

(No Model.)

2 Sheets—Sheet 1.

A. ROSENTHAL.
COMBINED FEED CUTTER AND CORN HUSKER.

No. 535,024.

Patented Mar. 5, 1895.

Fig. 1.

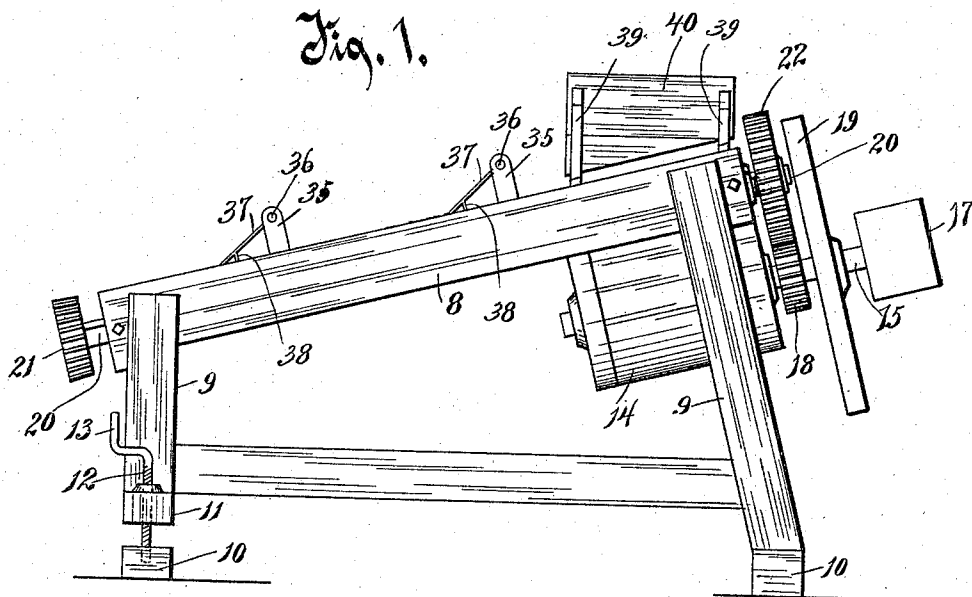
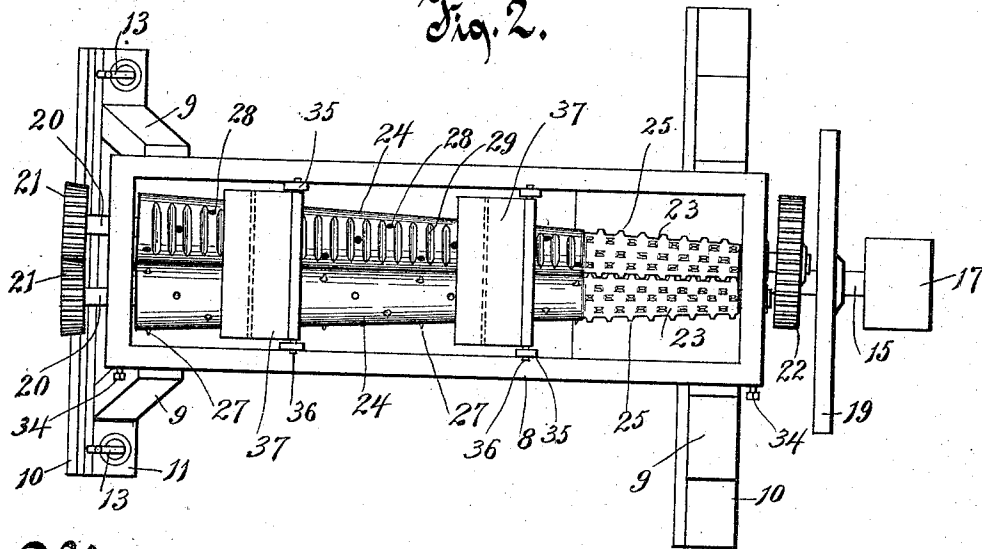


Fig. 2.



Witnesses.

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2 Sheets—Sheet 2.

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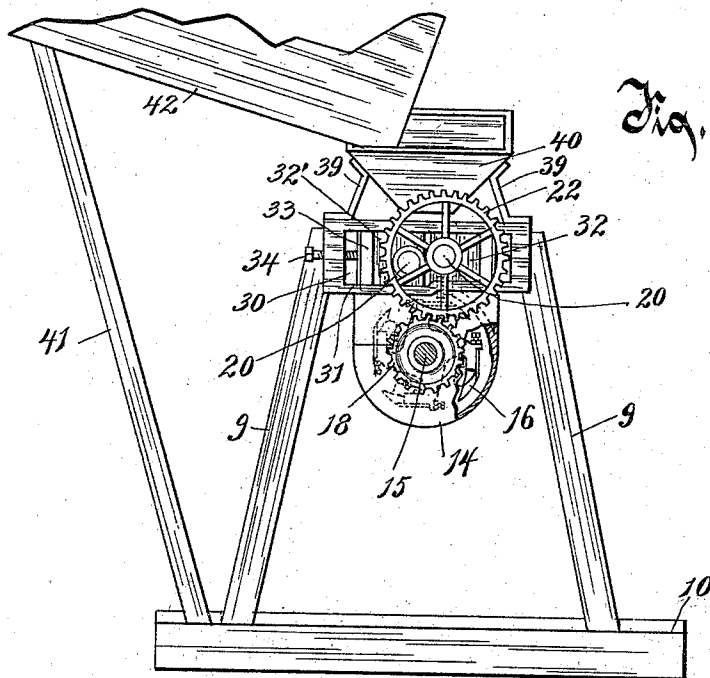


Fig. 3.

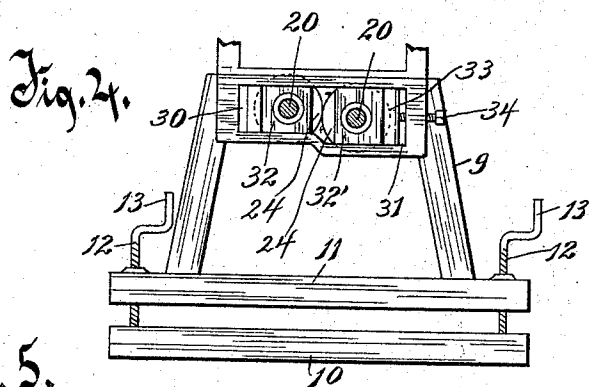


Fig. 4.

Fig. 5.

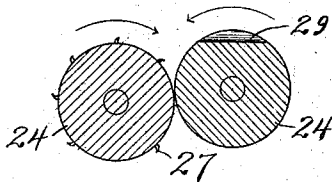


Fig. 7.

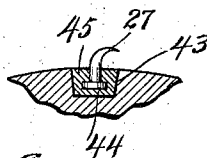
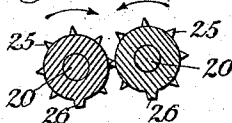


Fig. 6.



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UNITED STATES PATENT OFFICE.

AUGUST ROSENTHAL, OF MILWAUKEE, WISCONSIN.

COMBINED FEED-CUTTER AND CORN-HUSKER.

SPECIFICATION forming part of Letters Patent No. 535,024, dated March 5, 1895.

Application filed April 13, 1894. Serial No. 507,380. (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 a Combined Feed-Cutter and Corn-Husker, 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 combined feed cutters and corn huskers, having particular reference to improvements upon the device covered in my former Letters Patent, No. 440,818, dated November 18, 1890, said improvements having for their object the simplification of the construction covered by the Letters Patent aforesaid.

With the above, and other, objects in view, the invention consists of the devices and parts, or their equivalents, as hereinafter more fully described and claimed.

In the accompanying drawings, Figure 1, is a side elevation of the complete machine. Fig. 2, is a plan view thereof, with the hopper removed. Fig. 3, is an elevation of the front end of the machine. Fig. 4, is an elevation of the opposite end. Fig. 5, is a transverse sectional view through the husking rollers. Fig. 6, is a transverse sectional view through the feeding rollers, and Fig. 7, is a fragmentary sectional view of one of the husking rollers, showing the manner of securing a tooth therein.

Like numerals of reference denote like parts throughout the several views.

Referring to the drawings, the numeral 8 indicates the upper portion of the frame of the machine, supported upon suitable legs 9, 9.

The numerals 10, 10 indicate transverse base pieces, the one at the forward end of the machine having the forward legs 9 resting directly thereon. The rear legs 9 are connected by a transverse bar 11, the ends of which bar extend laterally beyond the legs, and are provided with threaded openings, through which adjusting screws 12, 12 pass, the lower ends of said screws entering threaded sockets in the transverse base piece 10 below. The upper ends of the screws 12 are formed with crank handles 13, 13, whereby said screws may be rotated, and the rear end of the machine adjusted. It will be noticed that the

rear legs 9, 9, are considerably shorter than the front legs 9, so that the upper portion 8 of the frame inclines rearward. The degree of this inclination is conveniently regulated by means of the screws 12, 12 just described.

Suspended beneath the front end of the upper portion of the frame is a casing 14, and extending in to this casing is a shaft 15, said shaft carrying thereon, within the casing, a series of cutting knives 16. The outer end of the shaft 15 is provided with a band wheel 17, and also carries a gear wheel 18, and between this gear wheel and the band wheel, a fly wheel 19.

Journalled in the ends of the upper rectangular portion 8 of the frame are shafts 20, 20. The rear projecting ends of these shafts carry intermeshing gear wheels 21, 21 while one of the shafts 20 has mounted rigidly upon its front end a gear wheel 22, which meshes with the gear wheel 18 of shaft 15. By this arrangement of gearing, it will be apparent that as the shaft 15 is rotated, the cutting knives revolve therewith, while rotation at the same time is imparted to one of the longitudinal shafts 20, and this shaft in turn imparts rotation in an opposite direction to the other shaft 20, by reason of the intermeshing gears 21, 21.

The longitudinal shafts 20, 20 have formed or mounted rigidly thereon long tapering rollers, the tapers gradually diminishing toward the front end of the machine. The smaller front ends 23, 23 are designed for separating the ears of corn from their stalks, while the longer portions 24, 24 of the rollers are for the purpose of husking the ears of corn.

The portion 23 of each roller is provided with longitudinal rows of radially projecting teeth 25, 25, which rows of teeth on the two rows alternate with each other, longitudinal the rows of teeth on one feed roll entering the intermediate spaces axially or longitudinally on the other feed roll as the rollers revolve. On each side of each portion 23 of a roller there is, in place of a row of teeth, a longitudinal rib 26, projecting radially a distance equal to about half the length of the teeth, and having an outer surface of considerable width curved laterally in an arc of the periphery of the roller. These broad top ribs of the two portions 23 of the rollers are ar-

ranged and adapted to come together, bearing against each other as the rollers revolve.

The husking part 24 of one of the rollers is provided with a number of teeth 27, which register with and enter corresponding apertures 28 in the husking part of the other roller, as the rollers revolve. This latter roller is also provided with a series of transverse elongated recesses 29.

The end pieces of the upper portion 8 of the frame are provided with transverse rectangular openings 30, 30, each of said openings being widened at the points 31, 31. The ends of the longitudinal shafts 20, 20 are journaled in block 32, 32', the former being arranged in the contracted portions of the rectangular openings 30, 30, whereby one of the longitudinal shafts 20 is arranged on a plane slightly above the plane of the other shaft. Inasmuch as the corn stalks are fed to the portions 23 of the rollers at an incline, this arrangement permits the stalks, when so fed, to readily pass between the rollers. These journal-blocks and their supported rollers are held yieldingly to their work by elastic rubber blocks 33, 33, to which they are held adjustably by the set screws 34, 34 turning through the frame 8, and against these rubber blocks.

Extending upward from opposite the sides of the frame 8 are arms 35, 35, the upper ends of said arms forming journal bearings for transverse shafts 36, 36, from which shafts plates 37, 37, extend downward to the husking portions 24, of the rolls, said plates in turn having projecting down vertically from their under sides, transverse lugs 38, 38, the distance between the ends of these lugs and the husking portions of the rolls being sufficient only to admit of the passage of a single row of the ears of corn.

Above the front end of the frame 8 is supported, on standards 39, 39, a hopper 40. Leading to this hopper, and supported by an inclined standard 41, is a feeding chute 42, shown in Fig. 3. The corn stalks, with the ears attached, are placed in the chute 42, and feed therefrom into the hopper 40, the stalks passing between the portions 23, 23 of the rollers, and being cut up by the revolving knives 16 beneath, while the ears of corn are broken from the stalks by the action of the broad-topped ribs 26, 26, and the ears with the husks attached thereto and lengthwise on to the rollers, and by reason of the inclination of the frame 8, slide down to the husking portions 24, 24 of the rollers, being carried by gravity down along the husking rollers, and discharged therefrom at the lower ends thereof, having in the meantime been stripped of their husks by the teeth 27. Inasmuch as the ears of corn do not always arrange themselves lengthwise on the husking rollers, often times working around to such a position that their points are caught between the rollers, it is necessary to a thoroughly successful machine that some provision should be made for breaking off the points,

and thereby permitting such ears to arrange themselves lengthwise on the rollers. I have, therefore, provided one of the rollers on the husking part 24 thereof, with the elongated recesses or grooves 29, arranged in a single longitudinal line. By providing these grooves if the points of the ears are caught between the rolls, said points are thereby split, so that when the ungrooved parts of the rollers come together, the points are readily broken off, and instead of the ears of corn wedging in between the rolls, they are permitted to again assume a lengthwise position thereon. It also frequently happens that when a number of ears of corn are on the husking portions of the rollers simultaneously, some of the ears will arrange themselves on top of the others, making it impossible for the teeth 27 to act thereon for the purpose of stripping them of their husks. By providing the plates 37, however, and the transverse lugs 38 projecting down from the under side thereof, the ears are necessarily compelled to arrange themselves directly on the rolls, being forced thereon by said lugs 38.

It is desirable that the husking portions of the rollers should be as large as possible, so as to present the maximum amount of surface to act upon the ears of corn, and it is also desirable that the portions 23 of the rolls should be small in circumference, so as to effectually prevent the ears of corn from passing between said rolls. It is for this reason that I employ rollers tapering off gradually toward the feeding end of the machine.

In Fig. 7 of the drawings, I have illustrated an improved method of fastening the teeth 27 to the husking portion 24 of one of the rollers. This consists in forming a recess 43 in the roller considerably greater in size than the size of the tooth to be inserted. After placing the tooth about centrally in this recess, with its head 44 held slightly above the bottom of the recess, lead 45 in its molten state is poured into the recess until the same is filled. After the lead hardens, it is obvious that the tooth will be held firmly in place.

It will be noticed that the teeth 27 have their acting ends curved into hook form, so as to insure the engagement of the teeth with the husks, and the stripping off of the husks.

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

1. The combination, with a frame, of coacting rotatable rollers arranged on an incline from the front to the rear of the machine, and tapered from end to end, the smallest portion of the tapers at the front end being provided for a distance longitudinally with a series of longitudinal rows of intermeshing teeth, and both rollers for the balance of their respective lengths having their outer surfaces smooth and true, the smooth surface of one being provided circumferentially and longitudinally with indentations or recesses, and the smooth surface of the other provided with similarly-

disposed teeth adapted to register with and enter said indentations or recesses, substantially as set forth.

2. The combination, with a frame, of co-acting rotatable rollers arranged on an incline from the front to the rear of the machine, and tapered from end to end, the smallest portion of the tapers at the front end being provided for a distance longitudinally with a series of longitudinal rows of intermeshing teeth, and each with a broad topped longitudinal rib, the ribs of the respective rollers arranged to register and bear against each other, and both rollers for the balance of their respective lengths having their outer surfaces smooth and true, the smooth surface of one being provided circumferentially and longitudinally with indentations or recesses, and the smooth surface of the other provided with similarly disposed teeth adapted to register with and enter said indentations or recesses, substantially as set forth.

3. The combination, with a frame, of co-acting rotatable rollers arranged on an incline from the front to the rear of the machine, and tapered from end to end, the smallest portion of the tapers at the front being provided for a distance longitudinally with a series of longitudinal rows of intermeshing teeth, and both rollers for the balance of their respective

lengths having their outer surfaces smooth and true, the smooth surface of one being provided circumferentially and longitudinally with indentations or recesses, and also with a single longitudinal line of transversely-elongated recesses, and the smooth surface of the other roller provided with teeth similarly disposed to and adapted to register with and enter the first-named indentations or recesses of the other roller, substantially as set forth.

4. The combination, with a frame, of co-acting rotatable rollers, arranged side by side, and adapted to have the ears of corn slide longitudinally thereon, the surfaces of said rollers being smooth and true, the smooth surface of one being provided circumferentially and longitudinally with indentations or recesses, and also with a single line of transversely elongated recesses, and the smooth surface of the other roller provided with teeth similarly disposed to and adapted to register with and enter the first-named indentations or recesses of the other roller, substantially as set forth.

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

AUGUST ROSENTHAL.

Witnesses:

ARTHUR L. MORSELL,
ANNA V. FAUST.