

975,631.

2 SHEETS—SHEET 1.



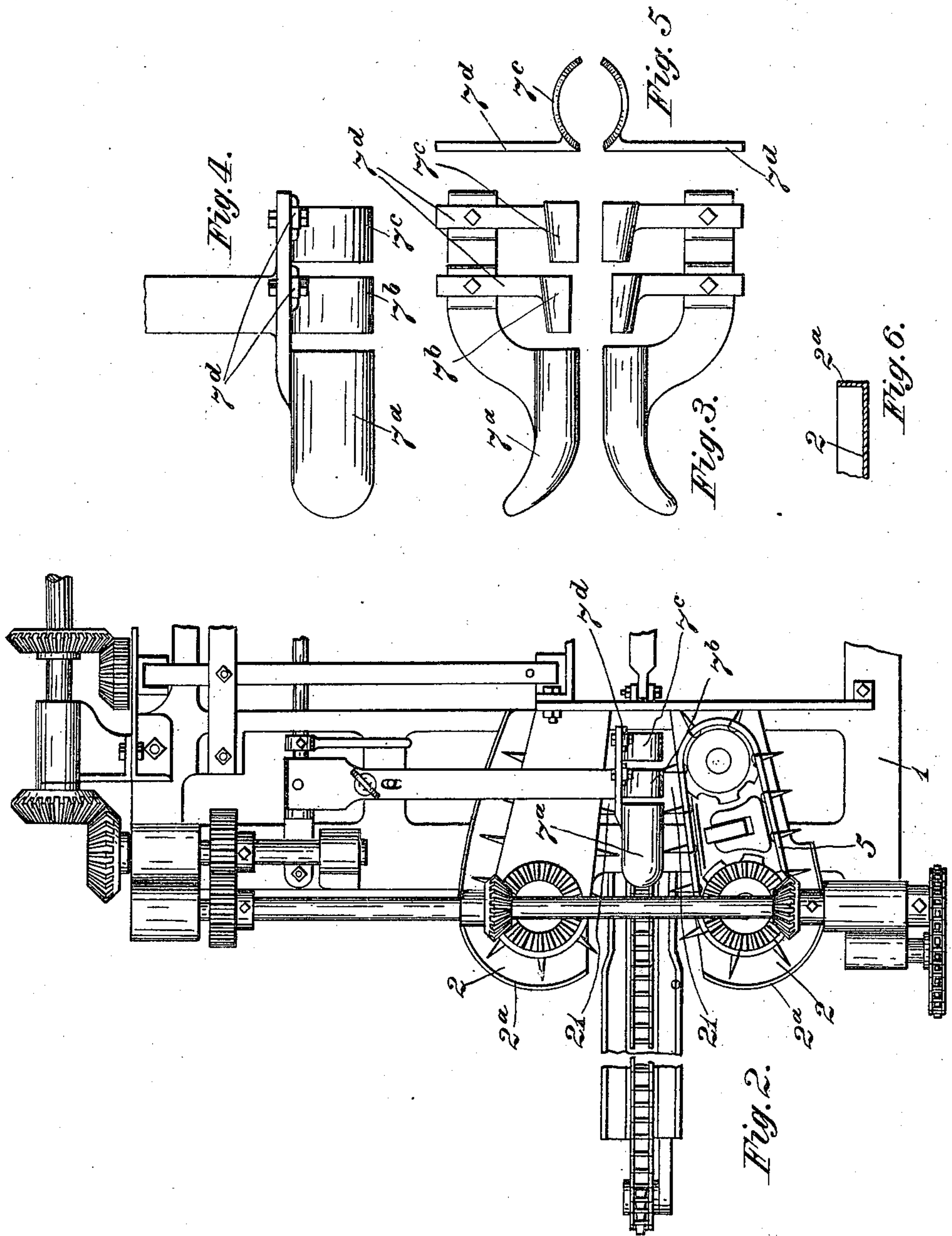
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MACHINE FOR CUTTING GREEN CORN FROM THE COB.  
APPLICATION FILED MAY 4, 1908.

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2 SHEETS—SHEET 2.



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# UNITED STATES PATENT OFFICE

SAMUEL E. MORRAL AND WILLIAM W. MORRAL, OF MORRAL, OHIO.

MACHINE FOR CUTTING GREEN CORN FROM THE COB.

975,631.

Specification of Letters Patent. Patented Nov. 15, 1910.

Application filed May 4, 1908. Serial No. 430,733.

*To all whom it may concern:*

Be it known that we, SAMUEL E. MORRAL and WILLIAM W. MORRAL, citizens of the United States, residing at Morral, in the county of Marion and State of Ohio, have invented a certain new and useful Improvement in Machines for Cutting Green Corn from the Cob, of which the following is a specification.

This invention relates to the class of machines shown in Letters Patents of the United States No. 679,156, dated July 23, 1901, and No. 787,585, dated April 18, 1905.

The chief object of the present invention is to make improvements in such machines whereby the kernels of corn are more finely divided so as to render them more economically cooked and palatable and digestible.

Another object of the invention is an improved construction of knife for cutting the corn.

The invention consists in the details of construction hereinafter described and then pointed out in the claims appended hereto.

In the accompanying drawings—Figure 1 is a view in elevation looking at the right hand side of the machine with parts broken out; Fig. 2 is a top plan view of the front or feeding end only of the machine with parts removed; Fig. 3 illustrates in side elevation the improved cutting devices; Fig. 4 is a plan view of the same; Fig. 5 is an end view of a pair of the horizontal cutters, and Fig. 6 is a fragmentary section showing the form of the flange on the feed chain guard.

In the present machine the general construction is substantially the same as in the former patents herein referred to, that is to say the frame 1, the toothed feed chains 5, the horizontal guides, the vertical guides, the horizontal scrapers 11, the vertical scrapers 12, and the feed wheels 13 on the shafts 14 are all substantially as shown in said former patents and operate or are operated in substantially the same way and need not, therefore, be here again particularly described. In the present case, however, we mount in tandem on each shank of the horizontal guides 7<sup>a</sup> a pair of horizontal cutters 7<sup>b</sup> and 7<sup>c</sup>, arranged so that there shall be one pair vertically considered in advance of the other. The cutters cut in lines parallel to the axis of the ear. The forward pair 7<sup>b</sup> of such cutters are arranged and secured to cut the kernels in lines the more remote from the axis of the ear and not as close as possi-

ble to the cob but only about, say half way of their depth and the rear or succeeding pair 7<sup>c</sup> are arranged and secured to cut the remainder of the thus cut kernels or as close to the cob as desired. In other words the cutting edges of the horizontal pairs of cutters lie in arcs substantially parallel to each other. The kernels are thus divided transversely of their depth, and roughly speaking the product is twice as fine as where a single pair of cutters is employed to cut in the first instance as close as possible to the cob. It will be understood, however, that, as shown, the pairs of cutters 7<sup>b</sup> and 7<sup>c</sup> remove the corn from the upper and lower sides only of the ear. To perform a similar operation on the sides of the ears we employ two pairs of cutters arranged one in advance of the other, as seen at 8<sup>b</sup> and 8<sup>c</sup>, said cutters being arranged in conjunction with guides 8 and 8<sup>a</sup> respectively for properly directing the ear to the cutters. The forward pair of vertical cutters 8<sup>b</sup> are arranged and secured to cut about, say half way through the kernels, and the rear or succeeding pair 8<sup>c</sup> are arranged and secured to cut the remainder of such kernels or as close to the cob as desired. After the cob is carried beyond the pair of cutters 8<sup>c</sup> it is fed through the scrapers to remove small pieces that may yet remain, substantially as set forth in said former patents.

In machines of this kind the feed chains 5 at the front of the machine are run with considerable speed, and, as a consequence many kernels of corn and fluids or juices thereto belonging were scattered about the front of the machine. We, therefore, provide the plates 2 on which said chains run, said plates extending beyond the path of the points of the spurs of the feed chains at the front of the machine and provided with flanges 2<sup>a</sup> that inclose the feed chain at the front of the machine and prevent the kernels and juices taken by the feed chain from being scattered on the floor in front of the machine. Instead said kernels and juices are allowed to drop through spaces as at 21 into a receptacle suitably supported under the machine below said spaces and the cutters.

The improved form of cutter, as best shown in Fig. 5, consists in placing the shank so as to rise or extend from or near the side edge of the cutter, as seen at 7<sup>d</sup>. In the instance shown the shank rises from



the side of the knife in a plane at right angles to a chord subtending the arc of the knife. With this construction of knife the silks of the green corn are not likely to become entangled with and accumulate on the shank. Time and trouble are therefore saved in keeping the machine free of obstructions to the passage of the ears there-through.

10 What we claim and desire to secure by Letters Patent is:

1. In a machine for cutting green corn from the cob, the combination with means for automatically feeding the ear into the machine in the direction of the longitudinal axis of the ear, a pair of opposingly arranged guides to act on different sides of the ear, a pair of cutters having their cutting edges parallel to each other and said cutters being in tandem connection with each of said guides, said cutters also arranged to cut in a direction parallel to the axis of the ear and at different sides of the ear, the forward of the cutters in each pair being located to cut in lines more remote from the axis of the ear than the lines of the cut of the rear cutter, whereby portions only of the kernels of the ear are removed by the forward cutter of each pair and the remainder of the severed kernels are removed by the rear cutter of each pair, substantially as described.

2. In a machine for cutting green corn from the cob, the combination with means for automatically feeding the ear into the machine in the direction of the longitudinal axis of the ear, a pair of opposingly arranged guides to act on two opposite sides of the ear, a pair of cutters having their cutting edges parallel to each other and said cutters being in tandem connection with each of said guides, said cutters also ar-

ranged to cut in a direction parallel to the axis of the ear and at opposite sides of the ear, the forward of the cutters in each pair being located to cut in lines more remote from the axis of the ear than the lines of the cut of the rear cutter, and two pairs of similarly arranged cutters in the machine in rear of the first mentioned cutters to similarly cut kernels in lines left uncut by said first mentioned cutters whereby portions only of the kernels of the ear are removed by the forward cutter of each pair and the remainder of the severed kernels are removed by the rear cutter of each pair of cutters, substantially as described.

3. In a machine for cutting green corn from the cob, a cutter consisting of a curved blade having one of its curved edges formed as the cutting edge, said blade provided with an attaching shank projecting from one of the side or non-cutting edges of the blade and in a direction approximately at right angles to a chord subtending the aforesaid curved cutting edge.

4. In a machine for cutting green corn from the cob, the combination with a guide having a shank, of a pair of cutters secured to said shank one arranged in advance of and beyond the other, each of said cutters consisting of a transversely curved blade having one of its curved edges constituting the cutting edge, and an attaching shank projecting from one of the side or non-cutting edges of the blade and in a direction approximately at right angles to a chord subtending the aforesaid curved cutting edge.

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