

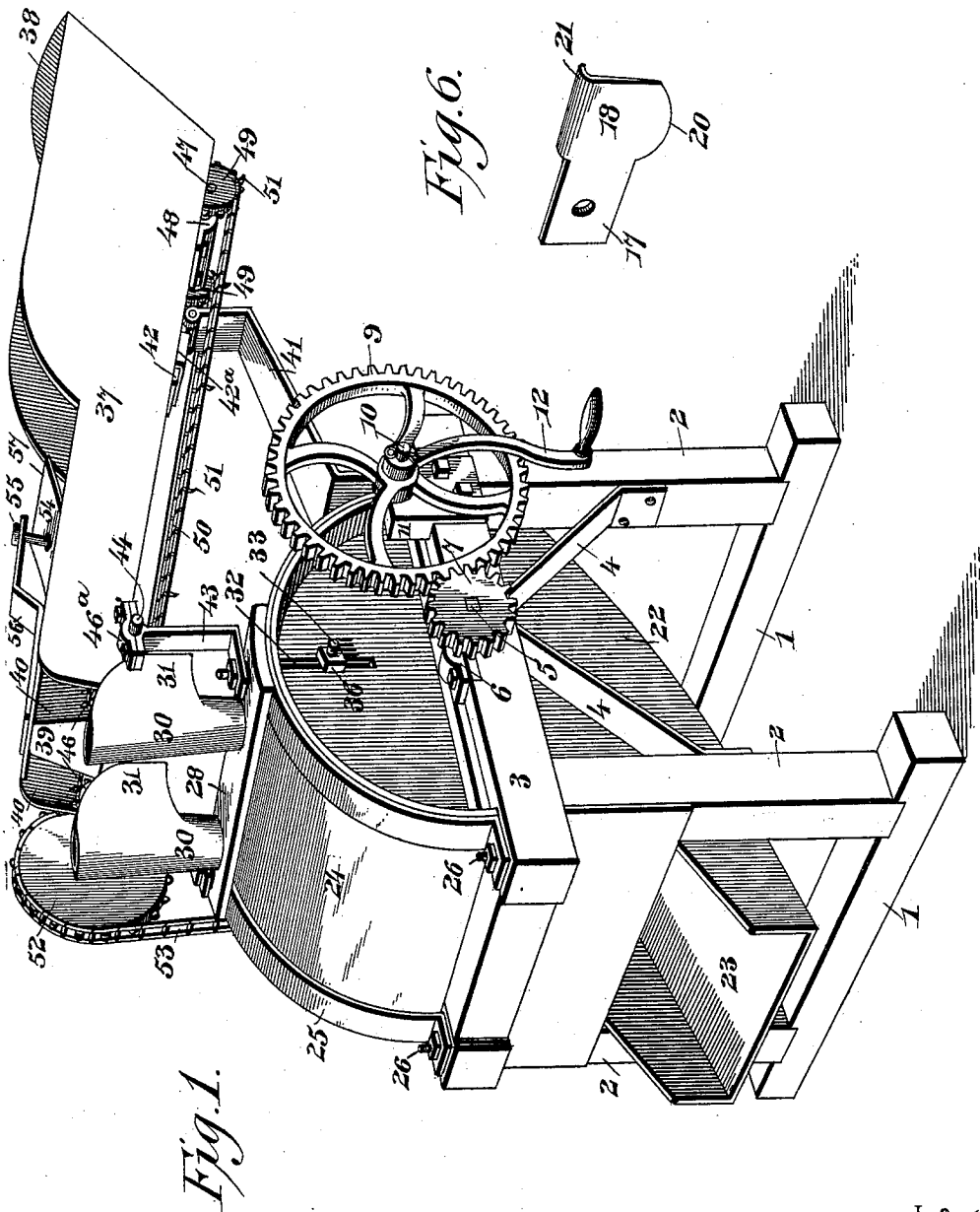
(No Model.)

3 Sheets—Sheet 1.

E. L. DOLSEN.
MACHINE FOR CUTTING EAR CORN.

No. 596,145.

Patented Dec. 28, 1897.



Inventor

Emmet L. Dolsen

Witnesses

Joseph McLaughlin
Edwin Cune.

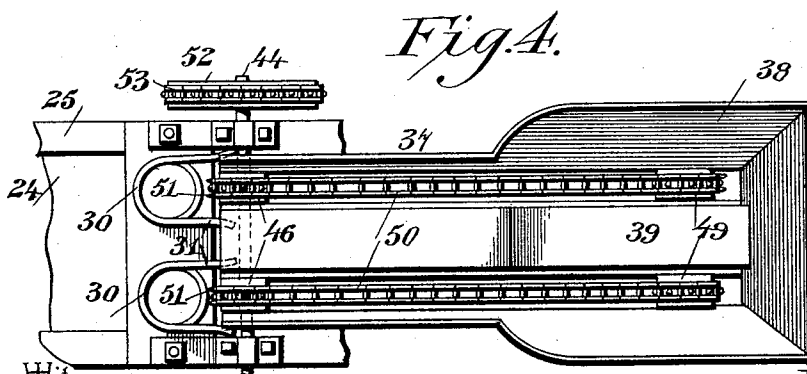
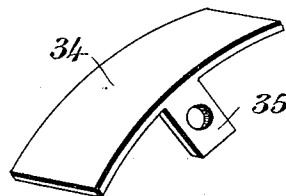
By *his* Attorneys,

C. A. Snow & Co.

3 Sheets—Sheet 2.

No. 596,145.

Patented Dec. 28, 1897.



Inventor

Witnesses

Jas. K. McClathran
Edwin Bruce.

By *his* Attorneys,

Emmet L. Dolsen

Calnow & Co.

(No Model.)

3 Sheets—Sheet 3.

E. L. DOLSEN.
MACHINE FOR CUTTING EAR CORN.

No. 596,145.

Patented Dec. 28, 1897.

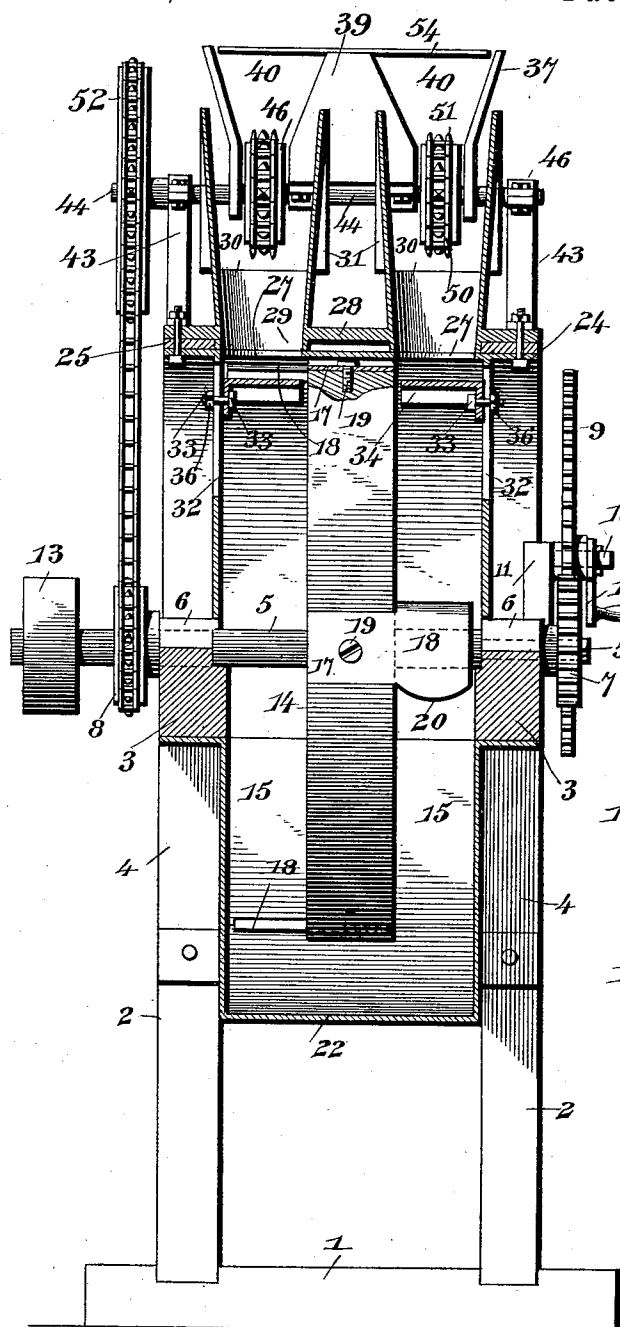


Fig. 3.

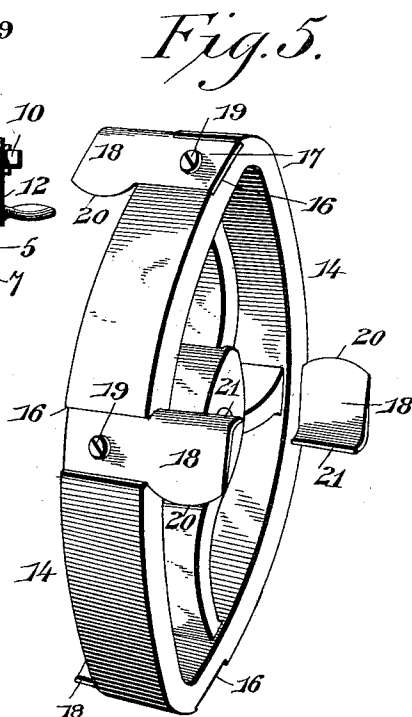


Fig. 5.

Inventor

Witnesses
Jas H. McEachran
Edwin Bruce.

By His Attorneys, *Emmet L. Dolsen*
Cash & Co.

UNITED STATES PATENT OFFICE.

EMMET L. DOLSEN, OF BARTLETT, ILLINOIS.

MACHINE FOR CUTTING EAR-CORN.

SPECIFICATION forming part of Letters Patent No. 596,145, dated December 28, 1897.

Application filed March 18, 1897. Serial No. 628,185. (No model.)

To all whom it may concern:

Be it known that I, EMMET L. DOLSEN, a citizen of the United States, residing at Bartlett, in the county of Cook and State of Illinois, have invented a new and useful Machine for Cutting Ear-Corn, of which the following is a specification.

This invention relates to machines for cutting ear-corn, its object being to provide a machine of this character in which two ears of corn may be cut simultaneously in pieces of any desired length and in which the ears to be cut are positively fed to a position from which they will fall endwise by gravity and intersect the path of travel of the knives, and thus automatically feed themselves to the knives for successive cutting.

With these and other objects in view the invention consists of the novel details of construction and combination of parts hereinafter fully described and more particularly pointed out in the claims.

In the drawings, Figure 1 is a perspective view of the machine. Fig. 2 is a vertical longitudinal section. Fig. 3 is a vertical transverse section. Fig. 4 is a top plan view. Fig. 5 is a perspective view of the knife-wheel detached. Fig. 6 is a perspective view of one of the knives. Fig. 7 is a perspective of one of the stops.

Similar reference-numerals indicate similar parts in the several figures.

The supporting-frame consists of the base-pieces 1, vertical standards 2, the rectangular frame 3, secured to the upper ends of the standards, and the braces 4, connecting the standards 2 to the frame 3.

5 indicates the main shaft, which extends transversely of the frame 3 and is journaled in suitable bearings 6, secured on top of the frame 3. The shaft 5 extends at each end beyond its bearings and carries at one end a pinion 7 and at the opposite end a sprocket-wheel 8. A gear 9 is mounted on a stub-shaft 10, extending from a bracket 11, which is bolted to the frame 3. The gear 9 meshes with the pinion 7 and is provided with a crank-handle 12, by means of which it can be turned and the shaft 5 thereby rotated. Instead of driving the shaft 5 by the crank-gear 9 a belt-pulley 13 may be secured on the shaft 5 at

either end, as desired, and be connected to a source of power to drive the shaft.

14 represents the knife-wheel, which is preferably formed with a heavy rim, in order that its momentum may aid in cutting the ears of corn. This wheel is keyed or otherwise secured on the shaft 5 at a point midway the space between the inner faces of the side pieces of the frame 3, and spaces 15 are thus formed between the inner faces of the side pieces of the frame and the sides of the wheel 14. A series of recesses 16, preferably four, are formed in the periphery of the wheel 14 equidistant from each other, and in these recesses the shanks 17 of knives 18 are seated and secured therein by screws 19 or other suitable fastening devices. The knives project laterally from the wheel alternately on opposite sides and their cutting edges are rounded, as indicated by 20. The object of rounding the edges is to prevent the knives from shelling corn to any great extent. The rear edges of the knives are bent downwardly to form a flange 21 for a purpose to be hereinafter referred to. The knives move in the spaces 15 in the lower half of their travel.

22 represents a chute, preferably of galvanized iron, which receives the pieces of ear-corn as they are cut and discharges them from its open end 23.

24 represents a semicylindrical casing to fit over the knife-wheel. This casing, which is preferably of galvanized iron, is supported on the upper surface of the frame 3, and iron straps or bands 25 are secured around its edges and bolted to the frame 3, as indicated at 26. The casing is thereby stiffened and firmly held in position to withstand the jar to which it will be subjected when the corn is being cut. The casing is provided with openings 27 at its highest point, which are directly over the shaft 5 and on opposite sides of the knife-wheel 14, and the cross-bar 28, which is bolted to the straps 25, is provided with registering openings 29. The lower ends of the feed-cups 30 are firmly secured in these openings 27 and 29. The vertical feed-cups 30 are tubular at their lower ends, and their upper portions are open at one side and provided with flaring wings 31 on each side of the openings. In each end of the cylindrical

casing a slot 32 is formed, and through each of these slots a bolt 33 passes. A stop consisting of a curved plate 34 and a perforated ear 35 is supported in the interior of the casing, at each end thereof, by means of the bolts 33, which pass through the perforations in the ears 35 of the stops, and by means of the nuts 36 the stops may be adjusted vertically within the casing. The curved plate of each stop extends across from the wall of the casing to be in close proximity to the side of the knife-wheel, and the knives will work over it. These stops are designed to support the inner ends of the ears of corn while they are being cut, and by adjusting the stops the length of the pieces cut off may be regulated. The downwardly-turned edges 21 of the knives are intended to engage the cut-off portion of the ear and move it off the curved plates in order that the downward feed of the ear may be uninterrupted.

37 represents the feed-trough, having its end enlarged to form a hopper 38. The bottom of the trough and hopper will preferably be of wood and the sides and end of galvanized iron. The trough is divided longitudinally by a central partition 39 to form two passages 40, the forward ends of which open out between the wings 31 of the cups 30. A bracket 41 is firmly secured to the rear end of the frame 3 and is provided at its outer end with a hinged section 42, which fits under a strap 42^a on the bottom of the trough, or it may be otherwise detachably connected to the bottom of the rear end portion of the trough. The trough has, therefore, a hinged connection to the frame 3, and its forward end may be tilted out of engagement with the feed-cups, when desired, without removing it from its supporting-bracket 41.

Bolted to the ends of the cross-bar 28 are brackets 43, the upper edges of which form half-bearings for a shaft 44, which also extends through the downward projections 45 at the front ends of the sides of the trough, and cap-pieces 46^a, forming the other halves of the bearing for the shaft 44, are bolted to the brackets 43. The shaft 44 carries two sprocket-wheels 46, working through openings in the bottom of each of the passages 40. Another shaft 47 is journaled in bearings 48 on the bottom of the hopper 38, and this shaft carries sprocket-wheels 49, which work through openings in the bottom of the hopper and are in alinement with the sprocket-wheels 46. Sprocket-chains 50 run over the wheels 46 and 49 and their upper sections work on the upper surface of the bottom of the trough. The chains 50 are provided with a series of pins 51, which are adapted to engage the ears of corn and carry them along the passages 40. The shaft 44 projects beyond its bearing at one end and carries a sprocket-wheel 52, and the sprocket-chain 53 runs over this wheel 52 and the sprocket-wheel on the main shaft 5.

54 is a cap or cover for the front end por-

tion of the trough. This cap or cover is secured at its front end to the front end of the partition 39, and the rear end of the cover has a yielding movement on a pin 55 against the force of a spring 56. The rear end of the cap is curved upwardly, as indicated at 57. The object of this cap or cover is to insure the movement of the ears of corn singly up each of the passages 40 in order that the machine will not become choked.

The operation of the machine is as follows: The ears of corn can be shoveled into the hopper 38, and the pins 51 on the chains 50 will engage the ears and carry them up the passages 40 one at a time, and when the ears reach the wings 31 they will be guided into the feed-cups 30, where they will assume a perpendicular position and fall down until they are arrested by the curved plates 34, and as the knife-wheel is revolved the knives will cut the ears of corn and sweep the cut parts off from the plate 34, when the ear will fall by gravity onto the plate, to be again cut. The length of the pieces cut off may be regulated by the adjustment of the curved plates 34, as will be readily understood.

From the foregoing description it will be seen that the ears of corn are fed singly to each side of the knife-wheel and that two ears may be in position to be cut at the same time. As the ears are vertical in the cups they drop automatically onto the stops in position for successive cuts, and the cut portions are removed from the stops by the projections on the knives. The feed will, therefore, be continuous and uniform, and all the operator will have to do to insure the feed will be to keep the hopper supplied with ears of corn. As the knives are arranged alternately on opposite sides of the wheel, only one knife will be actually cutting at a time, but the cutting will be constant, and consequently the machine will run regularly and uniformly with a uniform application of power.

It will be understood that changes in the form, proportion, and minor details of construction may be resorted to without departing from the spirit or sacrificing any of the advantages of this invention.

Having thus described my invention, what I claim is—

1. In a machine for cutting ear-corn, the combination of a vertical feed-cup, a stop below the feed-cup to support the ears of corn, a knife-wheel, knives projecting laterally therefrom to cut the corn above the support, and a flange on each knife to remove the cut-off portion from the support, substantially as described.

2. In a machine for cutting ear-corn, the combination of a pair of vertical feed-cups, arranged side by side with a space between them, a stop below each feed-cup to support the ears of corn, a vertical knife-wheel mounted to revolve below the feed-cups in the plane of the space between them, knives secured to the periphery of the wheel, equidistant from

each other, and projecting laterally therefrom alternately on opposite sides to cut the ears of corn above the respective supports alternately, a flange on each knife to remove the
5 cut-off portions from the supports, and means to feed the ears of corn singly to the feed-cups, substantially as described.

3. In a machine for cutting ear-corn, the combination of the frame, a knife-wheel supported to revolve within the frame, a semi-cylindrical sheet-metal casing fitted over the wheel and secured to the frame, straps secured around the edges of the casing and bolted to the frame, a cross-bar secured to the
15 straps above the casing at its highest point, said cross-bar and the casing having registering openings which lead to the side of the knife-wheel, a feed-cup secured at its lower end in said openings, knives carried by said
20 wheel and extending laterally therefrom below the feed-cup, means to feed the ears of corn to the cup, and a support within the casing for the lower end of the ear of corn, substantially as described.

25 4. In a machine for cutting ear-corn, a

trough having an enlarged rear end to form a hopper, a partition extending longitudinally of the trough, a cap secured at one end to the front end of the partition and having
30 its rear end curved upwardly and loosely fitted over a pin, a spring engaging the cap to permit it to have a yielding vertical movement at its rear end on the pin, and feed mechanism supported by the trough to carry the ears of corn below the cap, substantially as
35 described.

5. In a machine for cutting ears of corn, a knife-wheel having a series of knives supported on its periphery, and projecting laterally therefrom alternately on opposite sides,
40 each knife having a rounded cutting edge and a downwardly-turned rear edge, substantially as and for the purpose specified.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in
45 the presence of two witnesses.

EMMET L. DOLSEN.

Witnesses:

CHARLES C. SCHULTZ,
SETH LOBDELL.