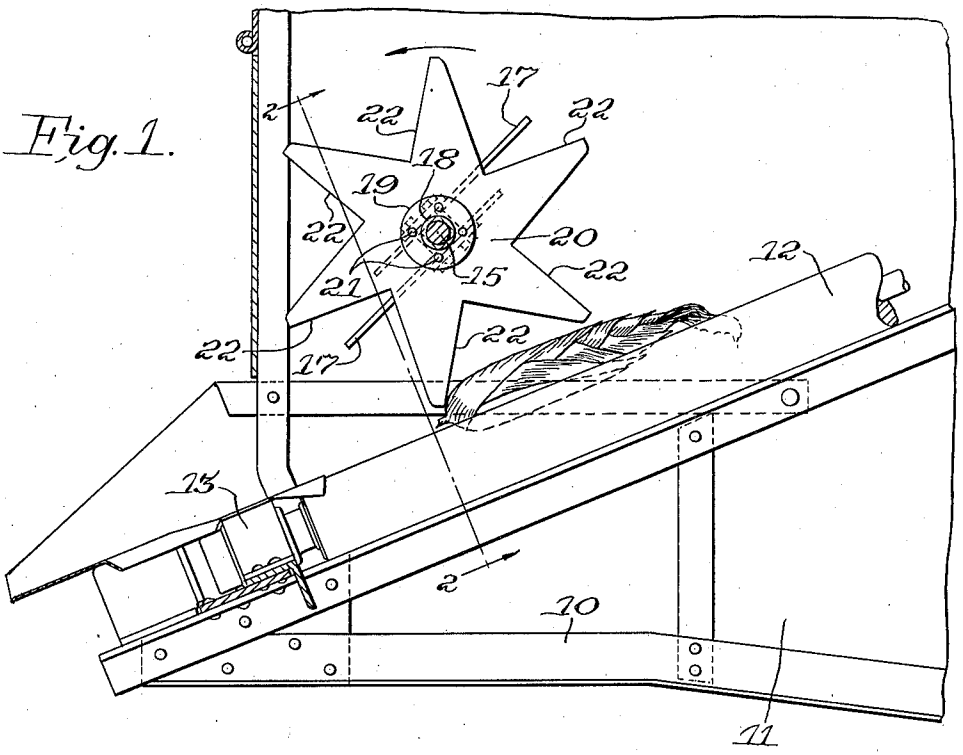
Sept. 13, 1938. M. W. ROSCOE 2,129,744

EAR RETARDER FOR CORN HUSKERS

Filed March 13, 1936

Fig. 1.



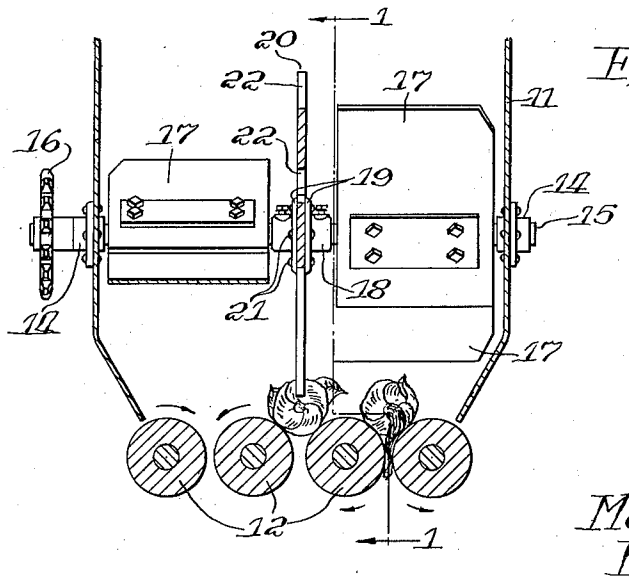


Fig. 2.

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EAR RETARDER FOR CORN HUSKERS

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8 Claims. (Cl. 130—5)

The invention relates to an improved ear retarder for use in corn husking machines.

Corn huskers embody pairs of husking rolls inclined at an angle to the horizontal, so that the ears to be snapped and husked feed by gravity from the high end of the rolls to the low end thereof. Sometimes ears will pass to the lower end of the rolls and discharge therefrom without being husked. This happens when an ear accidentally lodges between sets of rolls where no husking action can occur. Various means have been provided to hold the unhusked ears at the lower end of the rolls to prevent their discharge when not yet husked. Such means have not proven entirely satisfactory.

The main object of this invention is to provide an improved ear retarder mechanism, which will insure complete husking of all ears moving down the rolls.

Another object is to provide such means located above the rolls and between the sets thereof at their lower, or discharge, ends, so that the retarder will function with maximum efficiency.

Still another important object is to provide a rotary driven retarder located as above stated and which will, because of its simplicity, be cheap to produce, fool-proof in operation, and adaptable for use in standard huskers, or huskers and shredders without materially altering the construction thereof, or without in any way interfering with the normal functioning of the other operative parts thereof.

Another important object is to provide a rotary retarder of a particular construction so that it will best perform its intended function of engaging the butts of the ears and kicking them back onto the rolls.

Other important objects will become apparent to those skilled in this art as the disclosure is more fully made.

Such objects are attained by the illustrative form herein disclosed comprising a practicable embodiment of the invention. In this form, a star wheel is rotated on a horizontal axis, so that it lies in a vertical plane for rotation over the discharge or lower ends of the rolls and in a position between sets or pairs of the rolls, so that an ear at this point will be engaged by a prong or point of the star wheel to have its butt forcibly engaged to toss the ear back to a higher point on the rolls for causing it to assume a position with respect to the rolls enabling it to be husked.

In the accompanying sheet of drawings:

Figure 1 is a longitudinal side sectional view through the improved husker and shredder taken along the line 1—1 of Figure 2, looking in the direction of the arrows; and,

Figure 2 is a detail, transverse, sectional view through the machine, taken along the line 2—2 of Figure 1, looking in the direction indicated by the arrows.

The husker and shredder shown is of any standard form and embodies a frame 10 including housing sides 11. The machine shown by way of example is a four-roll type providing two sets or pairs of combined husking and shredding rolls 12. These rolls, as shown, are inclined from the horizotal and disposed in the same inclined plane and in parallelism. The low, or discharge, ends of these rolls are carried in a journal box 13 in the conventional manner. The opposite, or high, end of the rollers is the charging or material feeding end. The rolls in each pair rotate toward each other, as shown by the arrows in Figure 2, and the ears are snapped from the stalks at the upper ends of the rolls. The lower ends serve to remove the husks from the ears, and to perform this function the ears must move down the space between the rollers in each set or pair, as shown by the ear at the right in Figure 2.

Sometimes ears gravitate and move down the center line of the machine in the trough or space formed between the two sets of rolls. The rotation of the adjacent roll surfaces delineating this passage is such that no husk removing action can result, and thus such ears of corn will move downwardly and off the lower ends of the rolls without being husked. This, of course, is most undesirable. Accordingly, the improvements of the present invention have been provided to overcome this problem.

The side walls 11 of the machine carry journal bearings 14 for rotatably mounting a horizontal, transverse shaft 15 across and above the lower end of the rolls 12, as shown in Figure 1. A projecting end of the shaft carries a sprocket wheel 16 to enable said shaft to be driven. Within the housing the shaft carries for rotation therewith a pair of paddles 17 disposed one each over each pair of rolls 12, as shown.

Between the paddles 17, the shaft 15 has locked thereon a hub 18 providing spaced flanges 19 lying in vertical planes, and between which flanges is located a relatively large star wheel 20. Rivets 21, or other appropriate fastening means, serve securely to connect the wheel 20 to the flanges 19, whereby the wheel 20 turns with the shaft and paddles. As viewed in Figure 1, these rotating parts turn counterclockwise, as shown by the arrow.

This wheel 20 is made of flat sheet metal stock and lies in a vertical plane, as shown in Figure 2, between the two sets or pairs of rollers. The wheel further is of star conformation and has six equidistantly spaced points or prongs shaped to give the greatest strength and each prong presenting a short, non-radial, straight edge 22, to engage the butt end of an ear lying between the sets of rolls in its plane of rotation to engage or kick said ear upwardly and back onto the higher end of the rolls, so that such kicked-back ears will sooner or later lodge properly between the rolls in each pair to be husked by the rolls before being discharged from the machine. By means of the star wheel, it is impossible for an unhusked ear of corn to slide off the low ends of the rolls. The star wheel prongs are so formed that the ear engaging edges 22 of the prongs will meet the ears at substantially a right angle to the axis of the ear, whereby in the best possible manner to strike the ear squarely to kick it back along the inclined plane down which it slides. The faces 22 are slightly non-radial to the axis of the wheel 20, so as to make as wide as possible the face of each prong to secure the necessary strength and still achieve the approximate right angle engagement of the ears, as described.

The paddles 17 are flexible and serve to retard and align the ears properly on the rollers. The use and operation has amply been described above and, because of the simplicity of the star wheel, it seems unnecessary to describe its operation further.

It is the intention to cover all changes and modifications of the preferred example of ear aligner and retarder herein shown and described for the purposes of the disclosure which do not in material respects depart from the spirit and scope of the invention as hereinafter claimed.

What is claimed is:

1. A corn husker comprising a housing carrying two sets of corn treating rolls arranged a pair in each set with all rolls inclined from the horizontal and lying parallel in the same inclined plane, a shaft journaled in the housing and disposed over the lower ends of the rolls, a single star wheel retarder carried by the shaft at a point between the two sets of rolls for rotation therewith in a vertical plane, said wheel having substantially blunt ear engaging portions and being movable above the space formed between the two sets of rolls to engage an ear lying longitudinally therein to stop its downward movement, the direction of rotation of the wheel being such that the lower portion thereof moves away from the lower ends of the rolls to kick the ear back toward the upper ends of the rolls, and means to drive the shaft and rotate the wheel.

2. A corn husker comprising a housing carrying two sets of corn treating rolls arranged a pair in each set with all rolls inclined from the horizontal and lying parallel in the same inclined plane, a shaft journaled in the housing and disposed over the lower end of the rolls, a single bluntly pronged wheel retarder carried by the shaft for rotation therewith in a vertical plane disposed between the two sets of rolls, the prongs of the wheel being movable above the space formed between the two sets of rolls to engage an ear lying longitudinally therein to stop its downward movement, said wheel rotating in a direction such that the lower prongs move away from the lower ends of the rolls to kick the ear back toward the upper ends of the rolls, and means to drive the shaft and rotate the wheel.

3. A corn husker comprising a housing carrying two sets of corn treating rolls arranged a pair in each set with all rolls inclined from the horizontal and lying parallel in the same inclined plane, a horizontal shaft journaled in the housing and disposed over the lower end of the rolls, a pair of paddles secured to and turnable with the shaft and respectively operable over each set of rolls, said paddles generating a cylinder about the axis of the shaft, a single star wheel retarder carried by the shaft between the paddles for rotation therewith in a vertical plane disposed between the sets of rolls, the points of the wheel generating a circle about the axis of the shaft of greater diameter than the diameter of the aforesaid generated cylinder, said points being movable above the space formed between the two sets of rolls to engage an ear lying longitudinally therein to stop its downward movement, the direction of rotation of the wheel being such that the lower points move away from the lower ends of the rolls to kick the ear back toward the upper ends of the rolls, and means to drive the shaft.

4. A corn husker comprising a housing carrying two sets of corn treating rolls arranged a pair in each set with all rolls inclined from the horizontal and lying parallel in the same inclined plane, a horizontal shaft journaled in the housing and disposed over the rolls, a pair of flexible paddles secured to and turnable with the shaft and respectively operable over each set of rolls, said paddles generating a cylinder about the axis of the shaft, a star wheel retarder carried by the shaft between the paddles for rotation therewith in a vertical plane disposed between the sets of rolls, the points of the wheel generating a circle about the axis of the shaft of greater diameter than the dameter of the aforesaid generated cylinder, said points being movable above the space formed between the two sets of rolls to engage an ear lying longitudinally therein to stop its downward movement, the direction of rotation of the wheel being such that the lower points move away from the lower ends of the rolls to kick the ear back toward the upper ends of the rolls, and means to drive the shaft.

5. A corn husker comprising a housing carrying two sets of corn treating rolls arranged a pair in each set with all rolls inclined from the horizontal and lying parallel in the same inclined plane, a shaft journaled in the housing and disposed over the rolls, a single star wheel retarder carried by the shaft for rotation therewith in a vertical plane disposed between the sets of rolls, the points of the wheel being movable above the space formed between the two sets of rolls and each point having an edge to engage an ear lying longitudinally in said space at substantially a right angle to the axis of the ear to stop its downward movement, the direction of rotation of the wheel being such that the lower points move away from the lower ends of the rolls to kick the ear back toward the upper ends of the rolls, said points being formed in a manner delineating spaces therebetween of sufficient size to prevent more than one point from engaging an ear at the same time, and means to drive the shaft and rotate the wheel.

6. A corn husker comprising a housing carrying two sets of corn treating rolls arranged a pair in each set with all rolls inclined from the horizontal and lying parallel in the same inclined plane, a horizontal shaft journaled in the hous-

ing and disposed over the rolls, a single flat sheet metal star wheel retarder carried by the shaft for rotation therewith in a vertical plane disposed between the two sets of rolls, the points of the wheel being movable above the space formed between the two sets of rolls and having non-radial straight edges to engage an ear lying longitudinally in said space to stop its downward movement, the direction of rotation of the wheel being such that the lower points move away from the lower ends of the rolls to kick the ear back toward the upper ends of the rolls, and means to drive the shaft and rotate the wheel.

7. A corn husker comprising a housing carrying two sets of corn treating rolls arranged a pair in each set with all rolls inclined from the horizontal and lying parallel in the same inclined plane, a horizontal shaft journaled in the housing and disposed over the rolls, a single star wheel retarder carried by the shaft for rotation therewith in a vertical plane disposed between the sets of rolls, the points of the wheel being equidistantly spaced and movable above the space formed between the two sets of rolls to engage an ear lying longitudinally therein to stop its downward movement, the spaces between the points being of sufficient size to prevent more than one point from engaging an ear at the same time, each point having a non-radial straight edge to engage an end of the ear, the direction of rotation of the wheel being such that the lower points move away from the lower ends of the rolls to kick it back toward the upper ends of the rolls, and means to drive the shaft and rotate the wheel.

8. A corn husker comprising a housing carrying two sets of corn treating rolls arranged a pair in each set with all rolls inclined from the horizontal and lying parallel in the same inclined plane, a shaft journaled in the housing and disposed over the lower end of the rolls, a single flat sheet metal star wheel retarder carried by the shaft for rotation therewith in a vertical plane disposed between the sets of rolls, the points of the wheel being substantially equidistantly spaced and movable above the space formed between the two sets of rolls to engage an ear lying therein longitudinally to stop its downward movement, the direction of rotation of the wheel being such that the lower points move away fro mthe lower ends of the rolls to kick it back toward the upper ends of the rolls, the spaces between the points being of sufficient size to prevent more than one point from engaging an ear at the same time, and means to drive the shaft and wheel.

MERRILL W. ROSCOE.