

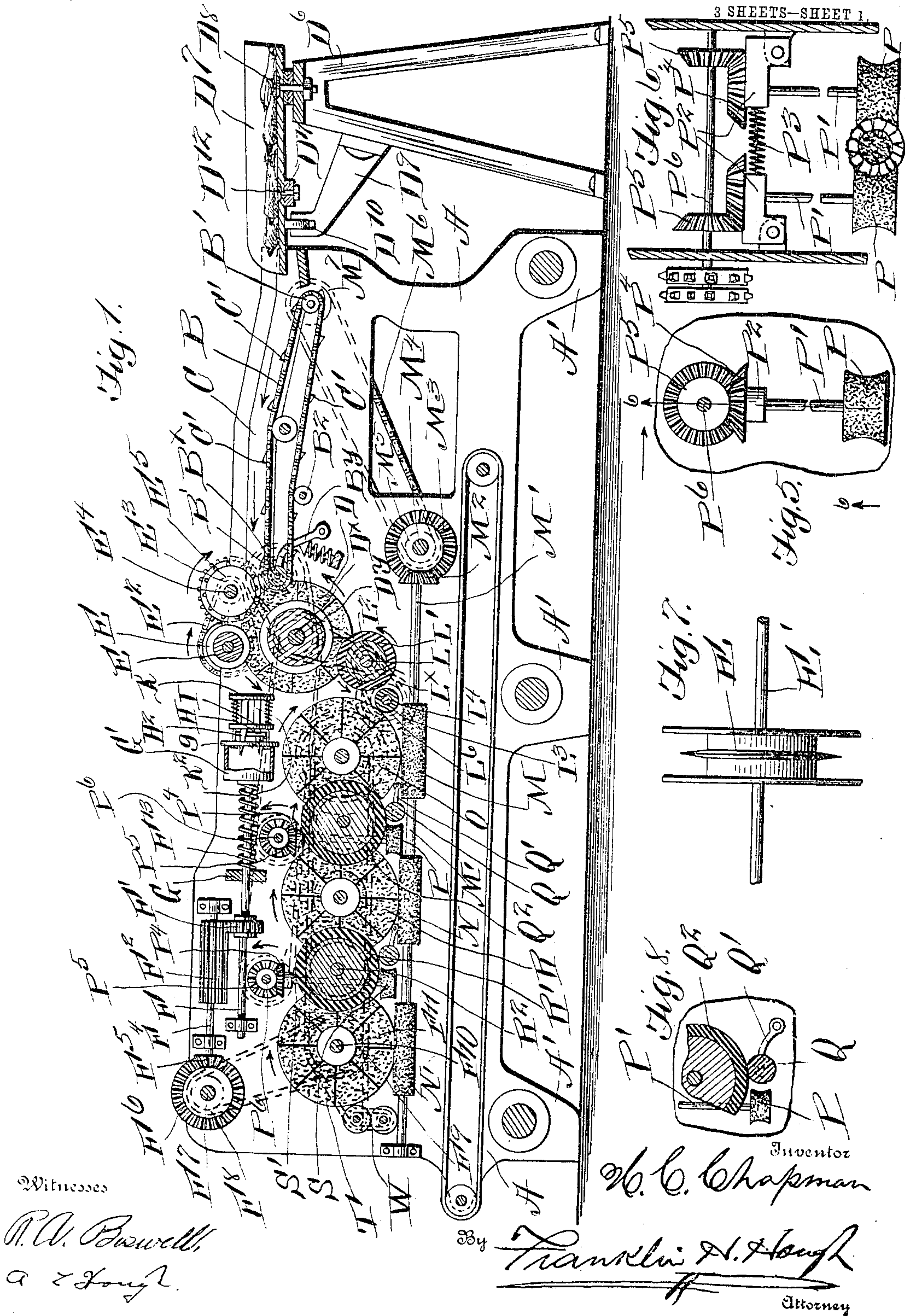
No. 819,122.

PATENTED MAY 1, 1906.

H. C. CHAPMAN.
CORN HUSKER.

APPLICATION FILED SEPT. 8, 1905.

3 SHEETS—SHEET 1.



No. 819,122.

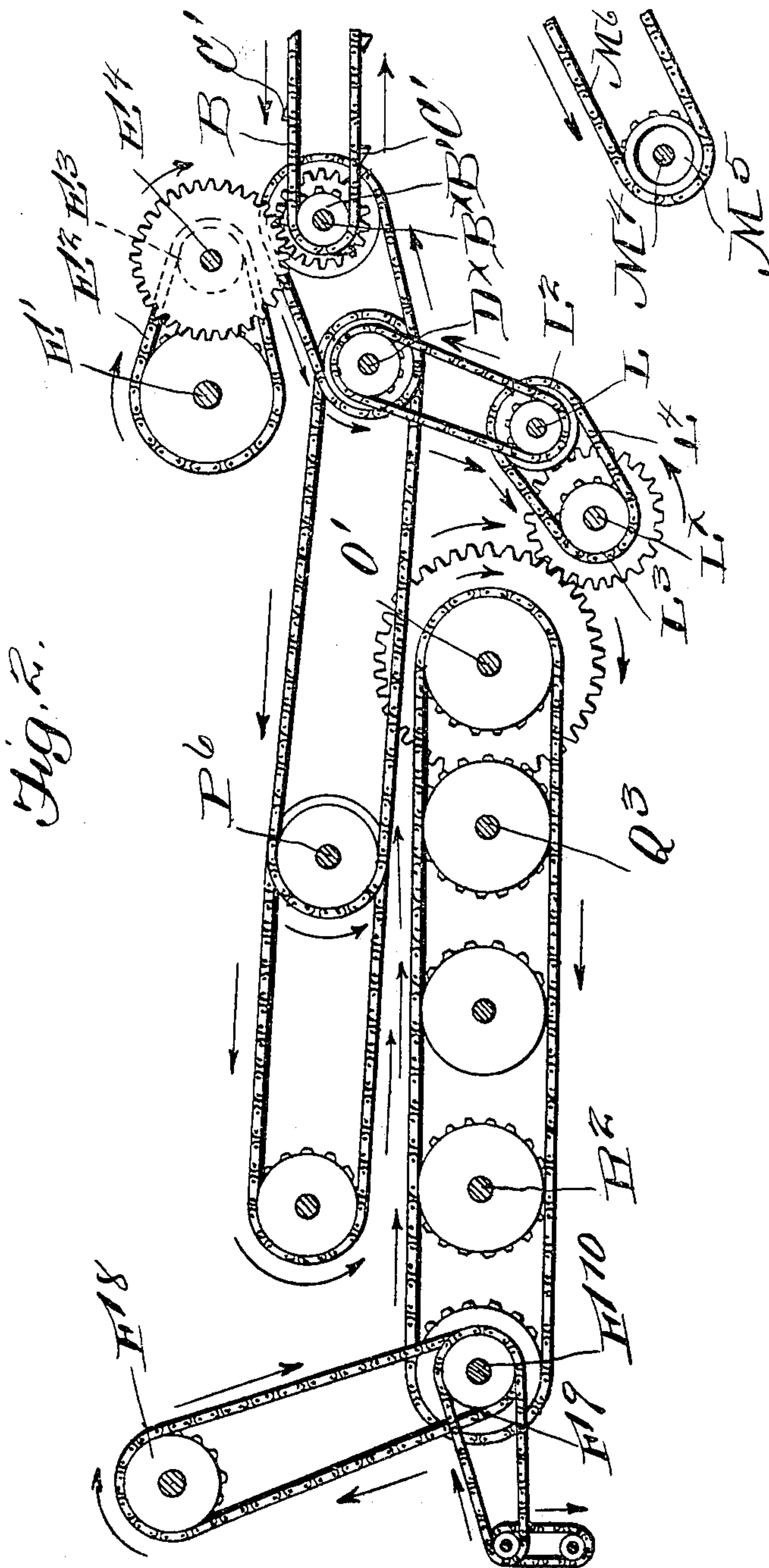
PATENTED MAY 1, 1906.

H. C. CHAPMAN.

CORN HUSKER.

APPLICATION FILED SEPT. 8, 1905.

3 SHEETS—SHEET 2.



Witnesses

P. A. Brewster
A. L. Thompson

Inventor

Inventor

W. C. Chapman,

ସୌଧ

ॐ Franklin D. Roosevelt

Attorney

No. 819,122.

PATENTED MAY 1, 1906.

H. C. CHAPMAN.

CORN HUSKER.

APPLICATION FILED SEPT. 8, 1905.

3 SHEETS—SHEET 3.

Fig. 3.

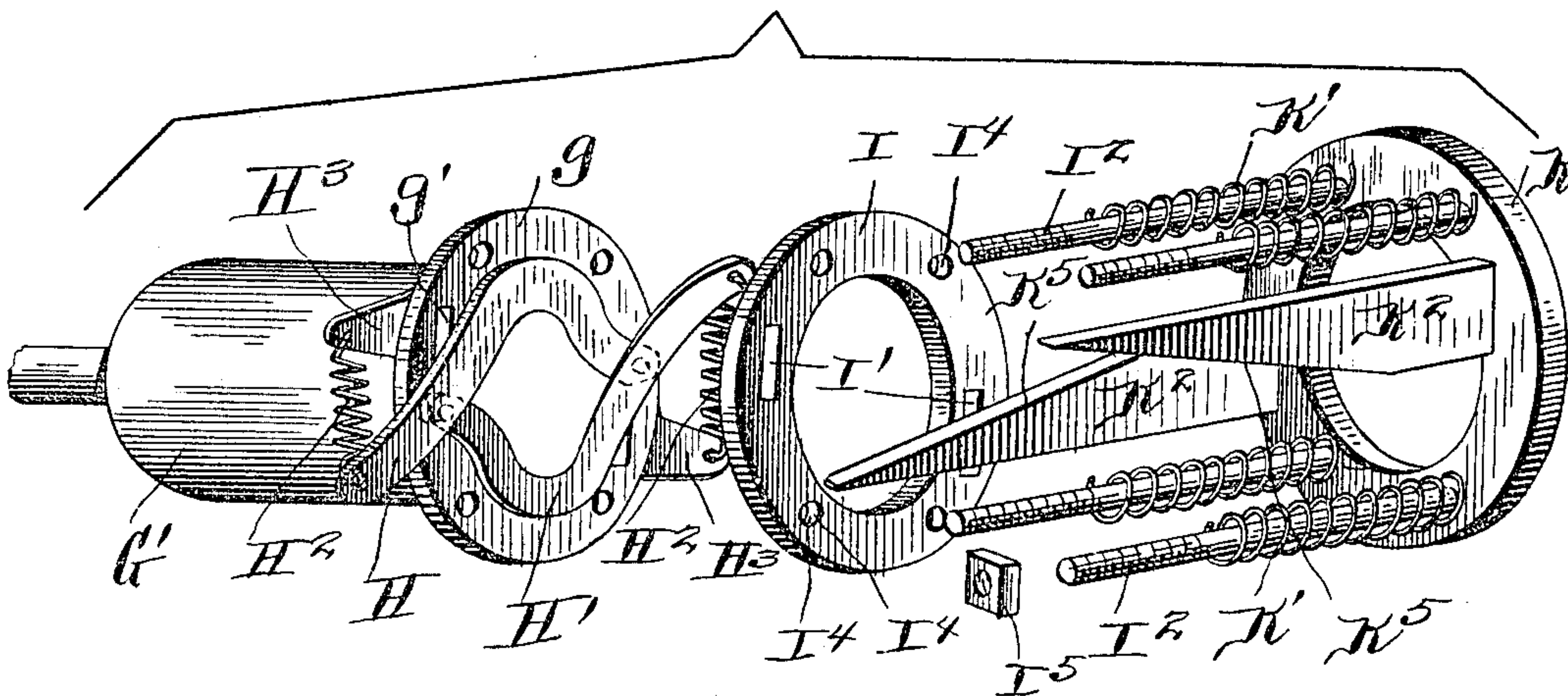
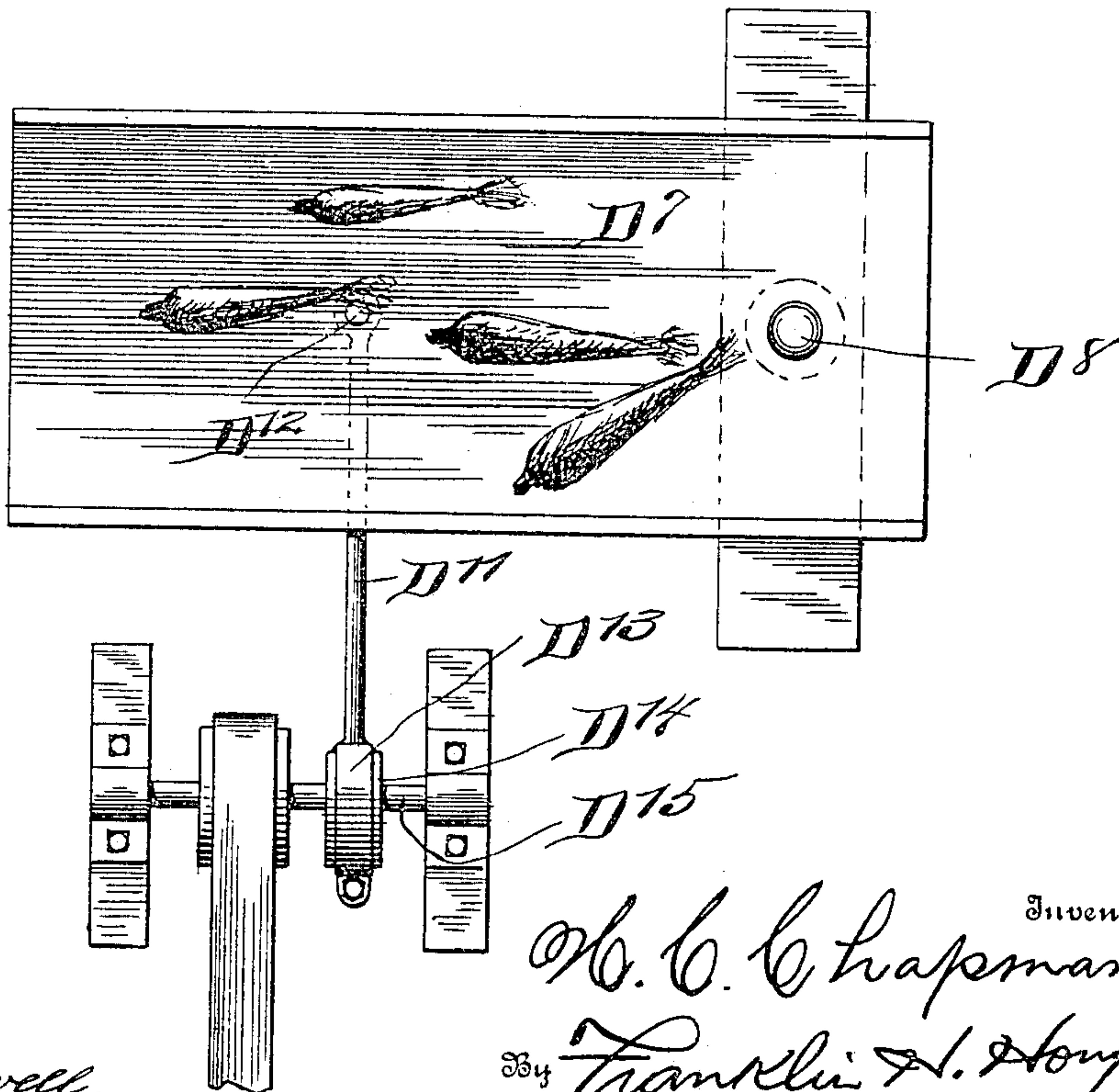


Fig. 4.



Witnesses

P. A. Brewster,
a. c. Hough

Inventor

H. C. Chapman,
By Franklin H. Hough

Attorney

UNITED STATES PATENT OFFICE.

HEMEN C. CHAPMAN, OF LEAMINGTON, CANADA.

CORN-HUSKER.

No. 819,122.

Specification of Letters Patent.

Patented May 1, 1906.

Application filed September 8, 1905. Serial No. 277,619.

To all whom it may concern:

Be it known that I, HEMEN C. CHAPMAN, a citizen of the United States, residing at Leamington, Ontario, Canada, have invented certain new and useful Improvements in Corn-Huskers; 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, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

This invention relates to new and useful improvements in corn-husking and silk-removing apparatus, and it comprises various details of construction and combinations of parts, which will be hereinafter fully described and then specifically defined in the appended claims.

In carrying out the present invention it is my intention to improve upon my former patent, No. 743,450, and render the same more practical and efficient for uses for which it is devised.

My invention is illustrated in the accompanying drawings, forming a part of this application, and in which—

Figure 1 is a vertical sectional view longitudinally through my improved corn-husker. Fig. 2 is a diagrammatic view showing the gear and sprocket wheel connections for driving the apparatus. Fig. 3 is an enlarged detail view of the portion of the apparatus which is provided to cut off one end of an ear of corn and sever the husks at the butt-end thereof. Fig. 4 is a top plan view of a detail showing the mechanism for vibrating the hopper to cause the butt-ends of the ears to be fed foremost. Fig. 5 is a sectional view on line 5 5 of Fig. 1. Fig. 6 is a sectional view on line 6 6 of Fig. 5. Fig. 7 is a detail view of one of the disks, having a circular cutting-knife thereon. Fig. 8 is a detail view of the yielding roller under which the ears of corn are adapted to pass.

Reference now being had to the details of the drawings by letter, A designates the frame of the machine, which is mounted upon suitable legs A', and B designates an endless conveyer, there being any number of said conveyers, as may be desired, which may be located side by side and on which the ears of corn are to be fed to the apparatus. Said conveyers are mounted upon the sprocket-wheels B' and pass over idlers B². One of

said sprocket-wheels B' is driven by suitable belted connections with the driving apparatus. Each conveyer B is mounted in a suitable trough C and at intervals along the chain or lugs C', adapted to carry the ear of corn, butt foremost, along the troughs and deposit the same between the sectional disks D, which are of a construction substantially similar to those illustrated in my said former patent, and said disks are mounted upon a shaft D^x, and intermediate the disks D is a circular cutting-knife D^y. The shaft B^x, which carries the inner sprocket-wheel B', is mounted upon the spring-arms B^y, held yieldingly by springs B^z and provided for the purpose of allowing the inner end of the conveyer to yield to adapt itself to different-sized ears of corn.

Mounted upon a standard D⁶ is a shaking-hopper D⁷, pivotally mounted at D⁸, and D⁹ designates an arm carrying an antifriction-wheel D¹⁰, journaled therein, upon which the free exit end of the hopper rests.

D¹¹ is a link one end of which is pivotally connected at D¹² to the bottom of the hopper, as shown in Fig. 4 of the drawings, and the other end has a strap D¹³, which rides upon the eccentric D¹⁴, fixed to the shaft D¹⁵, said shaft being driven by any suitable belted connections desired, whereby as the shaft is rotated a shaking movement may be imparted to the hopper, the bottom of which is inclined slightly forward and downward. The ears of corn (shown in Fig. 1) are placed upon the hopper, and the shaking movement of the latter will cause the butt-ends of the ears to be fed forward upon the conveyer to be advanced into the machine for the purpose of husking the corn and removing the silk from the kernels.

E designates a circular outlined cutting-knife mounted upon a suitable shaft E', which is journaled in the frame of the apparatus and which is driven by means of a sprocket-chain E², passing over a sprocket-wheel E³, rotating with the shaft E⁴, which latter shaft also drives a wheel E⁵, positioned above the inner end of the endless conveyer.

F designates a shaft mounted in suitable bearings in the frame of the apparatus and has fixed thereto a pinion-wheel F', which is in mesh with an elongated gear-wheel F², fastened to and rotating with the shaft F⁴, which latter is also journaled in suitable bearings upon the frame. One end of the shaft F⁴ carries a bevel-pinion F⁵, which is in

mesh with a similar pinion F^6 on the shaft F^7 , and a sprocket-wheel F^8 upon the shaft F^7 is adapted to drive a sprocket-wheel F^9 upon the shaft F^{10} , which latter shaft carries a sectional disk F^{11} . Said shaft F has a longitudinal movement and is normally held in the position shown in Fig. 1 of the drawings by means of a spring F^{13} , which bears against a stationary member G , while its inner end is in contact with one end of the shell G' , a detail view of which is shown in Fig. 3 of the drawings. Said shell G' , which is hollow, has a flange g , with elongated slots g' therein, and pivotally mounted upon said flanges are the two curved knives H and H' , the ends of said knives projecting beyond the circumference of said flange, and springs H^2 are provided, one of each being connected to a lug H^3 upon said flange and its other end connected to one of said knives, as shown clearly in Fig. 3 of the drawings, the office of said springs being to normally hold the knives in the position shown in Fig. 3 and spaced apart, it being understood that the inner concaved portions of said knives form cutting edges.

I designates a ring having two elongated slots I' at positions diametrically opposite corresponding with the slots g' in the flange g . Rods I^2 pass through the apertures I^4 in the ring I , and nuts I^5 are mounted upon the threaded ends of said rods. K designates a hollow ring, to which the other ends of said rods are fastened, and a spring K' is mounted upon each rod I^2 and bears between the two rings I and K for the purpose of holding said rings normally at their farthest positions from each other.

K^2 designates fingers which are fastened to the inner face of the ring K at positions diametrically opposite each other and are adapted to register with the slots I' and g' , and each of said fingers has an inclined edge K^5 , the two edges being inclined, one on a reverse edge from the other, and are designed to contact, respectively, against the outer edges of the cutting-knives H and H' as pressure is imparted to the ring K by an advancing ear of corn.

Fixed to a shaft L , which is journaled in suitable bearings in the frame of the apparatus, is a rubber-covered wheel L' , which is positioned underneath the circular cutting-knife D^v and spaced apart therefrom. A suitable sprocket-chain L^x , passing over sprocket-wheels L^2 upon the shaft L and sprocket-wheel L^3 upon the shaft L^4 , transmits motion from the shaft L to the shaft L^4 , and the shaft L is driven by sprocket-wheel and chain connections with the shaft D^x . A rubber roller L^6 is fixed to the shaft L^4 and is provided for the purpose of feeding the ear of corn against a rubber roller M , which is fixed to a shaft M' , journaled in suitable bearings upon the frame of the apparatus and between the feeding-disks O . One end of the shaft

M' has a bevel-pinion M^2 , which is in mesh with a similar pinion M^3 upon the shaft M^4 , and a sprocket-wheel M^5 is fixed to the shaft M^4 and has a sprocket-chain M^6 , which passes over a sprocket-wheel M^7 upon the shaft at the outer end of the conveyer C . N and N' designate rubber rollers which are also fixed to rotate with the shaft M' and spaced apart, as shown.

$O O$ designate yielding section-disks which are fixed to the shaft O' , and P designates a concaved brush to the lower end of a shaft P' , which is journaled in a pivotal angled bracket-arm P^2 , mounted upon the frame of the apparatus, a detail view of said mechanism being illustrated in Fig. 6 of the drawings, in which it will be observed that there are two of the concaved brushes P , mounted upon vertical axes, and a spring P^3 connects the pivotal bracket-arms and is provided for the purpose of allowing the brushes to yield slightly to allow ears of different sizes to pass between said brushes. A bevel-pinion P^4 is fixed to the upper end of each shaft P' and is in mesh with a similar bevel-pinion P^5 , fixed to a shaft P^6 . The spaces between the teeth of the bevel-pinions P^4 and P^5 are of sufficient width to allow slight play, whereby the brushes upon the shaft P' may move slightly away from or toward each other.

Q designates a drag-brush which is mounted upon a yielding arm Q' and is provided for the purpose of holding the ear while it passes between the brushes P .

Q^2 designates a wheel having a rubber periphery and fixed to rotate with a shaft Q^3 , journaled in the frame of the apparatus and provided for the purpose of advancing the ear of corn between the rotary brushes P . The rotary brushes, traveling at a slower speed than the rubber-covered wheels which drive the ears, will cause the silk or husks to be brushed from the cob as the latter advances through the apparatus.

R designates a disk made up of yielding sections similar to the disk O , referred to, and is provided to advance the ear of corn to the rubber-covered wheel R' , which is mounted upon a shaft R^2 , and $S S$ designate concaved brushes which are similar to the brushes P and are mounted in the same manner upon shafts S' , driven by the gear connections shown in Fig. 1 of the drawings.

$T T$ designate the yielding sectional disks fixed to the shaft F^{10} , and two of said yielding sectional disks, which are positioned parallel to each other and between which the ears of corn pass, are designed to force the ear between the rollers $W W$, which are provided for the purpose of removing any silk from the cob which might escape being removed by the other brushes as the ear passes through the machine.

In operation the ears of corn are fed upon the hopper or shaker, and motion being im-

parted to the apparatus the vibration of the shaker will cause the heavy end of the ear to advance foremost, and being fed forward upon the endless conveyer the ears are first
 5 caught between the disk E³ and a roller upon the shaft at the inner end of the conveyer. As the butt-end of the ear comes in contact with the circular knife mounted upon the shaft D^x the inner faces of the sections of the
 10 feeding-disks upon either side of the circular knife will frictionally engage the ear, and as the ear is fed between the two circular cutting-knives D^y and E it will be noted that the knives will cut into the ear and slit the husks
 15 along diametrically opposite portions of the ear. The butt-end of the ear being fed by the sections of the disk into the opening of the ring K and pressure coming against said ring will cause the fingers with inclined edges
 20 to pass through registering apertures in the rings I and g, and as said inclined edges come against the outer edges of the curved knives the latter will be thrown toward each other and quickly sever the butt-end of the ear and
 25 also loosen the husks from the ear. This mechanism for actuating the knives is so adjusted that the butt-end of the ear will be cut off without retarding the movement of the ear, as its opposite end is carried downward
 30 by frictional contact of the same with the feeding-disks D. The ear of corn being fed down by said disks over the rubber-covered rollers L¹ and L³ will be caught by the disks O and held against the rubber rollers M, which
 35 are arranged in pairs, with slight spaces intervening, and the ears passing between the disks O are forced under the drag-brush Q. The ear of corn passing underneath said drag-brush is held by the feeding-disks R against
 40 the rapidly-rotating roller N, thence underneath a drag-brush X, mounted upon a yielding arm X', and passed between the rotary brushes S, and, finally, passed between the rollers W by means of the disks T, by which
 45 mechanism the husks and the silk will have been thoroughly removed from the kernels of corn upon the cob.

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

1. A corn-husker and silk-remover comprising a frame, endless conveyers, means for allowing the inner portions of the latter to yield, means for feeding the butt-ends of ears
 55 foremost upon said conveyers, feeding-disks, circular knives for cutting the husks longitudinally as they are fed between said disks, and means for cutting off the butt-end of the ear as it is held by said feeding-disks, as set
 60 forth.

2. A corn-husker and silk-remover comprising a frame, endless conveyers, means for allowing the inner portions of the latter to yield, means for feeding the butt-ends of ears
 65 foremost upon said conveyers, feeding-disks,

circular knives for cutting the husks longitudinally as they are fed between said disks, means for cutting off the butt-end of the ear as it is held by said feeding-disks, mechanism for reversing the ear after the butt-end
 70 has been severed and feeding the same forward through the apparatus, and mechanism for removing the loosened husks and silk, as set forth.

3. A corn-husker and silk-remover comprising a frame, endless conveyers, means for allowing the inner portions of the latter to yield, means for feeding the butt-ends of ears
 75 foremost upon said conveyers, feeding-disks, circular knives for cutting the husks longitudinally as they are fed between said disks, a rotatable shell, spring-actuated pivoted
 80 knives carried thereby, longitudinally-movable fingers for tilting said knives as they rotate, said fingers being actuated by an ear as it is fed forward by said disks, and mechanism
 85 for removing the husks and silk from the ear after the butt-end has been cut therefrom, as set forth.

4. A corn-husker and silk-remover comprising a frame, endless conveyers, means for allowing the inner portions of the latter to yield, means for feeding the butt-ends of ears
 90 foremost upon said conveyers, feeding-disks, circular knives for cutting the husks longitudinally as they are fed between said disks, a rotatable shell, spring-actuated pivotal
 95 knives carried thereby, a spring-actuated ring supported by said shell, fingers secured to said ring and adapted to actuate said knives as an ear comes in contact with the
 100 ring, and mechanism for removing the husks and silk after the butt-end has been cut from an ear of corn, as set forth.

5. A corn-husker and silk-remover comprising a frame, endless conveyers, means for allowing the inner portions of the latter to yield, means for feeding the butt-ends of ears
 105 foremost upon said conveyers, feeding-disks, circular knives for cutting the husks longitudinally as they are fed between said disks, a rotatable shell, spring-actuated pivoted
 110 knives carried thereby, a spring-actuated ring supported by said shell, fingers secured to said ring and having inclined edges which are adapted to contact with the outer edges
 115 of said fingers, whereby the end of an ear may be cut, and mechanism for removing the husks and silk from the ears, as set forth.

6. A corn-husker and silk-remover comprising a frame, endless conveyers, means for allowing the inner portions of the latter to yield, means for feeding the butt-ends of ears
 120 foremost upon said conveyers, feeding-disks, circular knives for cutting the husks longitudinally as they are fed between said disks, a rotatable shell, spring-actuated pivoted
 125 knives carried thereby, a spring-actuated ring supported by said shell, said shell having slots formed therein, fingers upon said ring
 130

adapted to move through said slots and contact with said knives for throwing the same toward each other as an ear of corn is fed into the ring, and mechanism for removing the husks and silk from the ears, as set forth.

5 7. A corn-husker and silk-remover comprising a frame, endless conveyers, means for allowing the inner portions of the latter to yield, means for feeding the butt-ends of
10 ears foremost upon said conveyers, feeding-disks, circular knives for cutting the husks longitudinally as they are fed between said disks, feeding-disks arranged in pairs, rubber-covered wheels intermediate said disks,
15 rotatable concaved brushes, and pivotal bearings in which the shafts of said brushes are mounted and between which brushes the ears of corn are fed by said disks, as set forth.

20 8. A corn-husker and silk-remover comprising a frame, endless conveyers, means for allowing the inner portions of the latter to yield, means for feeding the butt-ends of ears foremost upon said conveyers, feeding-disks, circular knives for cutting the husks longi-
25 tudinally as they are fed between said disks, feeding-disks arranged in pairs, rubber-covered wheels intermediate said disks, rotatable concaved brushes, and pivoted bearings in which the shafts of said brushes are
30 mounted and between which brushes the ears of corn are fed by said disks, drag-brushes, and flexible arms upon which the

same are mounted and under which the ears are adapted to be fed by said disks, as set forth.

35 9. A corn-husker and silk-remover comprising a frame, endless conveyers, means for allowing the inner portions of the latter to yield, means for feeding the butt-ends of ears foremost upon said conveyers, feeding-disks, 40 circular knives positioned intermediate said disks, means for cutting the butt-ends of the ears as they are fed by said disks and the husks slitted longitudinally by said knives, and means for removing the husks and silk 45 after the butts of the ears have been cut off, as set forth.

10. A corn-husker and silk-remover comprising a frame, a shaker set at an inclination and adapted to feed ears butt foremost 50 into the apparatus, an endless conveyor upon which the ears are fed, disks for feeding said ears forward from the conveyers, circular knives intermediate said disks, means for cutting the butt-ends of the ears while the 55 latter are held by said feeding-disks, and mechanism for removing the husks and silk after the butts have been cut off, as set forth.

In testimony whereof I hereunto affix my signature in the presence of two witnesses. 60

HEMEN C. CHAPMAN.

Witnesses:

ELMER J. KEECH,
CHARLES A. JEWELL.