(No Model.)

R. E. POINDEXTER.

CORN SPLITTING MACHINE.

No. 429,794. Patented June 10, 1890.

Fig. 1.

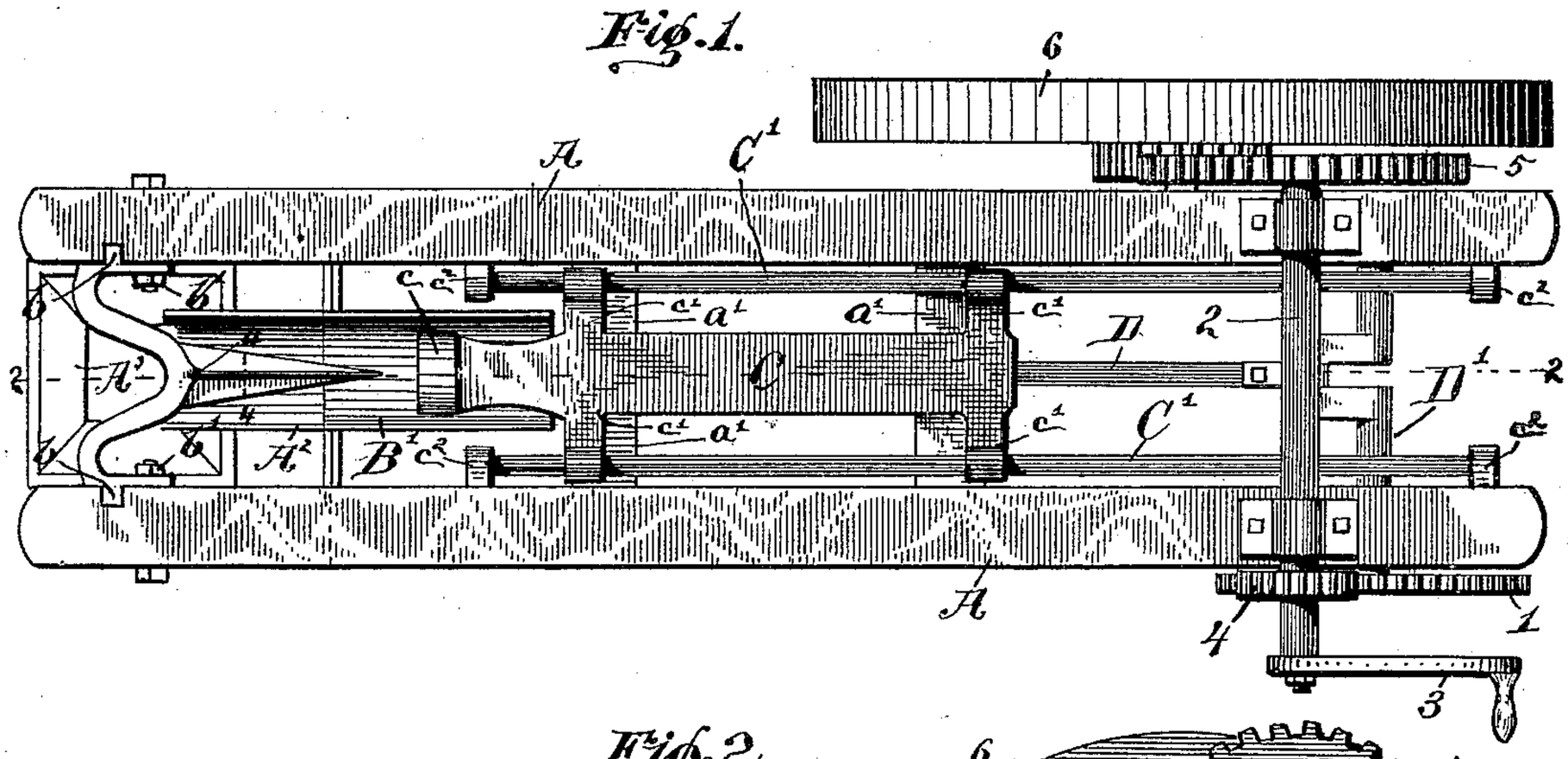


Fig. 2.

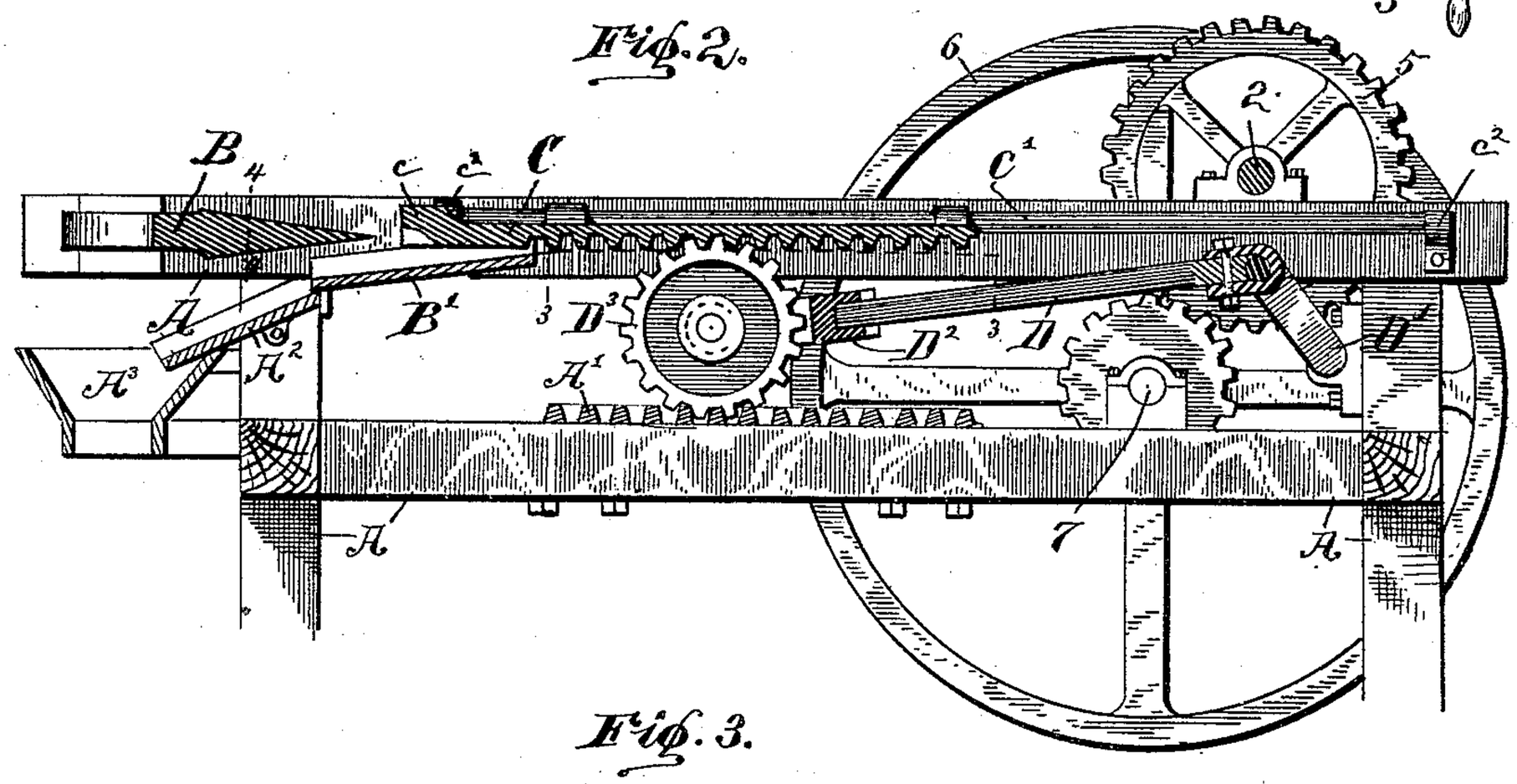


Fig. 3.

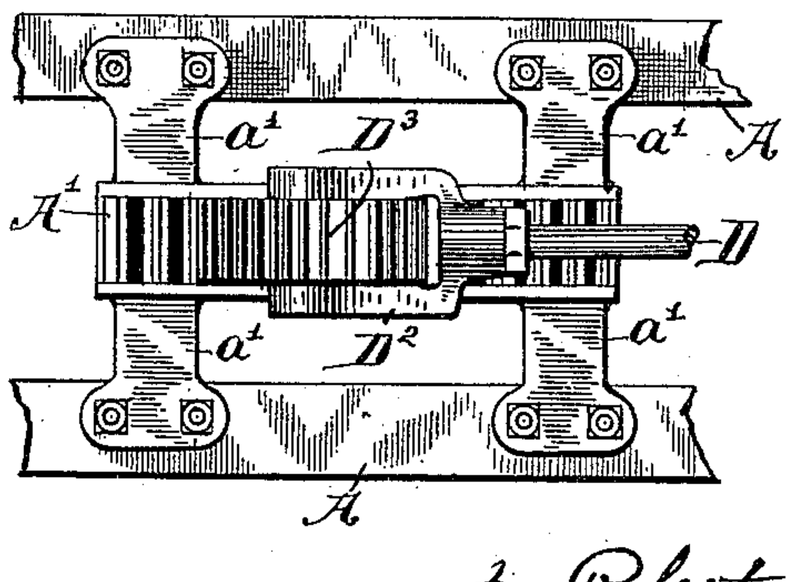
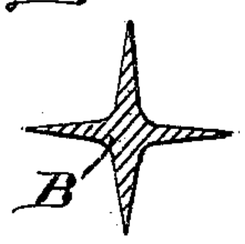


Fig. 4.



WITNESSES.

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UNITED STATES PATENT OFFICE.

ROBERT E. POINDEXTER, OF INDIANAPOLIS, INDIANA.

CORN-SPLITTING MACHINE.

SPECIFICATION forming part of Letters Patent No. 429,794, dated June 10, 1890.

Application filed April 2, 1889. Serial No. 305,670. (No model.)

To all whom it may concern:

Be it known that I, ROBERT E. POINDEXTER, a citizen of the United States, residing at Indianapolis, in the county of Marion and State of Indiana, have invented certain new and useful Improvements in Corn-Splitting Machines, of which the following is a specification.

The object of my said invention is to provide a machine for splitting ears of corn longitudinally into strips of a size suitable to feed to live stock, which shall be simple in construction and positive and rapid in operation, as will be hereinafter more fully described.

Referring to the accompanying drawings, which are made a part hereof, and on which similar letters of reference indicate similar parts, Figure 1 is a top or plan view of a machine embodying my said invention; Fig. 2, a central longitudinal section through the same on the dotted line 2 2; Fig. 3, a detail view showing a portion of the machine in top plan, as seen when looking downwardly from the dotted line 3 3 in Fig. 2; and Fig. 4, a detail cross-section through the splitting device, on an enlarged scale, on the dotted line 4 4.

In said drawings the portions marked A represent the frame of the machine; B, the splitting device or barb; C, a plunger for forcing the ears against said barb; D, a pitman for driving said plunger, and the numerals 1, 2, 3, 4, 5, 6, and 7 the different parts of the driving mechanism.

The frame A is or may be any suitable frame for supporting the operating mechanism firmly, and is provided with the necessary bearings and supports for the different parts of said mechanism, as will be presently described.

The splitting device or barb B consists of a tapering pointed spear having sharp knives or wings extending longitudinally thereof and widening from the point toward the rear of the device. These knives or wings are usually formed, as shown, one on each of the four sides of the spear, but may be of any number desired distributed around the central spear, so as to split or slit the ear into strips of the desired size, said knives or wings being formed with sharp edges, so that each will operate to cut into and split said ear through the place where it is brought in contact therewith. It is mounted on a base which is formed to fit between the side pieces of the frame A, where it is secured by vertical tongues *b*, formed on the faces of said base, which fit into vertical grooves in the frame, and the bolts *b'* extending through the frame and portions of said base, thus securing it rigidly in position. Immediately beneath the point of said splitting device and a short distance therefrom is located a trough or receptacle B' for receiving and supporting the ears of corn in position to be operated upon.

The plunger C is a straight bar formed with a head *c*, arranged to force the ear forward against the splitting device, and is provided with laterally-projecting arms *c'*, formed with eyes on their outer ends, through which rods C' are inserted, which rods are secured rigidly one to each side of the frame by the brackets c^2, and thus form slides on which said plunger is supported and runs. The under face of said plunger is of a rack formation, as shown, and a rack A' of a corresponding length is secured to the frame a short distance below by means of side wings or arms *a'*, which extend out and are securely bolted to said frame. Said rack A' is formed open—*i. e.*, it consists of two solid side pieces connected by cross-bars of a suitable formation and arrangement to serve as cogs—and thus any kernels of corn which drop into said rack are permitted to fall through without interfering with the operation of the mechanism or becoming crushed, and the side pieces form a track, between which the driving-pinion is confined in its travel back and forth.

The pitman D is an ordinary pitman connected to a crank-shaft D', which shaft is journaled in suitable bearings on the frame A, one of its ends projecting through its bearing and having the gear-wheel 1 mounted thereon. On the front end of said pitman is secured a yoke D^2, between the ends of which is journaled a pinion D^3, which is adapted to fit closely and run between the rack on the under face of the plunger C and the stationary rack A' on the frame.

The preferable driving mechanism shown consists of a main shaft 2, which is driven by

hand through a crank 3, or if it is desired to drive it by power a suitable power-wheel is substituted for said crank. On said shaft 2 is a small gear-wheel 4, arranged to mesh with the wheel 1 on the crank-shaft, and a large gear-wheel 5 on the opposite end, arranged to mesh with a small spur-pinion on the side of the fly-wheel 6, which fly-wheel is journaled on the stud-shaft 7, secured in a suitable bearing on the frame A. This arrangement of gearing is deemed very desirable for the reason that it secures great power and the desired speed; but of course other systems could be substituted without departing from my invention.

The operation of my said invention is as follows: The ear of corn to be split is placed in the receptacle B′, which is preferably set to incline downwardly toward the splitting device, as shown, with its large end toward the point of said splitting device, thus presenting the ear thereto in substantially a parallel line therewith. The machine being in operation, the plunger then strikes the opposite end of the ear and drives it onto the device B, the tapering formation of the device and the sharp-edged knives or wings operating to slit and divide said ear into a number of equal parts longitudinally, which parts fall into the chute A^2 and run through the hopper A^3 into a suitable receptacle placed beneath. By reason of the peculiar arrangement of driving mechanism, consisting of the sliding rack, the stationary rack, and the intermediate driving-pinion, a stroke is given to the plunger C equal to twice the length of the stroke of the pitman, for as the pinion D^3 travels forward over the rack A′ it moves the rack above its full length beyond its movement on said stationary rack, thus enabling a very rapid movement to be secured with but a comparatively short movement of the mechanism.

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

1. The combination, in a machine for splitting ears of corn, of the stationary splitting device, the trough for supporting the ear, arranged under said splitting device, and a plunger for driving the ear forward onto said splitting device, with the mechanism, substantially as described, for operating it.

2. In a machine for splitting ears of corn, the combination of the frame, the splitting device consisting of a fixed pointed spear with sharp-edged tapering knives or wings, a trough to receive and support the ear of corn to be split, arranged under said spear, and a reciprocating plunger for driving said ear forward against said spear, and mechanism, substantially as described, for operating it.

3. The combination, in a machine for splitting ears of corn, of the splitting device, the trough for supporting the ear, the plunger for driving the ear forward, having a rack formed thereon, a stationary rack secured to the frame-work, a driving-pinion interposed between said racks, and a pitman and other driving mechanism for operating said pinion back and forth, substantially as set forth.

4. The combination of the frame A, having the open stationary rack A′ secured thereon, the splitting device B, the trough B′, the plunger C, having a rack formed on its under side, the pinion D^3, interposed between said rack and the rack A′ on the frame, and the mechanism described for driving the same, substantially as set forth.

In witness whereof I have hereunto set my hand and seal, at Indianapolis, Indiana, this 29th day of March, A. D. 1889.

ROBERT E. POINDEXTER. [L. S.]

Witnesses:
E. W. BRADFORD,
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