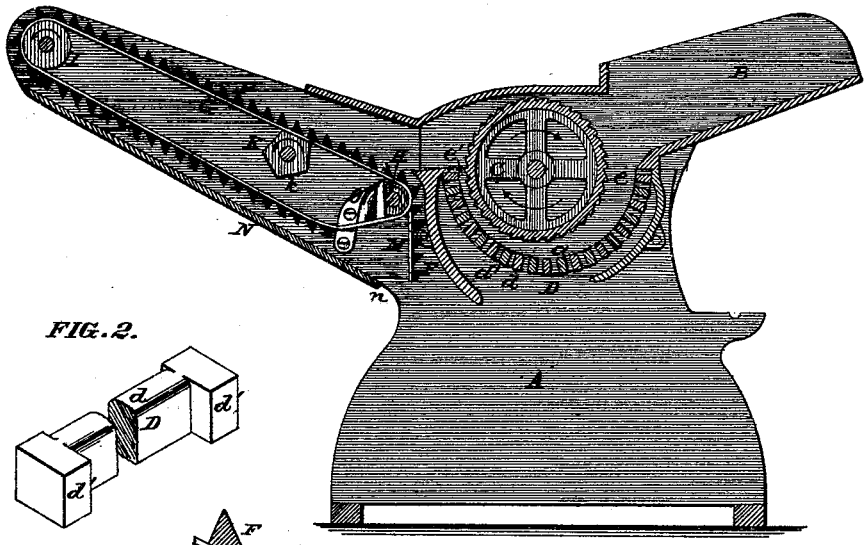


FIG. 2.

FIG. 4.

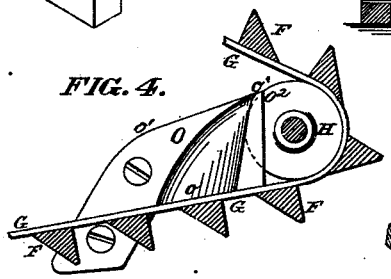
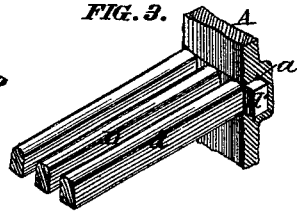


FIG. 3.



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UNITED STATES PATENT OFFICE.

ELLIOTT W. DOUGLAS AND DARIUS PARKHURST, OF ST. LOUIS, MISSOURI, ASSIGNORS TO KINGSLAND, FERGUSON & CO., OF SAME PLACE.

IMPROVEMENT IN CORN-SHELLERS.

Specification forming part of Letters Patent No. **183,653**, dated October 24, 1876; application filed March 7, 1876.

To all whom it may concern:

Be it known that we, ELLIOTT W. DOUGLAS and DARIUS PARKHURST, both of the city and county of St. Louis, and State of Missouri, have invented a new and useful Improvement in Corn-Shellers, which improvement is fully set forth in the following specification, reference being had to the accompanying drawings.

Our improvement relates, first, to the construction of curved grate beneath the shelling-cylinder. The grate is composed of bars of iron, cast or wrought separately, and whose ends rest in curved grooves in the sides of the case. The ends of the bars have side lugs to hold them the required distance, to take the proper hold on the corn-ears, and to allow the passage of the shelled corn between them.

The second part of our invention consists in the provision of inclined fenders at the ends of the lower belt-carrying pulleys, to prevent the shucks or other matters from passing between the belts and the pulleys, or becoming jammed between the pulleys and the sides of the case.

Figure 1 is a longitudinal section, showing as much of the machine as is requisite to exhibit our improvement. Fig. 2 is an enlarged detail perspective, showing the ends of one of the bars. Fig. 3 is a detail perspective, showing part of one of the side plates, with the ends of three bars in position therein.

The frame of the machine is shown at A. This may be of any suitable construction, to support the hopper-shelling cylinder and concave grate, the off-bearing apron, and the cleaning-shoe. B is the hopper. C is the toothed or ribbed shelling-cylinder, having rotation in the direction indicated by the arrows. The shelling-grate D is curved in the arc of a circle, eccentric to the shelling-cylinder, so that the space between the cylinder and grate decreases from the hopper at *e*—as the full ears, either with or without the husks, enter said space at *e*, and the cobs and shucks alone leave said space at *e'*.

The grate D is constructed of separate detachable bars *d*, having lugs *d'* at the ends to keep them the requisite distance apart in the groove *a* of the side pieces of the frame. The grooves *a* are made of sufficient depth to receive the whole of the lugs *d'*, so that the openings between the grate-bars extend from side to side, and consequently there is no impediment to the passage of corn through said spaces, as there would be were the side lugs *d'* allowed to project beyond the inner surface of the sides. The bars are put in place, one at a time being entered at the ends of the grooves *a*.

This construction of the grate allows either of the bars that may be broken, in consequence of original defect or from the accidental entrance of a stone into the machine, to be detached and replaced with a new one, or easily repaired, at a very small cost and without any fitting or skilled labor.

The shelled corn and a portion of the husks (where the corn is not husked) fall upon the riddles of an ordinary cleaning-shoe beneath. This shoe is not shown, as no novelty is claimed in the same.

The shaking belt or apron consists of triangular slats F, attached at the ends to belts G, which pass around pulleys H I at the ends of the apron. The belts G also pass over angular wheels or shakers K, which have a positive rotation, so that the angles *k* raise the belt and impart a rapid shaking motion thereto. This motion is to dislodge the shelled corn from the shucks and from the belts G, so that it may not be carried over the tail of the machine. Where the apron is inclined upward toward the tail (as is proper) the shaking tends to cause the cobs to roll backward toward the cylinder. To overcome this tendency we make the slats angular, and fasten them on the belts G, in the position shown, so that the sides perpendicular to the belts G are forward, and so the cobs are prevented from rolling backward on the belt, as will readily be understood.

The smaller pieces of shuck, &c., will to some extent drop through between the slats into the interior space L of the slat-apron, and in time said space might become filled with the shucks, &c. To avoid this I form the apron with a loose flap, M, which drops open as soon as it passes over the pulley I, and

hangs open on the return or lower side of the belt until it reaches the pulley H, where it closes by its weight, and remains closed until it again reaches the pulley I.

It will be seen that the shucks, &c., will drop out of the flap-opening, and be carried down to the lower end of the inclined floor N, and dropped on the shoe, and blown out with the pieces of shuck and cob ends that have passed through the grate D.

The flap M answers another useful purpose besides allowing the escape of the shucks, &c., namely, to scrape any material collecting on the inclined floor N down to the lower end *n* of the same. The flap M is constructed and attached, as shown, namely, of slats F, attached at the ends to pieces of leather or other flexible material, fastened at the front end to the belts G.

O are fenders attached to the inside of the case, at each side. Said fenders have lower sides *o*, inclined outward from the inner surfaces of the case, and in contact (or nearly so) with the belt at that point, so as to carry all matters from the belt at that point, and prevent them from being carried beneath the pulley, and from becoming jammed between the ends of the pulley and the case. The upper edge of the fender is inclined upward at o^1, when it is parallel with the case, and extends outward at right angles to the case at o^2.

It will be seen that the shucks are thrown toward the middle of the apron and discharged through the opening of the flap M.

We claim—

1. The curved grate D, constructed of detachable bars *d*, formed with distance-lugs *d'*, and resting in grooves *a*, substantially as set forth.

2. The combination of the apron F G, pulley I, and fenders O, substantially as and for the purpose set forth.

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Witnesses:
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