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G. W. DAVIS

CORN FEEDING AND DEBUTTING MACHINE

Filed May 27, 1922

3 Sheets-Sheet 1

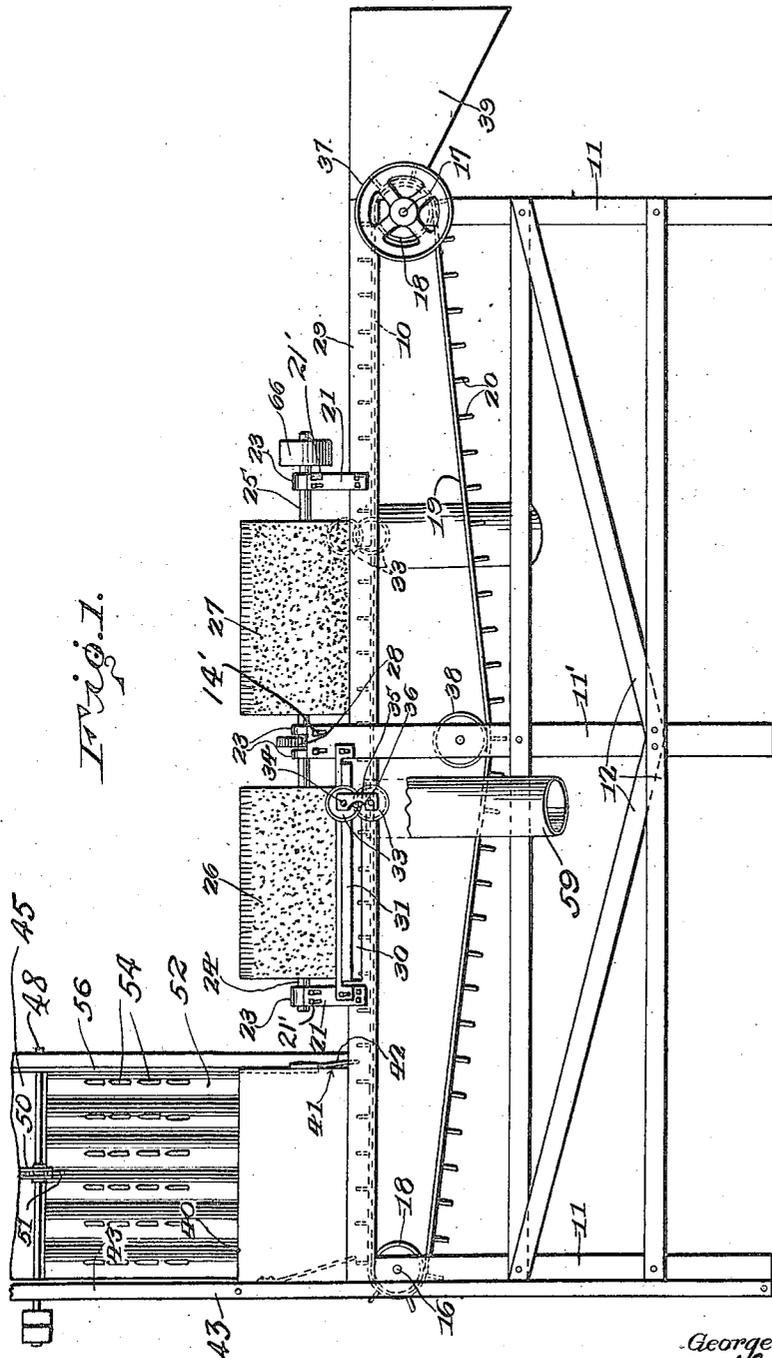


Fig. 1.

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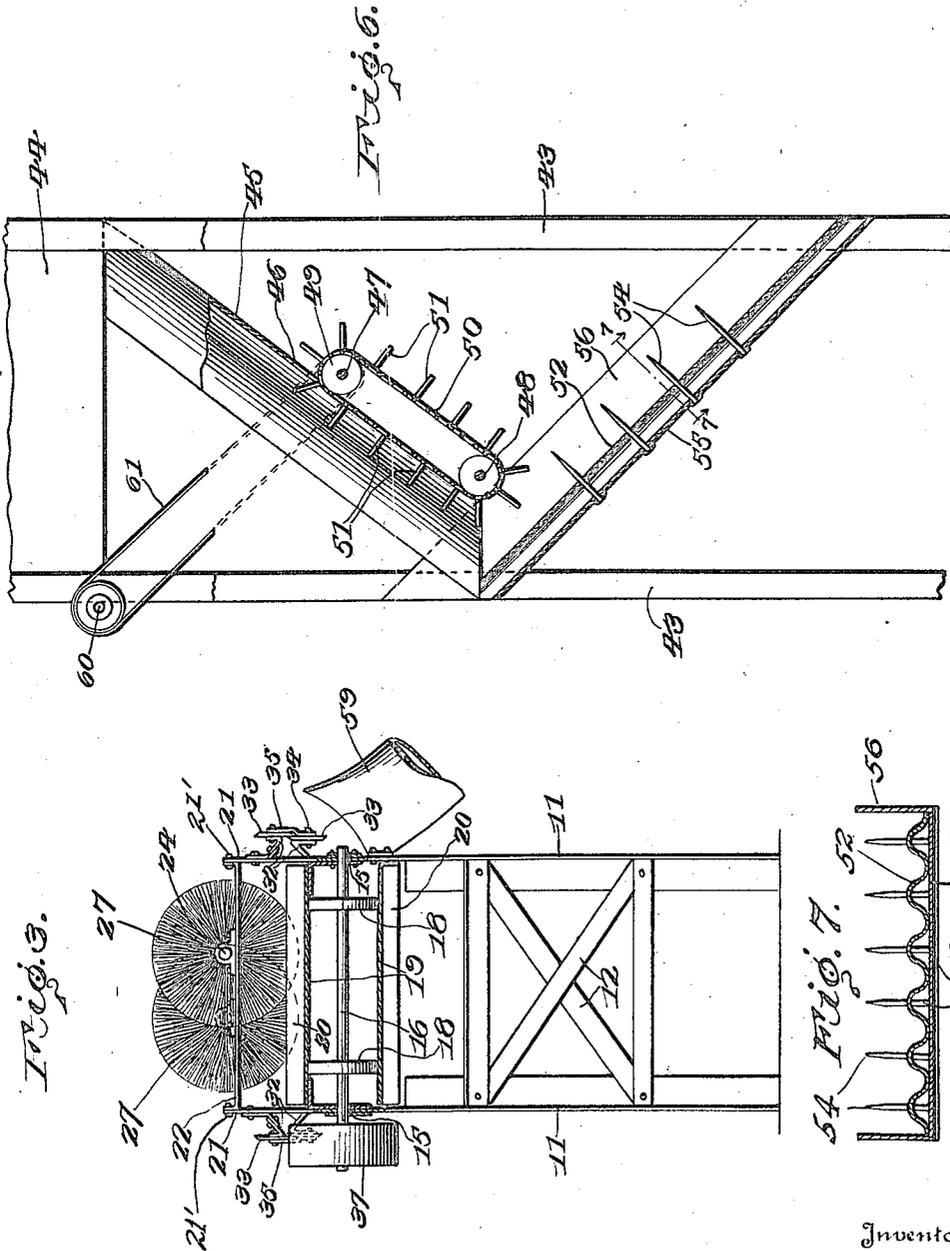
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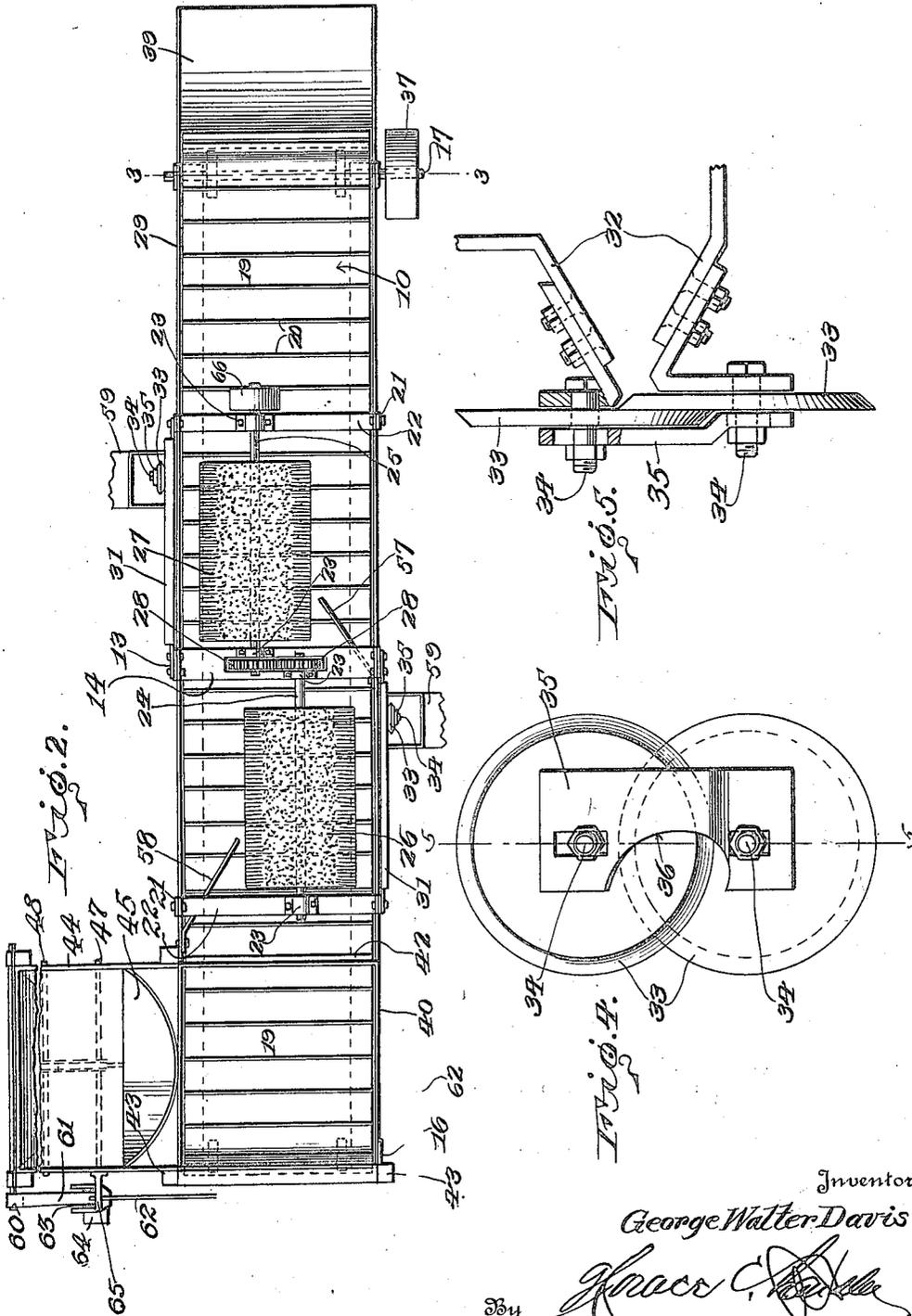
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Patented May 29, 1923.

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# UNITED STATES PATENT OFFICE.

GEORGE W. DAVIS, OF GIBSON CITY, ILLINOIS.

CORN FEEDING AND DEBUTTING MACHINE.

Application filed May 27, 1922. Serial No. 564,174.

*To all whom it may concern:*

Be it known that I, GEORGE W. DAVIS, a citizen of the United States, residing at Gibson City, in the county of Ford, State of Illinois, have invented certain new and useful Improvements in Corn Feeding and Debutting Machines; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to new and useful improvements in corn machines, and particularly to machines for cutting the butts and heads of ears of corn, preparatory to husking or otherwise treating the ears.

One object of the invention is to provide a machine wherein the ears are fed in proper position to the debutter, and means for moving the ears first into position for cutting one end, and then into position to cut off the other end.

Another object of the invention is to provide a feeding mechanism which will turn the ears so that they will be delivered longitudinally to the hopper of the debutting machine.

Other objects and advantages will be apparent from the following description when taken in connection with the accompanying drawings.

In the drawings:

Figure 1 is a side elevation of a debutting machine, and its feeder.

Figure 2 is a top plan view of the same.

Figure 3 is a vertical transverse sectional view on the line 3—3 of Figure 2.

Figure 4 is an enlarged elevation of one set of rotary cutting disks.

Figure 5 is a vertical sectional view on the line 5—5 of Figure 4.

Figure 6 is a vertical longitudinal central sectional view through the feeding mechanism, on the line 6—6 of Figure 2.

Figure 7 is a transverse sectional view on the line 7—7 of Figure 6.

Referring particularly to the accompanying drawings 10, represents a table top which is supported on the legs 11, and which legs are properly braced at 12. The legs 11 are preferably formed from angle metal. The intermediate legs 11' extend above the table top, as shown at 13, and carried by these extensions, with its ends secured thereto for vertical adjustment as indicated at 14', is the transverse member 14. The upper ends of

the end legs 11 are formed with the bearings 15, for rotatably supporting the ends of the shafts 16 and 17, sprocket wheels 18 being fixed on the shafts for supporting the endless belt 19. Secured to the belt, and extending transversely thereof, are the flights 20, between which the individual ears of corn are adapted to lie, and be carried by the belt to devices for severing the heads and butts, as will be more particularly described later herein.

Secured to the side edges of the table top, at points intermediate the ends and intermediate legs 11 and 11', and extending vertically therefrom, are the supports 21. Adjustably connected, at 21' to the ends of the supports 21, and extending transversely over the conveyor belt 19, are the bars 22. Mounted on each of these bars 22, and on the member 14, are bearing brackets 23, which rotatably support the ends of the shafts 24 and 25, which extend longitudinally of the belt and table top. Fixed on the shafts 24 and 25, respectively, are the cylindrical rotatable brushes 26 and 27. The inner ends of the shafts 24 and 25 are disposed adjacent each other, and each has a gear 28 thereon, meshing with the gear of the other shaft. By this arrangement the brushes will be rotated in opposite directions, with relation to each other. The brushes are mounted in such positions, on the supports, that their bristles extend down into the spaces between the flights 20, for moving the ears transversely of the belt, and longitudinally of the flights, toward the edge of the belt. By means of the adjustments shown at 14' and 21' the brushes are capable of being raised and lowered. On each longitudinal edge of the table top there is mounted a vertical side wall 29, and formed through one side wall, for a distance equal to that between the intermediate leg and one of the supports 21, is a slot 30 through which the end of the ear of corn is adapted to be forced by the rotatable brush. In the other wall 29, there is formed a similar longitudinal slot, between the intermediate leg and the support 21, for the other end of the ear which is forced by the other brush. Vertically adjustable at each of these slots 30, is a plate 31, which regulates the size of the opening, and consequently the amount of the end of the ear which will protrude there-through, as will be readily understood.

Mounted on each of the side walls 29, near

the far end of the slot 30, are brackets 32, and supported in each upper and lower bracket is the stepped shaft 34, of a bevel edged cutting disk 33, each pair of disks being disposed in overlapping relation for the purpose of producing a shearing cut on the heads and butts of the ears of the corn. Engaged on the outer ends of the shafts of the disks 33 are the ends of the plate 35, the intermediate portion of the edge first approached by the ear of corn, being formed with a recess 36, which insures the proper positioning of the head or butt between the disks. One end of the shaft 17 is provided with a drive pulley 37. Carried adjustably by the intermediate legs 11' are the idlers 38, which engage with the inner face of the lower lap of the belt 19, to hold the same in proper taut condition. A discharge chute 39, is mounted on the end of the table, adjacent the drive pulley 37, for discharging the decapitated and debudded ears of corn, to a husking, cutting or other machine, not shown.

Supported over the end of the table, opposite to that of the chute 39, is a box 40, the same having no bottom so that the ears of corn will fall onto the belt 19. In the forward end wall of the box there is formed a transverse elongated opening 41, which is controlled by a flexible plate 42, for the purpose of forcing back all except the ears which lie between the flights of the belt. In other words, the plate 42 insures a single layer of ears of corn on the belt, said ears passing out through the opening 41 to the first brush.

Disposed adjacent the box 40, are the uprights 43, and mounted on the upper ends of these uprights which as shown in the drawings, as being at a greater elevation than said box, is a hopper 44, and inclining downwardly from the bottom of the hopper, in a direction laterally of the end of the table, is a chute 45, the lower portion of which has an elongated longitudinally extending opening 46. Properly supported at the upper and lower ends, respectively, of the opening 46, are the transverse shafts 47 and 48. On these shafts 47 and 48, and rotating within the opening 46, are the sprocket wheels 49. Engaged around the sprockets 49 is a chain 50, and secured to the links of the chain, and having their inner ends open to receive the teeth of the said sprockets, are the outwardly extending pins 51, which serve to feed the ears down the chute 45. Secure to the uprights 43, and inclining downwardly and inwardly from the lower end of the chute 45, to a point over the box 40, is a longitudinally corrugated metal sheet 52, through which project the pins 54, carried by the base 55, which supports the plate. As the ears are delivered by the pins 51, and fall onto the

plate 52, the ears will be turned so as to slide down in the corrugations, lengthwise of the ears. The chute 45 is provided with side walls 56, which prevent the ears dropping off at the sides of the chute, thus insuring their proper delivery into the box 40.

Mounted about the belt 19, and extending from a point adjacent the forward end of the first rotary brush 26, to a point adjacent the rear end of the brush 27, is a deflector plate 57, which serves to force the ears over toward the second brush 27, after having had one end cut off. The brushes serve to force the ears toward the sides of the belt, to be engaged and cut by the cutting disks. A second deflector plate 58 is mounted adjacent the other side and inner end of the brush 26, to insure that the ears of corn will be moved over for action by the brush 26.

Mounted on the sides of the table, below each pair of cutting disks, is a chute 59, which is adapted to receive and convey away from the machine, the ends cut from the ears of corn.

Mounted on the upper end of one of the uprights 43 is a drive shaft 60, which is oppositely connected with the shaft 47, by means of the drive belt 61. A lever 62 is pivotally supported on the side of the chute 45, and extends outwardly to be grasped. On the outer end of the shaft 47, are two pulleys 63 and 64, the former being fixed on the shaft while the latter is loose on the shaft, the drive belt 61 being adapted to be shifted from one pulley to the other by means of the lever 62. A notched keeper 65 is also mounted on the chute 45, for engagement with the lever 62, to hold the same in its adjusted positions.

The forward end of the shaft 25 carries a drive pulley 66, which receives its power from any suitable source, the driving of the shaft 25 communicating motion to the shaft 24, by means of the gears 28.

What is claimed is:

1. A machine for trimming ears of corn comprising a carrier, cutting mechanisms mounted at opposite sides of the carrier and in staggered relation to each other, a rotatable member for moving the ears into position to have one end cut off by one of the cutting mechanisms, means for deflecting the ears toward said rotatable member, a second rotatable member for moving the ears to present their other ends to the other cutting mechanism, and means for deflecting the ears toward the second rotatable member.

2. A machine for trimming ears of corn comprising a carrier, cutting mechanisms mounted at opposite sides of the carrier and in staggered relation to each other, a longitudinally extending and rotary brush mounted above the carrier and adjacent

each cutting mechanism for moving the ears successively toward the opposite sides of the carrier to present their respective ends to the cutting mechanisms, and a deflector plate adjacent one end of each brush for directing the ears toward the brush.

3. A machine for trimming ears of corn comprising a carrier, means for delivering ears of corn to the carrier, cutting mechanism mounted at opposite sides of the carrier and in staggered relation to each other, a rotatable member for moving the ears into position to have one end cut off by one of the cutting mechanisms, means for deflecting the ears toward said rotatable member, a second rotatable member for moving the ears to present their other ends to the other cutting mechanism, and means for deflecting the ears toward the second rotatable member.

4. A machine for trimming ears of corn comprising a carrier, means for delivering to the carrier, cutting mechanisms mounted at opposite sides of the carrier and in staggered relation to each other, a pair of longitudinally extending and offset shafts

mounted over the carrier each in rear of a cutting mechanism, rotary brushes mounted on the shafts, gears on the shafts meshing for driving the shafts in opposite directions, and a deflector plate adjacent one end of each brush for directing the ears toward the brush.

5. A machine for trimming ears of corn comprising a carrier, cutting mechanism mounted at opposite sides of the carrier and in staggered relation to each other, a longitudinally extending and rotatable brush mounted above the carrier and adjacent each cutting mechanism for moving the ears successively toward the cutting mechanisms, each of the cutting mechanisms including a pair of overlapping disk knives, and a deflector plate adjacent one end of each brush.

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

GEORGE W. DAVIS.

Witnesses:

L. E. ROCKWOOD,  
BRYSON STRAUSS.