(No Model.)

A. ROSENTHAL.

SEPARATING AND HUSKING ROLLERS.

No. 588,184. Patented Aug. 17, 1897.

Fig. 1.

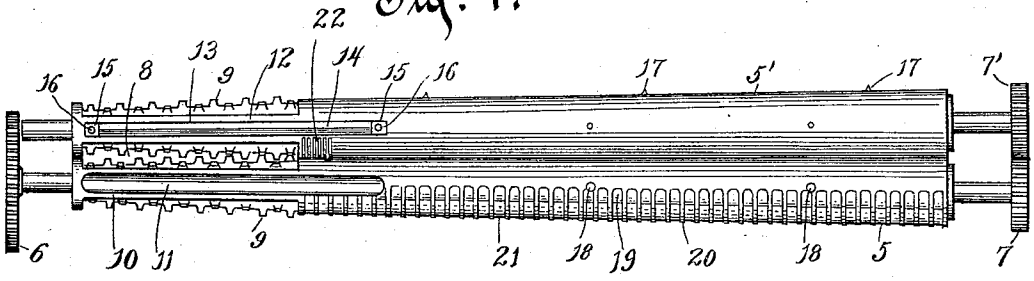


Fig. 2.

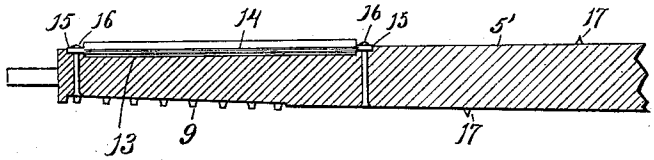


Fig. 3.

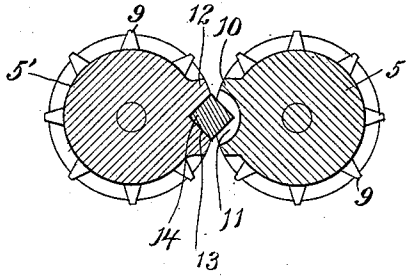
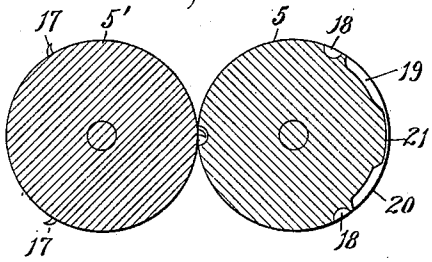


Fig. 4.



Witnesses.

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SEPARATING AND HUSKING ROLLERS.

SPECIFICATION forming part of Letters Patent No. 588,184, dated August 17, 1897.

Application filed January 21, 1897. Serial No. 620,109. (No model.)

To all whom it may concern:

Be it known that I, AUGUST ROSENTHAL, of Milwaukee, in the county of Milwaukee and State of Wisconsin, have invented a new and useful Improvement in Separating and Husking Rollers, of which the following is a description, reference being had to the accompanying drawings, which are a part of this specification.

My invention has relation to improvements in separating and husking rollers for corn-husking and fodder-shredding machines.

The present invention relates to the same class of rollers as those covered in Letters Patent of the United States issued to me on March 5, 1895, No. 535,024, for improvements in combined feed-cutters and corn-huskers, and also Letters Patent of the United States issued to me under date of September 17, 1895, No. 546,390, for improvements in combined feed-cutters and corn-huskers, as well as to the rollers covered in my application for Letters Patent for improvements in corn-huskers and fodder-shredders filed May 11, 1896, Serial No. 591,189, and allowed December 4, 1896. The form of rollers covered in the present application are designed to be used in connection with machines of the character covered in said two Letters Patent, as well as in the application for patent referred to, or in fact in connection with any other style of machine of the same general character to which the rollers may be found applicable.

The object of the present invention is to improve the construction of the feed ends of the rollers, whereby said rollers are better adapted for effectually separating the ears from the stalks.

With the above primary object in view the invention consists of the devices and parts or their equivalents, as hereinafter more fully set forth.

In the accompanying drawings, Figure 1 is a plan view of the rollers. Fig. 2 is a longitudinal section of a fragment of one of the rollers. Fig. 3 is a cross-section through the feeding ends of the rollers, and Fig. 4 is a cross-section through the husking portions of the rollers.

In the class of machines in connection with which my invention is employed the ears of corn with their attached stalks are fed to the receiving ends of rollers, which ends are so constructed that as the rollers revolve toward each other the cornstalks are grasped and severed from the ears, said stalks passing between the rollers and being acted upon by cutting mechanism below the rollers. The ears of corn slide down the top surfaces of the rollers, and when they reach the husking portions of said rollers said husking portions shred the ears of corn of their husks.

Referring to the drawings, the numerals 5 5′ indicate two rollers constructed in accordance with my invention. These rollers are provided at their ends with trunnions, which are journaled in suitable bearings in the framework of the machine. The trunnion at one end of the roller 5 has mounted thereon a gear-wheel 6, with which certain gearing carried in the framework of the machine is adapted to mesh. This wheel 6 therefore serves as a driving-gear for the two rollers, inasmuch as the trunnions at the opposite ends of the rollers are provided with intermeshing gears 7 7′.

It will be seen that the rollers gradually taper from their receiving ends—that is, the ends to which the corn is fed—toward their opposite ends, their smallest diameters being at the receiving ends. At the receiving ends there is a space 8 between the rollers, said space extending from the extremities of the rollers inwardly for a desired distance and gradually diminishing in width toward the inner terminus. The smaller receiving ends are designed for separating the ears of corn from their stalks, while the remaining portions of the rollers serve to husk the ears and to split and sever points of nubbins.

The smaller receiving ends of the rollers are provided with longitudinal rows of radially-projecting teeth 9, which rows of teeth alternate with each other longitudinally, the rows of teeth on one roller entering the intermediate spaces axially or longitudinally of the other roller as the rollers revolve. The teeth 9, as the corn is fed to the rollers, take hold of the stalks and carry them between the rollers. These teeth, it will be noticed, do not extend entirely around the circumference of the rollers, the teeth of the roller 5

being interrupted by an outwardly-extending lug or projection 10, which has formed therein a concavity or recess 11. The roller 5′ is also interrupted by a similar outwardly-extending lug or projection 12, which has formed therein a substantially V-shaped recess 13. The lugs 10 and 12 of the respective rollers and the recesses therein extend throughout the entire length of the separating portions of the rollers and preferably for a short distance onto the husking portions of the rollers, as shown in the present illustration of the invention.

Fitting in the V-shaped recess 13 is a diamond-shaped steel nipper 14, which is provided with end lugs 15 15, which are countersunk into the roller. These lugs receive rivets 16 16, said rivets advisably extending entirely through the roller. By the employment of a bar of this character, attached to the roller in the manner described, it will be seen that it can be readily removed therefrom when it becomes worn or otherwise damaged and a new nipper substituted therefor. Furthermore, when one angle constituting a cutting edge becomes worn the rivets can be removed and the nipper turned so as to present another edge to operative position, the rivets being then reinserted.

The husking portion of the roller 5′ is shown as provided with a number of husking-pins 17 and the roller 5 with registering recesses 18 to receive said pins as the rollers revolve. The portion of the roller 5 in advance of the receiving end is also shown as provided with a longitudinal line of transversely-elongated slots 19, forming projections or ribs 20 between each set of slots. The centers of the transversely-elongated slots are raised considerably above the remaining portions of the slots to form projections 21, which projections being of rough casting are best adapted to tear the points off the ears of corn after the ribs 20 have split said points. The roller 5′ is also shown as provided with a series of fine creases 22, which extend for a limited distance from the receiving end of the roller. These fine creases are for the purpose of taking hold of any short pieces of stalk which may remain on the ears and be between the rollers after said ears leave the stalk-severing portions of the rollers.

All the features shown on the rollers 5 5′, with the exception of the concavity or recess 11 of the roller 5 and the registering steel nipper 14 of the roller 5′, are covered in my former patents and the pending application for patent referred to and are only shown herein to illustrate the preferable form of rollers in connection with which my present improvements are more especially adapted to be used. It will therefore be understood that it is not intended to limit the application of the features of the nipper and its receiving-groove to the specific form of rollers herein shown and described, inasmuch as said novel features are intended to be used in connection with any form of rollers used for analogous purposes, or substantially analogous purposes, in machines of this character.

In operation the stalks and attached ears are fed to the receiving ends of the rollers. The teeth 9 then grasp the cornstalks and pull them between the rollers in the widest portion of the space 8, where they are gradually worked down toward the more narrow portion of said space. By the time the stalks have reached this point the rollers have revolved sufficiently to bring the steel nipper into register with the concavity 11, and the stalks are thereby necessarily pulled in between the point or edge of the nipper and the wall of the groove and are necessarily compelled to make a very short turn, the sharpened edge or point of the nipper at the same time making a shear cut on the stalks and severing the same from the ears, said severed stalks then falling to cutting mechanism below. The ears of corn of course slide down the rollers to the husking portions thereof, where they are acted upon. In my Patent No. 535,024, dated March 5, 1895, and also in my pending application for patent hereinbefore referred to I have shown the receiving ends of the rollers as provided with projecting lugs adapted when they meet to crush the stalks and thus sever them from the ears. The present improvement, however, possesses decided advantages over the construction referred to, inasmuch as the nipper of one roller coacting with the recess of the other roller absolutely insures the severance of the stalk.

One of the principal advantages of my arrangement is the readiness with which the nipper can be removed, so that it may be replaced by another when said nipper becomes worn or otherwise impaired.

What I claim as my invention is—

The combination, with rollers arranged parallel to each other and at a slight distance apart, said rollers provided at their receiving ends for a desired distance with means for separating ears of corn from their stalks, and for the balance of their lengths with means for husking the ears of corn, and one of said rollers provided longitudinally of its separating portion with a groove or recess, of a nipper secured to and extending longitudinally of the separating portion of the other roller, said nipper adapted to enter the groove of the companion roller, as the rollers rotate toward each other, whereby cornstalks are adapted to be pulled into the groove and severed from the ears by the action of the nipper, said stalks passing between the rollers, and the ears being deposited on the surfaces of the rollers to be acted upon by the husking portions of said rollers.

In testimony whereof I affix my signature in presence of two witnesses.

AUGUST ROSENTHAL.

Witnesses:
ARTHUR L. MORSELL,
ANNA V. FAUST.