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WHEAT SCALPING AND CONDITIONING MACHINE.

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1,254,008. Patented Jan. 15, 1918.

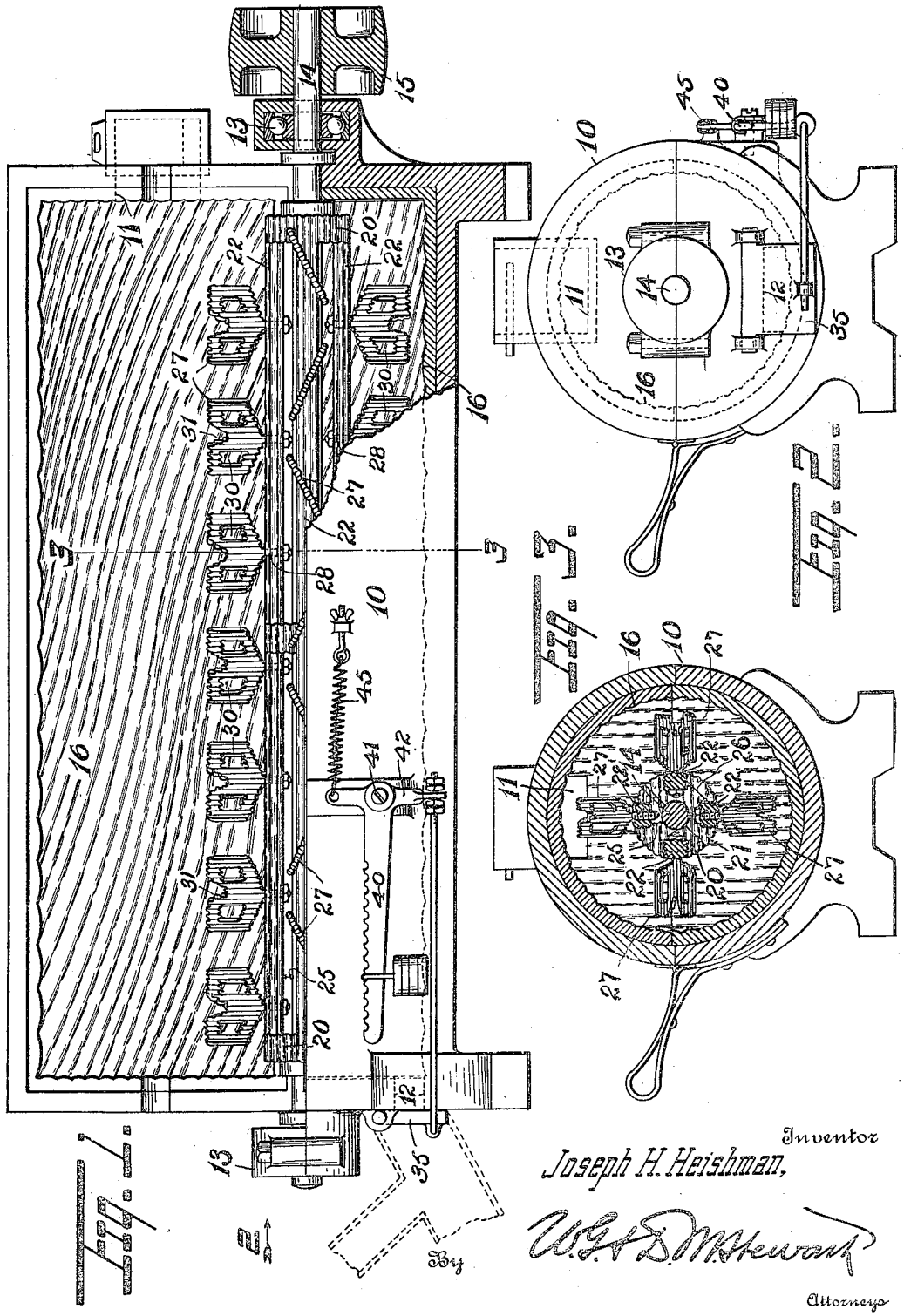


Fig. 1.

Fig. 2.

Fig. 3.

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WHEAT SCALPING AND CONDITIONING MACHINE.

1,254,008. Specification of Letters Patent. Patented Jan. 15, 1918.

Application filed May 10, 1916. Serial No. 96,483.

To all whom it may concern:

Be it known that I, JOSEPH H. HEISHMAN, a citizen of the United States, residing at Port Huron, in the county of St. Clair and State of Michigan, have invented certain new and useful Improvements in Wheat Scalping and Conditioning Machines, of which the following is a specification.

My invention relates to improved mechanism for treating wheat particularly, preliminary to grinding the same; the purpose being to provide for continuously and effectively scalping or removing the bran, for eliminating the undesirable berries and extraneous matter such as garlic and smut, and for properly conditioning the material. The invention is fully described in connection with the accompanying drawings illustrating the same in preferred form, and the novel features are clearly defined in the subjoined claims.

Figure 1 is a longitudinal elevation, showing the upper half of the casing raised and a portion of the lower casing broken away.

Fig. 2 is an end view showing the casing closed.

Fig. 3 is a cross-section on the line 3—3 of Fig. 1.

The horizontally arranged cylindrical casing 10, has its upper half hingedly connected, and is provided at one end with an inlet opening 11 for feeding in the stock, and at the other with a gate-controlled outlet 12 for the treated material, as hereinafter more fully described. At each end is also provided a suitable bearing 13, 13, for a centrally mounted horizontal shaft 14, to which rotary movement is imparted through a belt wheel 15, as indicated; and the inner walls of the cylinder, including its hinged cover portion, are provided with spirally arranged ribs 16, preferably formed as a separably secured wall lining so as to permit renewal when worn and modification of form if desired.

The rotary shaft 14 is specially constructed to serve as an agitator device adapted to effectively remove the bran and all extraneous matter from wheat berries, and to break up the softer berries which are unsuited for grinding with the harder ones under treatment; while at the same time serving in connection with the spirally ribbed inner wall of the casing and the automatically regulated outlet 12, to regulatedly discharge the treated material from the casing. This improved construction comprises, as shown, a split collar 20—21 partably secured to the shaft 14 adjacent each end of the casing; longitudinal bars 22, 22, 22, 22, rigidly extending between said collars parallel with the shaft but spaced away from the latter and from each other so as to provide intervening spaces 25 and 26 respectively; and a series of radially arranged paddle-blades 27 spacedly mounted upon each of said bars by means of pivotally engaged shank portions 28 thereof, so as to permit of their being independently adjusted to different angles with respect to the axis of the shaft and rigidly secured in such adjusted relation. Each of these paddle-blades is provided, as shown, with one or more openings or apertures 30 and edgewise recesses 31, forming restricted passageways for the wheat berries. All the berry-contacting surfaces of each paddle are ribbed as indicated so as to effect a rubbing and crushing action upon the passing berries; and the berry-contacting surfaces of the bars 22 and collars 20—21 are similarly ribbed for the same purpose. Certain of the bars 22 are fixed to corresponding parts of the split shaft collars 20, 20, while the others are fixed to the other collar parts 21, 21 thus permitting of conveniently detaching the bars in pairs or groups to facilitate proper adjustment of the paddle blades.

The length of time during which the material fed into the casing at one end is subjected to the action of the rotary agitator mechanism described, before it is discharged from the casing at the other end, as well as the intensity of such action, may be readily varied as desired even with a fixed speed of rotation. The spirally ribbed inner walls of the casing are adapted to feed the centrifugally flung material toward the exit end of the casing, and this feeding-onward action may be varied by the relative setting of the angularly adjusted paddle blades, so as to produce a pressing action upon the movable gate 35 which controls the outlet opening 12 of the casing. The rapidity of discharge however is independently regulated, and automatically controlled as determined, by providing a variably adjusted resistance to such feed pressure upon the gate. This is accomplished as shown by employing a weight-beam 40, pivoted at a fixed point 41 and having its short arm 42 connected by a link 43 to the gate; so that any

required resistance to the opening movement of the gate may be secured and maintained by corresponding adjustment or variation of the weight upon the beam. An adjustable spring 45 secured to the weight-beam 40 as shown, serves to counterbalance said arm if desired.

The operation of my improved machine is simple, and has already been made clear in connection with the foregoing description. The stock operated upon is subjected to constant and very effective treatment by the rubbing and pressing action incident to its circular movement between the ribbed surfaces and restricted passage ways of the rotary agitator device, which action is continued at all stages of its gradual longitudinal movement to the casing exit as determined by the automatic control of the discharge, adjusted to the requirements in each case. It will be readily understood that the bran and extraneous material, as well as the berries unable to stand the requisite treatment, may be readily separated in well known ways after their discharge. Some of the paddle-blades 27 may be omitted from the bars 22, and instead fixedly mounted within the casing so as to impede the free movement of the grain.

What I claim is:

1. In combination with a cylindrical casing having inlet and discharge openings at opposite ends; a rotary agitator device in said cylinder comprising a circular series of spaced-apart longitudinal bars, and series of radially extending paddle blades pivotally secured to the respective bars in angularly adjustable position; said blades being apertured and the material-contacting surfaces thereof being roughened.

2. In combination with a cylindrical casing having inlet and discharge openings at opposite ends; a rotary agitator device in said cylinder comprising a circular series of spaced-apart longitudinal bars, and series of radially extending paddle blades pivotally secured to the respective bars in staggered relation and with adjacent blades upon each bar in reversely angled position thereon; said blades being apertured and the material-contacting surfaces thereof being roughened.

In testimony whereof I affix my signature.

JOSEPH H. HEISHMAN.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."