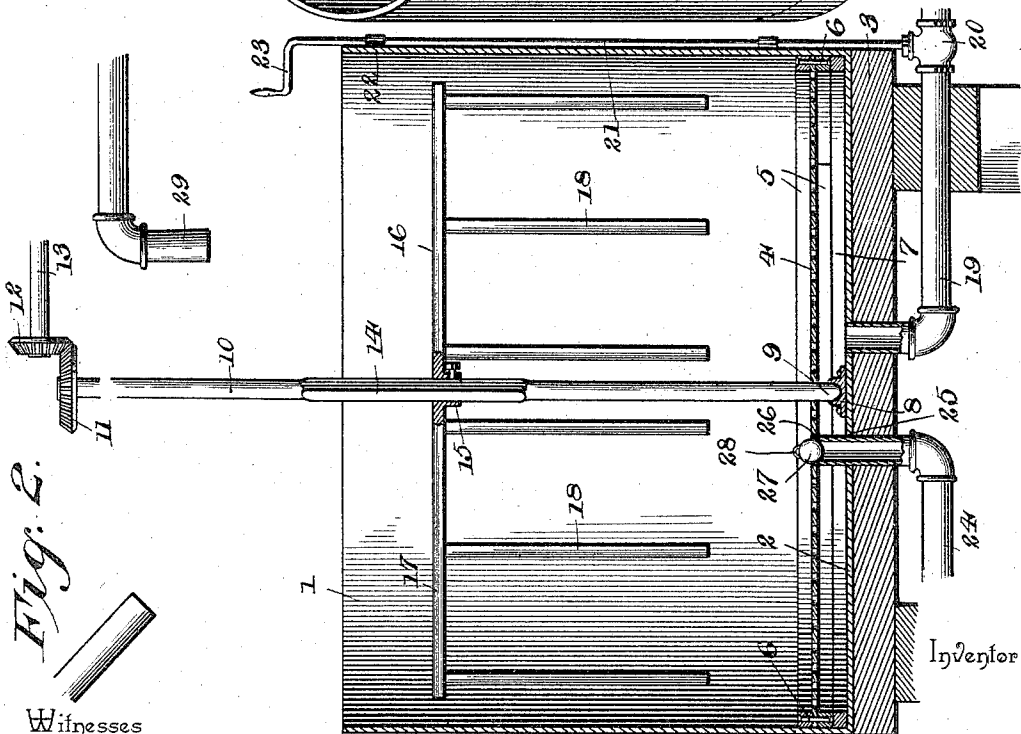
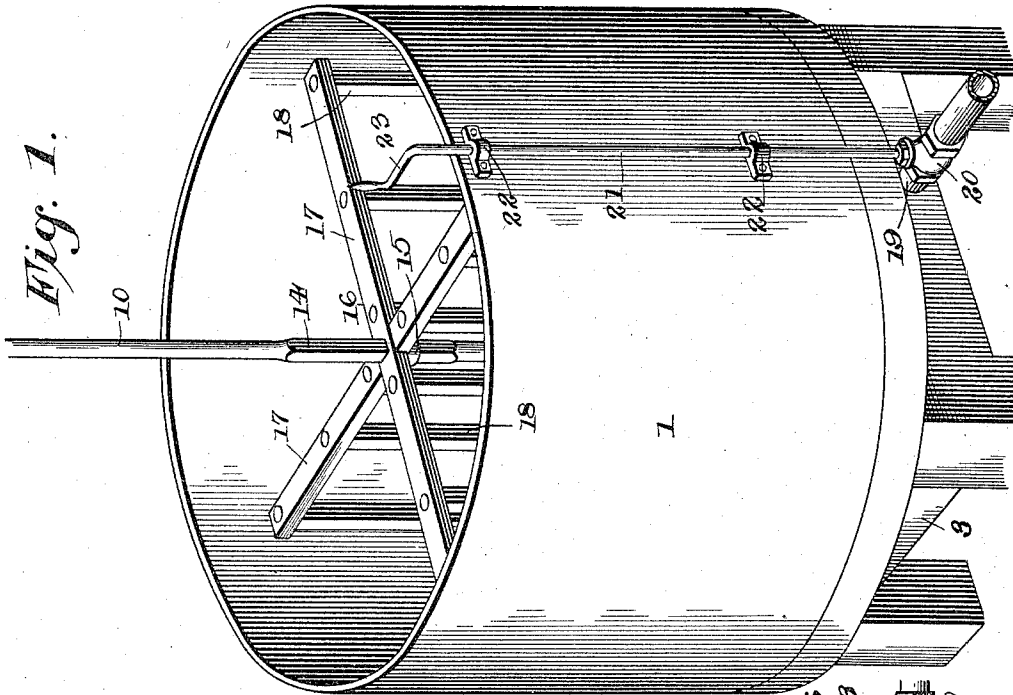


(No Model.)

K. HOPKINS.
CEREAL WASHER AND HULLER.

No. 580,401.

Patented Apr. 13, 1897.



Witnesses

Chas. A. Ford.
D. C. Hollensted

By his Attorneys, Kirk Hopkins,
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UNITED STATES PATENT OFFICE.

KIRK HOPKINS, OF SPRINGVILLE, NEW YORK, ASSIGNOR, BY MESNE ASSIGNMENTS, TO JOHN O. CHURCHILL, OF SAME PLACE.

CEREAL WASHER AND HULLER.

SPECIFICATION forming part of Letters Patent No. 580,401, dated April 13, 1897.

Application filed December 21, 1895. Serial No. 572,923. (No model.)

To all whom it may concern:

Be it known that I, KIRK HOPKINS, a citizen of the United States, residing at Springville, in the county of Erie and State of New York, have invented a new and useful Cereal Washer and Huller, of which the following is a specification.

This invention relates to cereal washers and hullers; and it has for its object to provide a simple apparatus of this character for washing and hulling corn or other cereals preparatory to producing hominy out of the same.

To this end the main and primary object of the invention is to construct a washing and hulling apparatus which involves a new method of treating cereals for producing hominy, whereby very large quantities of the product may be prepared, which heretofore has not been possible, because by the ordinary methods in common use one person has only been able to prepare but very small quantities of the product which is ultimately intended to be manufactured into hominy.

With these and other objects in view, which will readily appear as the nature of the invention is better understood, the same consists in the novel construction, combination, and arrangement of parts hereinafter more fully described, illustrated, and claimed.

In the drawings, Figure 1 is a perspective view of a cereal washer and huller constructed in accordance with this invention. Fig. 2 is a central vertical sectional view thereof.

Referring to the accompanying drawings, the numeral 1 designates a large tub or vat open at its upper end and provided with an imperforate bottom 2, resting on a suitable supporting frame or stand 3. The tub or vat 1 is preferably made of sheet metal and of a sufficient size to accommodate therein at one time a large quantity of corn or other cereal that is to be washed and hulled preparatory to producing hominy out of the same. Arranged within the lower part of the tub or vat 1 is a horizontal perforate false bottom 4, which lies in a plane above the main imperforate bottom 2, and the said false bottom 4 is made of perforate sheet metal or any other suitable screen material.

The perforate false bottom 4 of the tub or

vat is secured at its edges between a pair of superposed clamping-rings 5, which snugly and removably register within the tub or vat and which are preferably joined together by bolts or rivets 6. The lower of said clamping-rings 5 rests on a spacing-ring 7, arranged on the main bottom of the tub or vat to provide means for properly spacing the false bottom above the main bottom; but it will be noted that by reason of the particular manner of arranging the false bottom in position the same can be readily removed and replaced whenever desired or necessary, it of course being understood that perforate false bottoms of different mesh may be employed, according to the character of the cereals being treated.

The main bottom 2 is provided at a central point on its upper side with a bearing-step 8, in which is stepped the lower rounded end 9 of a vertical agitator-shaft 10, which extends centrally through the bottom 4 out of and above the tub or vat and carries at its upper end a horizontal beveled gear-wheel 11, which meshes with an adjacent bevel gear-wheel 12, mounted on a suitable drive-shaft 13. The vertical agitator-shaft 10 is provided intermediate of its ends with a squared portion 14, on which is adjustably fitted the collar 15 of an agitator 16. The agitator 16 essentially comprises a series of centrally-intersecting cross-arms 17 and a series of agitator fingers or bars 18, fitted at their upper ends to said cross-arms and depending within the tub or vat to a point above the false bottom 4, and by properly adjusting the agitator the said agitator fingers or bars may be arranged so as to work directly into the mass that is introduced into the tub or vat to be treated, as will be more particularly referred to.

The main bottom 2 of the tub or vat has fitted therein one end of a drain-pipe 19, of a suitable diameter to provide for carrying off the washings or slop from the tub or vat, and said pipe is provided at a suitable point with a valve or stop-cock 20, the stem of which is conveniently extended into a valve-controlling rod 21, journaled in suitable bearings 22 at one side of the tub or vat and having at its upper end a crank-handle 23, whereby the

valve 20 may be conveniently opened or closed. In addition to the pipe 19 a discharge-pipe 24 is extended through an opening 25 in the main bottom 2 and is fitted at one end in an opening 26, formed in the false bottom 4, so as to communicate with the interior of the tub or vat above said false bottom, and removably seated in the end of the pipe 24 is a ball-valve 27, preferably provided with a loop or eye 28, which may be conveniently engaged by a wire or suitable hook for lifting the said valve out of its seat, so as to open up communication through the pipe 24.

In the use of the apparatus the corn or other cereal to be treated is first subjected to the action of potash lye or other suitable chemical in a suitable vessel until the hull of the cereal has become broken and loosened to a sufficient degree so that the same can be readily removed. At this stage the mass of cereal and chemical is introduced into the tub or vat 1, so as to rest on the false bottom 4 thereof. A stream of water is now introduced into the tub or vat through a water-supply pipe 29, arranged above the same, and before the drain-pipe 19 is opened up a sufficient quantity of water is allowed to accumulate in the tub or vat until the mass therein is entirely submerged. The valve 20 being opened, a constant stream of clean water is allowed to flow into the tub or vat, and the agitator is at the same time given a rotation, so as to thoroughly stir up and agitate the cereal in order that the flowing water can reach every part of the mass and thoroughly cleanse the same. The combined action of the flowing water and the agitator provides means for completely removing the loosened hull from the cereal, while at the same time washing every trace of chemical therefrom. The hulls and other foreign matter pass through the perforations of the false bottom and are washed out through the drain-pipe 19, but the flow of water is continued until the water which passes out of the drain-pipe 19 is perfectly clear and has no trace of chemical therein, at which time the operator will know that nothing but the washed and hulled product or cereal remains on the false bottom 4 in its natural state, excepting that the hull and eye are removed from each separate grain. At this point of the process the valve 27 is lifted out of its seat, and by allowing the water to still run into the tub or vat from the pipe 29 the washed and hulled product is washed out of the tub or vat through the discharge-pipe 24 into a suitable retort or

cooking vessel, in which the product is cooked to produce hominy.

The many advantages of the herein-described process and apparatus for washing and hulling cereals will be readily apparent to those skilled in the art without further description, and it will be understood that changes in the form, proportion, and the minor details of construction may be resorted to without departing from the principle or sacrificing any of the advantages of this invention.

Having thus described the invention, what is claimed, and desired to be secured by Letters Patent, is—

1. The method of preparing and treating cereals for making hominy, which consists in first subjecting the cereal to the action of a chemical for loosening and breaking the hull, then entirely submerging the mass of cereal in a quantity of water within a suitable vessel, creating and maintaining a constant circulation of clean water through the vessel and simultaneously agitating the mass therein to provide for completely removing the loosened hull from the cereal and washing every trace of chemical therefrom, and finally washing or flushing the hulled and cleaned cereal through a suitable discharge passage or pipe into a separate retort or vessel for cooking to produce the hominy product, substantially as set forth.

2. In a cereal washer and huller, the combination of a tub open at the top and provided with an imperforate main bottom, a perforate false bottom removably fitted within the tub above its main bottom and provided with a pipe-opening, a valved drain-pipe fitted in the main bottom of the tub, a discharge-pipe extended through the main bottom and fitted in the pipe-opening of the false bottom, a ball-valve adapted to be manipulated from the top of the tub and removably seated in the upper end of said discharge-pipe, an agitator-shaft centrally and vertically arranged in the tub, and a revolving agitator adjustably fitted on the shaft and provided with a series of depending agitator fingers or bars, substantially as set forth.

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

KIRK HOPKINS.

Witnesses:

JOHN H. SIGGERS,
GEO. C. SHOEMAKER.