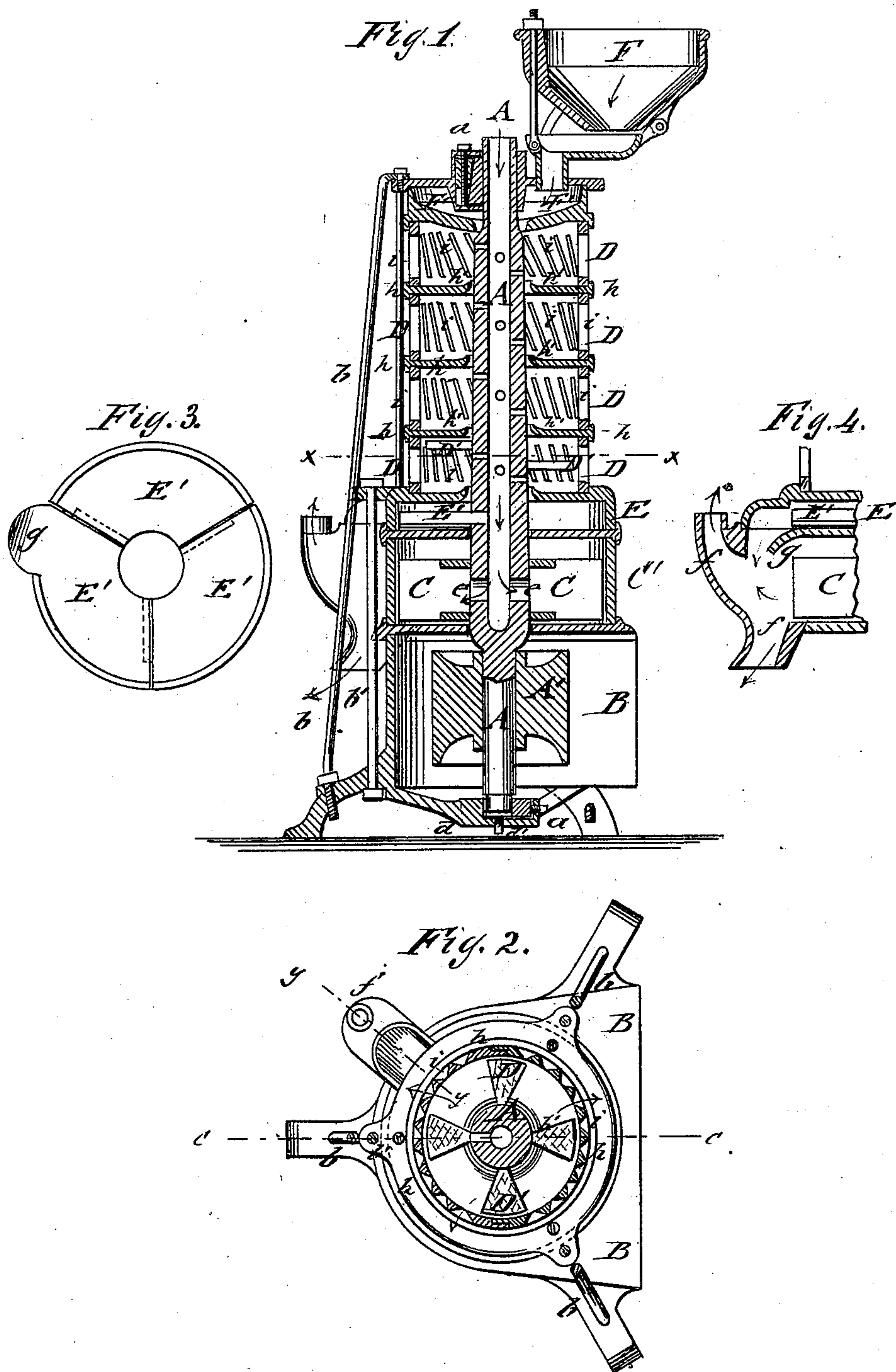


G. W. RICHMOND.

CORN HULLER.

No. 177,158.

Patented May 9, 1876.



WITNESSES:

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# UNITED STATES PATENT OFFICE.

GEORGE WASHINGTON RICHMOND, OF SPRINGFIELD, ILLINOIS.

## IMPROVEMENT IN CORN-HULLERS.

Specification forming part of Letters Patent No. **177,158**, dated May 9, 1876; application filed February 28, 1876.

*To all whom it may concern:*

Be it known that I, GEORGE W. RICHMOND, of Springfield, in the county of Sangamon and State of Illinois, have invented a new and Improved Corn-Hulling Machine, of which the following is a specification:

In the accompanying drawing, Figure 1 represents a vertical central section on the line *c c*, Fig. 2, of my improved hulling-machine. Fig. 2 is a horizontal section of the same on line *x x*, Fig. 1; Fig. 3, a top view of the horizontal partition-plate of the exit-chamber; and Fig. 4, a detail vertical section of the exit-channels for the hulled corn and chaff, and other light matter.

Similar letters of reference indicate corresponding parts.

My invention relates to improvements in corn-hulling machinery for producing hominy, being constructed in such a manner that the corn is fed continuously at the top and discharged in hulled state at the bottom. The shaft with the rasp-cut hullers is revolved with great rapidity without being liable to breakage or injuring the machine.

The invention will first be described in connection with the drawing, and then pointed out in the claims.

In the drawing, A represents the central shaft of my improved corn-huller, that extends in vertical direction through the same, being supported in top and bottom bearings *a*, placed on diametrical arms of the frame or casing of the machine. The top and bottom sections of the frame are connected by strengthening brace-rods *b* and fastening screw-nuts, to bind the entire apparatus rigidly together. The huller is divided into the lower belt section or chamber B, the fan-casing C' with the exit-chamber E for the hulled corn next above the same, and a suitable number of hulling chambers or compartments, D, above the exit-chamber E. The base or stand of the hulling-machine is supported on strong feet, and has a central step, *d*, with adjustable wood or metal journal-bearings, regulated by set-screws, as shown in Fig. 1. The shaft A is also raised or lowered by a bottom set-screw, *d'*, at the center of the step. The top bearing of the shaft is also made of three or more wood or metal blocks or followers of beveled shape,

that are adjusted by corresponding bevels, with vertical set-screws to hold the shaft steadily and securely at the upper end, as shown in Fig. 1. The shaft A is revolved by a pulley, A', and belt at great velocity, the pulley being of somewhat larger diameter than the radial hulling-arms at the upper part of the machine, which gives greater leverage and power to the same. The pulley runs in the belt-chamber B, that is open at the rear for the belt, and closed in front and at the sides, forming a protecting-casing for the belt and pulley. The fan-casing C' is seated above the belt-chamber B on a strong partition-plate. The fan C receives the supply of air from the top of the mill through the hollow upper part of the shaft and apertures *e* opening into the fan-casing at the lower part, the revolutions of the fan drawing in the air and forcing the same with considerable power through the exit channels *f* of the fan-casing to the outside. One of the exit-channels *f* opens in upward direction, the other in downward direction, for the purpose of forcing out the hulls and chaff carried along with the corn through the former, and dropping the hulled corn through the bottom channel to a suitable receptacle, as indicated by arrows in Fig. 4. The corn passes over a downward-curved semicircular plate, *g*, of the horizontal division-plate of fan-casing C' and exit-chamber E into the fan-blast, to be freed of the chaff. One or more stirrer-arms, E', of the shaft revolve in the exit-chamber E, and feed the corn evenly and regularly to the exit-channels and to the action of the fan-blast. The belt-chamber B, fan-casing C', and exit-chamber E, form the lower or base part of the hulling-machine, and are securely bound together by vertical connecting-bolts *b'*, the upper hulling-compartments D, of somewhat smaller diameter being placed on top of the lower part. The hulling-compartments D are made of cylindrical shape, of one section or of two overlapping sections, being bound at the rimmed circumference by the partition-plates *h* with exterior T-flanges. The partition-plates *h* may be also made of one or more sections, suitably fitted together by overlapping edges, and are provided around the shaft with an upward-flaring edge or lip, *h'*, that retards the corn in its



passage from one compartment to the other. The annular spaces formed between the flaring lip and the shaft decrease gradually from the upper to the lower compartment by the increase of thickness of the shaft, so that an even movement of the gradually-hulled corn throughout the compartment is obtained. The cylindrical hulling-sections have diagonal slots or openings for the escape of the hull, which is cut or ground from the corn by four or more wedge-shaped rasp-cut hullers, D', in each compartment, which hullers are set spirally around the shaft, and at slight inclination toward the horizontal partition-plates, to pass more easily through the corn. The huller-arms and shanks are preferably made entirely of steel, the shanks being annealed to avoid the breaking off of the hullers, which occurs frequently in the present hullers with welded iron shanks, and causes repairs and sometimes considerable damage to the machine. The corn is fed continuously from a hopper, F, at the top of the machine to a dish-ing top plate, F', and is then conveyed from compartment to compartment by the downward tendency of the diagonal openings of

the cylindrical sections and the spirally-set hullers until the hulled corn arrives in the exit-chamber, and drops as hominy through the fan-blast, freed from all hulls or chaff, to the outside, ready to be sorted for the market.

The corn huller has a regular feed and discharge, and acts powerfully and rapidly on the corn, so as to hull it in more perfect and economical manner than with the present machines.

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

1. The cylindrical hulling-compartments, being made of rimmed cylindrical sections, having diagonally-inclined exit openings or slots for the hulls, substantially as described.

2. The huller-plates secured by a T-flange, having small lug on inside of section-ring, and a notch in each part of plate, as shown and described.

GEORGE WASHINGTON RICHMOND.

Attest:

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