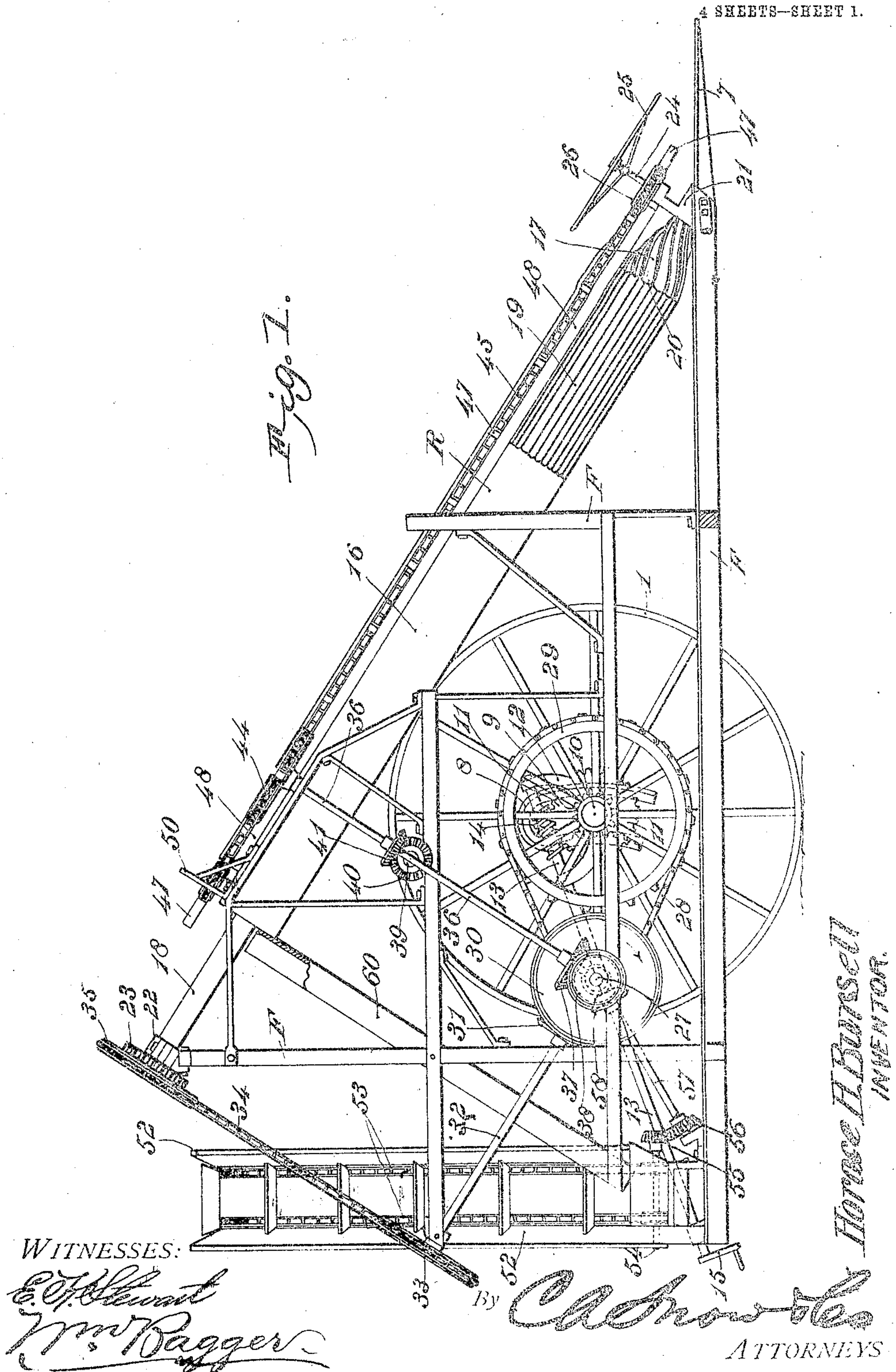


No. 843,866.

PATENTED FEB. 12, 1907.

H. H. BURSELL.  
CORN HUSKING MACHINE.  
APPLICATION FILED MAR. 31, 1906.

4 SHEETS—SHEET 1.



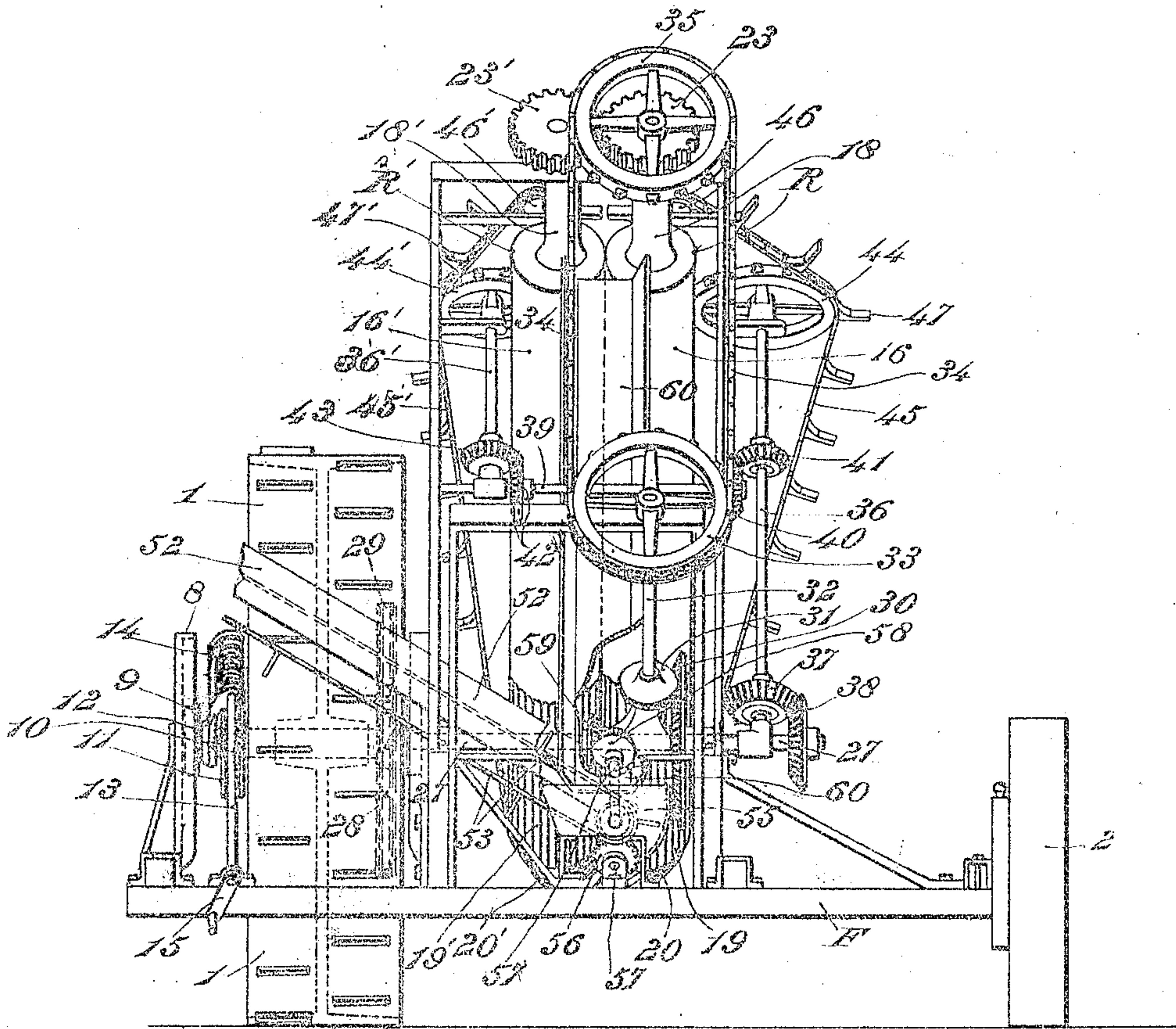
No. 843,866.

PATENTED FEB. 12, 1907.

H. H. BURSELL.  
CORN HUSKING MACHINE.  
APPLICATION FILED MAR. 31, 1906.

4 SHEETS—SHEET 2.

*Fig. 2.*



WITNESSES:

*E. J. Stewart*  
*Wm. D. Rogers*

*Horace H. Bursell,*

INVENTOR.

By *C. A. Snow & Co.*  
ATTORNEYS



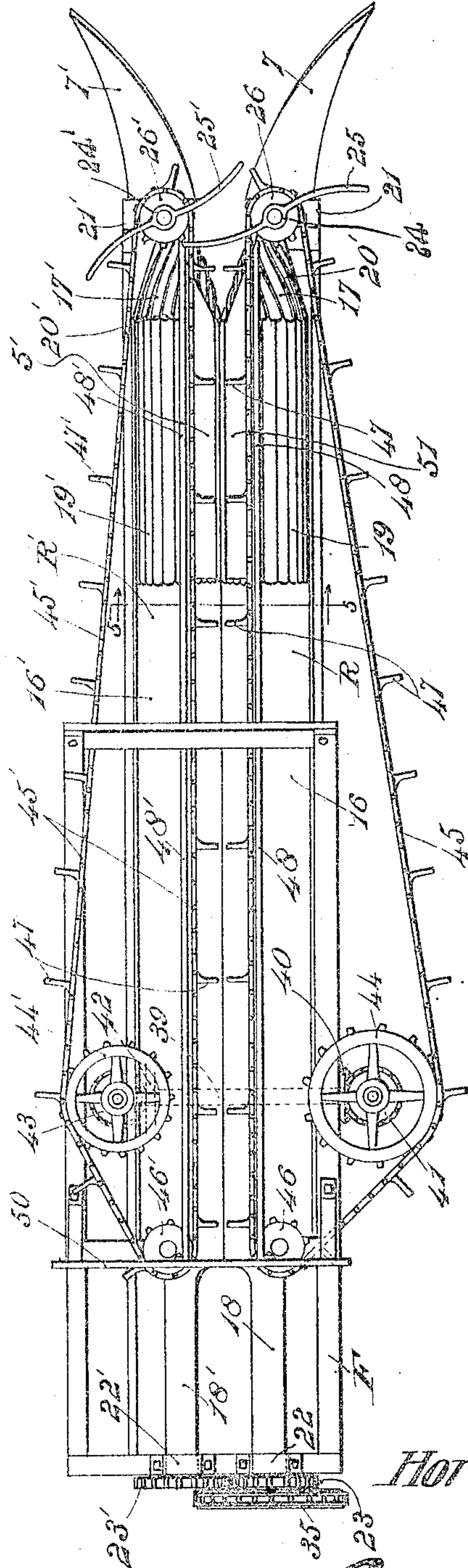
No. 843,866.

PATENTED FEB. 12, 1907.

H. H. BURSELL.  
CORN HUSKING MACHINE.  
APPLICATION FILED MAR. 31, 1906.

4 SHEETS—SHEET 3

Fig. 3.



WITNESSES:

*E. J. Hunt*  
*Wm. Baggett*

*Horace H. Bursell*  
INVENTOR.  
By *Chas. H. Bursell*  
ATTORNEYS

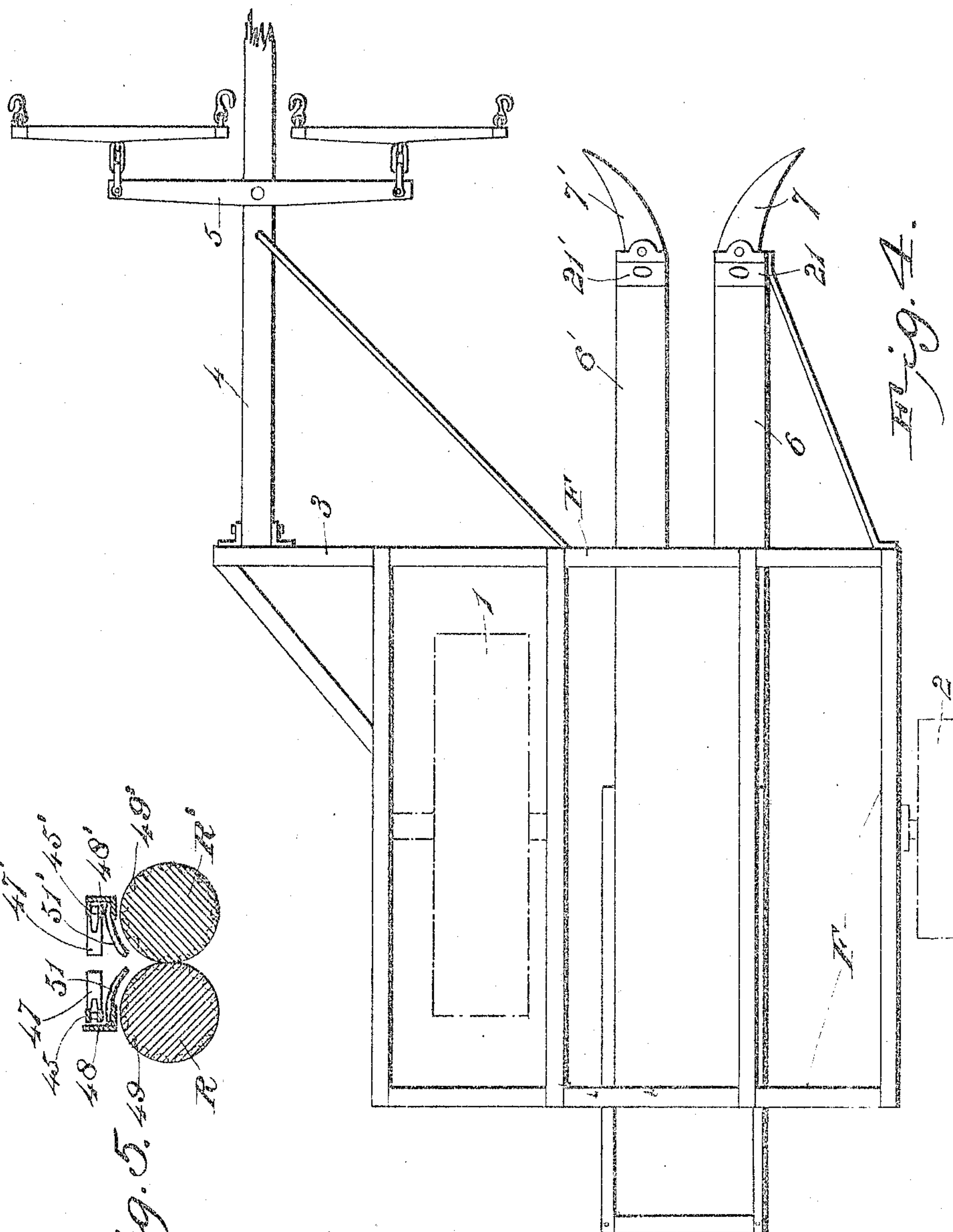
No. 843,866.

PATENTED FEB. 12, 1907.

H. H. BURSELL.  
CORN HUSKING MACHINE.

APPLICATION FILED MAR. 31, 1908.

4 SHEETS—SHEET 4.



Horace H. Bursell,

INVENTOR

WITNESSES:

*Ed. Stewart*  
*Wm. Ragger*

By

*Chas. H. Bursell*

ATTORNEYS



# UNITED STATES PATENT OFFICE.

HORACE H. BURSELL, OF TRUMAN, MINNESOTA, ASSIGNOR OF FORTY-NINE ONE HUNDREDTHS TO RAY E. VAN AMBER, OF TRUMAN, MINNESOTA.

## CORN-HUSKING MACHINE.

No. 843,866.

Specification of Letters Patent.

Patented Feb. 12, 1907.

Application filed March 31, 1906. Serial No. 309,149.

*To all whom it may concern:*

Be it known that I, HORACE H. BURSELL, a citizen of the United States, residing at Truman, in the county of Martin and State of Minnesota, have invented a new and useful Corn-Husking Machine, of which the following is a specification.

This invention relates to that class of corn-husking machines which are adapted to operate upon corn standing in the field in such a manner as to snap or detach the ears from the stalks and subsequently to strip the husks from the ears, the snapping operation and the husk-stripping operation being performed by a single pair of rolls.

The objects of the invention are to simplify and improve the construction and operation of this class of machines.

With these and other ends in view, which will readily appear as the nature of the invention is better understood, the same consists in the improved construction and novel arrangement and combination of parts which will be hereinafter fully described, and particularly pointed out in the claims.

In the accompanying drawings has been illustrated a simple and preferred form of the invention, it being, however, understood that no limitation is necessarily made to the precise structural details therein exhibited, but that changes, alterations, and modifications within the scope of the invention may be resorted to when desired.

In the drawings, Figure 1 is a side elevation of a corn-husking machine constructed in accordance with the principles of the invention, said view being shown partly in section. Fig. 2 is a rear elevation of the same. Fig. 3 is a plan view showing the snapping and husking rolls and related parts. Fig. 4 is a plan view of the frame of the machine. Fig. 5 is a sectional detail view of the snapping and husking rolls, taken on the plane indicated by the line 5 5 in Fig. 3.

Corresponding parts in the several figures are indicated throughout by similar characters of reference.

The frame F of the improved machine is supported upon a bull-wheel 1 and a grain-wheel 2, from the former of which power is derived to drive the moving parts of the machine. The said wheels are disposed with their axes in alinement with each other or in the same transverse perpendicular plane in or-

der that the frame may be tilted or dipped, as will be readily understood. The frame is provided with a laterally-extending bracket 3, with which the tongue 4 is hingedly connected for the attachment of the draft, which may be applied through the medium of an equalizer 5 of ordinary construction. The frame is also provided with a pair of forwardly-extending guide-bars 6 and 6', provided at their front ends with the divergent gatherers 7 and 7'.

Means are provided for effecting the adjustment of the frame vertically with relation to the bull-wheel 1, said means including a segmental guide 8, having a toothed portion or rack that engages a pinion 9 upon the axle 10 of the bull-wheel, said axle carrying also a worm-gear 11 and a bracket 12, supporting a shaft 13, having a worm 14, meshing with the worm-gear, and a crank 15, whereby it may be rotated. Mechanism of this kind, however, is well known in corn-harvesters as well as in grain-harvesters, and it has been only conventionally illustrated.

R and R' designate the corn-engaging rolls, which operate first to engage the stalks and to assist in detaching the ears from the latter and afterward to strip the husks from the ears. These rolls include the cylindrical bodies 16 16', having conical members 17 17' at their lower front ends and reduced cylindrical shanks 18 18' at their upper rear ends. A portion of the cylindrical bodies near the lower front ends of the rolls and adjacent to the conical members 17 17' are longitudinally grooved or corrugated, as will be seen at 19 19', and the conical portions 17 17' are provided with spirally-disposed feed-flanges 20 20', whereby the conical portions are converted into feed-augers, which assist in gathering the cornstalks and in guiding the same between the longitudinally-corrugated portions of the rolls, said feed-flanges being spaced apart at the forward extremities or apices of the conical members, forming wide openings or passages for the admission of the stalks, upon which the spiral flanges by the rotation of the rolls gradually close, so as to feed the stalks positively between the corrugated portions of the rolls. Bearing-blocks 21 21' are supported upon the guide-bars 6 and 6' near the front ends of said bars, said blocks affording bearings for the lower front extremities of the



rolls. The reduced portions or shanks 18 18' of said rolls are journaled in suitable bearings 22 and 22' upon the frame. Said shanks or reduced portions are also provided in rear 5 of said bearings with intermeshing pinions 23 and 23', whereby said rolls will be geared together, so as to rotate simultaneously in the direction of each other.

The rolls, as will be clearly seen by reference to Fig. 1 of the drawings, are supported 10 at a suitable inclination, the front ends of said rolls being supported at such a distance above the ground that not only the standing stalks, but also such stalks as have been 15 beaten down or toppled over, will be certainly engaged by the gatherers and will be thereby guided between the conical auger-shaped members of the rolls, whereby they will be further guided in a rearward direction 20 until the stalks are laid hold of by the longitudinally-corrugated cylindrical portions of the rolls, as will be readily understood.

To assist in gathering and guiding the cornstalks, there are provided a pair of reels, 25 including shafts 24 24', which are supported for rotation in the bearing-blocks 21 21', which afford bearings for the forward extremities of the rolls, said shafts being provided with radial wings or arms 25 25', which 30 are especially effective to assist in lifting and in gathering down corn. Said wings rotate in paths approximately parallel to the longitudinal axes of the rolls, while the reel-shafts 24 24' are at right angles to the latter. The 35 reel-shafts are provided with sprocket-pinions 26 26' for engagement with the driving-chains, as will be presently described.

Supported for rotation in suitable bearings on the frame of the machine in rear of the 40 axle of the bull-wheel is a transverse shaft 27, which is driven, by means of a link belt 28, from a sprocket-wheel 29 upon the bull-wheel axle. The shaft 27 carries a bevel-gear 30, meshing with a bevel-pinion 31 upon a shaft 32, which is supported for rotation in 45 suitable bearings parallel to the axes of the rolls. The shaft 32 carries a sprocket-wheel 33, which is connected by a link belt 34 with a sprocket-wheel 35 upon the roll R, which is 50 thereby driven in the proper direction, transmitting motion, as hereinbefore described, to its mate. Supported in suitable bearings at right angles to the axes of the rolls and to that of the shaft 27 are a pair of shafts 36 and 36', 55 the former of which is extended downwardly and carries a bevel-pinion 37, meshing with a bevel-pinion 38 upon the driven shaft 27, from which motion is thus transmitted to the shaft 36. A counter-shaft 39 is provided 60 having a bevel-pinion 40, meshing with a bevel-pinion 41 upon the shaft 36. Said counter-shaft has also a bevel-pinion 42, meshing with a bevel-pinion 43 upon the shaft 36', which latter will thereby be driven 65 reversely to the shaft 36, the gearing being

suitably arranged with this end in view. The shafts 36 36' carry at their upper ends sprocket-wheels 44 44', over which are guided the conveyer-chains 45 and 45', said chains 70 being also guided over the sprocket-wheels 26 26' upon the reel-shafts and over idlers 46 and 46' near the upper ends of the cylindrical portions of the rolls R and R', said conveyer-chains being disposed in a plane 75 which is parallel to the plane of the axes of the rolls, the inner or proximate flights of said chains being disposed as close as convenient to the faces of the rolls on the down-going sides of the latter. The links of the 80 conveyer-chains are provided at intervals with lugs or fingers 47 47', adapted to engage first the stalks and afterward the detached ears of corn, said fingers serving to convey the ears over the smooth cylindrical portions 85 of the rolls, whereby the husks are stripped from the ears.

Suitably supported adjacent to the inner flights of the conveyer-chains are a pair of 90 guide-bars 48 48', which are preferably L-shaped in cross-section, the horizontal flange portions 49 49' of said bars affording supporting means for the inner flights of the chains, which are thereby kept from direct 95 contact with the rolls. The lower ends of the guide-bars 48 48' may be suitably bolted upon or otherwise connected with the bearing-blocks 21 21', and the upper ends of said guide-bars have been illustrated as being 100 suitably connected with a cross-bar 50 of the frame. The horizontal flange portions 49 49' of these guide-bars also afford supporting means for a pair of curved plates 51 51', 105 which will be known as the "snapping-plates," and which are supported directly over the longitudinally-corrugated portions 19 19' of the rolls. These snapping-plates are entirely stiff and rigid, and their function is as the stalks are being buckled down between the rolls to detach the ears from the stalks, 110 said plates being spaced apart at their proximate edges a sufficient distance to admit of the passage of the stalks and leaves, while the ears will not be capable of passing between said plates. The guide-bars 48 and 115 48', in addition to supporting the snapping-plates and the inner flights of the chains, operate to constitute a chute-channel, through which the ears may be guided in an upward and rearward direction while the husks are 120 being stripped therefrom without danger of being spilled over the sides of the rolls.

An elevator 52 of suitable construction is disposed transversely upon the rear part of the frame for the purpose of conveying the 125 ears into a wagon driven alongside of the machine or into a suitable receptacle of any kind, said elevator being provided with an endless carrier 53, the driving-shaft of which, 54, is provided with a bevel-pinion 55, meshing with a bevel-pinion 56 upon a shaft 57, 130



which latter is provided at its opposite end with a bevel-pinion 58, meshing with a bevel-gear 59 upon the driven shaft 27, as will be best seen in Fig. 2 of the drawings. The husked ears are guided to the elevator over an inclined chute 60, into the upper ends of which the ears are discharged over the rear or upper ends of the cylindrical portions of the rolls between the shanks or reduced portions 18 18' of said rolls.

From the foregoing description, taken in connection with the drawings hereto annexed; the operation and advantages of this invention will be readily understood by those familiar with this class of devices. The smooth cylindrical portions of the rolls R R' are disposed practically in contact with each other, the lower forward portions of the rolls being grooved or corrugated, partly for the purpose of enabling them to take a firm hold of the cornstalks that are to be operated upon and also in order to enable the said stalks to pass between the rolls, the diameters of which are partly reduced by forming the grooves or corrugations therein. The rolls will be rotated at such speed that the longest stalks will be buckled down between the corrugated portions of the rolls, and the ears will be snapped from the stalks by the snapping-plates, which are disposed above said grooved or corrugated portions. The conveyer-chains will operate to move the stalks rearwardly between the rolls as the machine advances, and when the ears are snapped from the stalks they will be engaged by the fingers of the conveyer-chains and will thereby be pushed off the snapping-plates and onto the smooth cylindrical portions of the rolls and upwardly and rearwardly over the faces of the rolls. The smooth cylindrical portion of the rolls will lay hold of the husks, which latter will thereby be torn or stripped from the ears, the husked ears being conveyed or pushed by the fingers of the conveyer-chains in an upward and rearward direction until they are discharged upon the chute 60, whereby they are guided to the elevator, which serves to carry them to the place of deposit.

This improved machine, as will be seen from the foregoing description, is extremely simple in construction, the snapping and husking operations being performed by a single pair of rolls which are driven without the intervention of complicated mechanism of any kind. It is obvious that the mechanism may be duplicated when desired, so as to enable the machine to operate upon a plurality of rows instead of upon a single row of corn.

Having thus described the invention, what is claimed is—

1. In a machine of the class described, a pair of driven coöperating rolls having conical auger members, and longitudinally-cor-

rugated portions adjacent to said conical members, the greater portion of the rolls having smooth cylindrical faces disposed approximately in contact with each other.

2. In a machine of the class described, a pair of rolls, geared together for rotation in opposite directions, said rolls having contacting cylindrical faces for a portion of their lengths and provided at their forward ends with conical auger-shaped stalk-engaging members and with longitudinally-corrugated portions adjacent to said conical members; in combination with ear-snapping plates rigidly supported adjacent to the corrugated portions of the rolls.

3. In a machine of the class described, a pair of rolls supported in an inclined plane and geared together for rotation, bars angular in cross-section supported adjacent to the upper faces of the rolls, and snapping-plates supported by said bars adjacent to the forward portions of the rolls.

4. In a machine of the class described, a pair of rolls supported in an inclined plane and geared together for rotation, said rolls having contacting cylindrical faces for a portion of their lengths, conical stalk-engaging points, longitudinally grooved or corrugated portions adjacent to said points, and reduced cylindrical shanks at their rear ends; in combination with guide-bars angular in cross-section supported adjacent to the faces of the rolls, snapping-plates secured to the guide-bars adjacent to the corrugated portions of the rolls, and conveyer-chains guided over the bars.

5. In a machine of the class described, a frame having forwardly-extending bars with terminal divergent gatherers, bearing-blocks supported upon said bars, a pair of rolls stepped in the bearing-blocks and having auxiliary bearings upon the frame said rolls being provided with reduced shanks at their rear ends, intermeshing gears upon said shanks, means for driving one of the rolls, bars angular in cross-section supported adjacent to and spaced from the upper faces of the rolls, shafts journaled in the bearing-blocks, reels carried by said shafts sprocket-wheels upon the reel-carrying shafts, endless driven chains guided over the angular bars and over the sprocket-wheels upon the reel-carrying shafts, and driving means for the rolls.

6. In a machine of the class described, a pair of coöperating driven rolls having auger-shaped conical stalk-engaging members and corrugated portions adjacent to said members, reel-carrying shafts supported for rotation adjacent to the stalk-engaging members of the rolls, reels carried thereby sprocket-wheels upon the reel-carrying shafts, bars angular in cross-section supported adjacent to the upper faces of the rolls, ear-snapping plates supported by the bars adjacent to the



843,866

corrugated portions of the rolls, endless  
driven chains guided over the bars and over  
the sprocket-wheels upon the reel-carrying  
shafts said chains being provided with stalk  
5 and ear engaging fingers, a discharge-chute  
adjacent to the rear ends of the rolls, and an  
elevator disposed to receive material dis-  
charged over the chute.

In testimony that I claim the foregoing as  
my own I have hereto affixed my signature 10  
in the presence of two witnesses.

HORACE H. BURSELL.

Witnesses:

J. J. ARMS,

D. B. KELLEY.