No. 834,767. PATENTED OCT. 30, 1906.

W. SMOLLEY.

CORN HARVESTING MACHINE.

APPLICATION FILED NOV. 25, 1905.

2 SHEETS—SHEET 1.

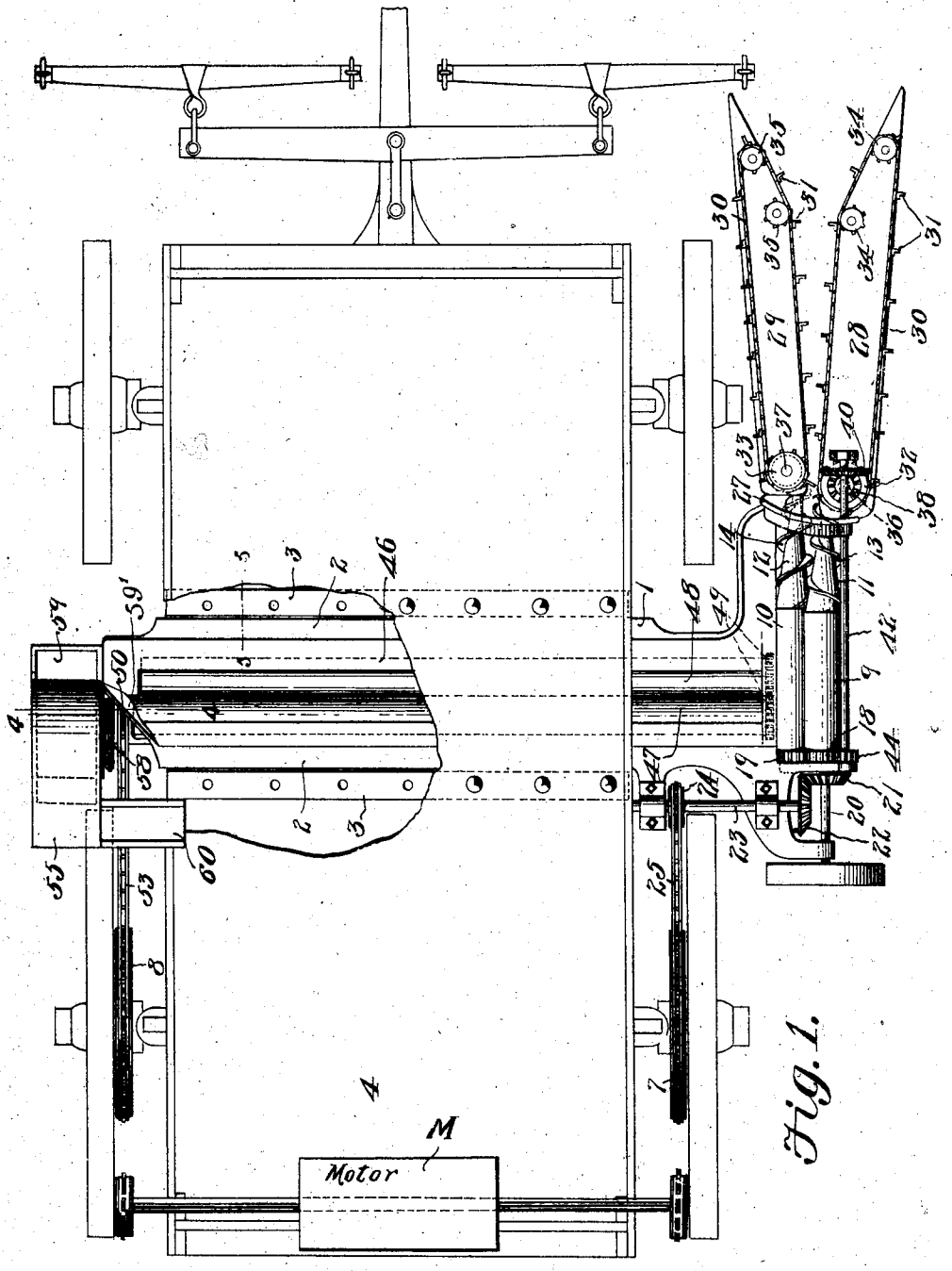

Fig. 1.

WITNESSES:

E. F. Stewart

Wm. Bagger

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By C. A. Snow & Co.

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2 SHEETS—SHEET 2.

Fig. 2.

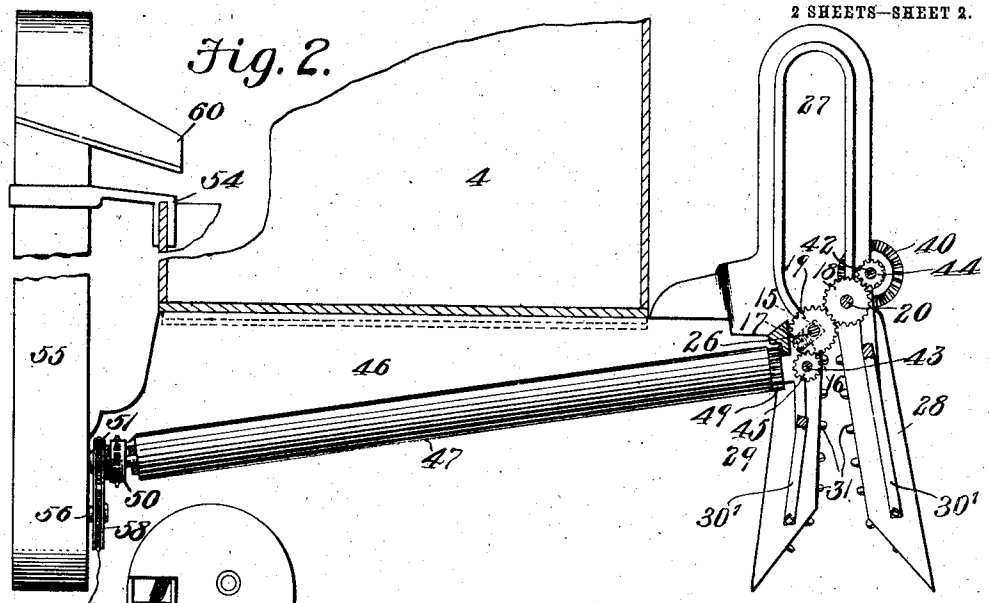

Fig. 3.

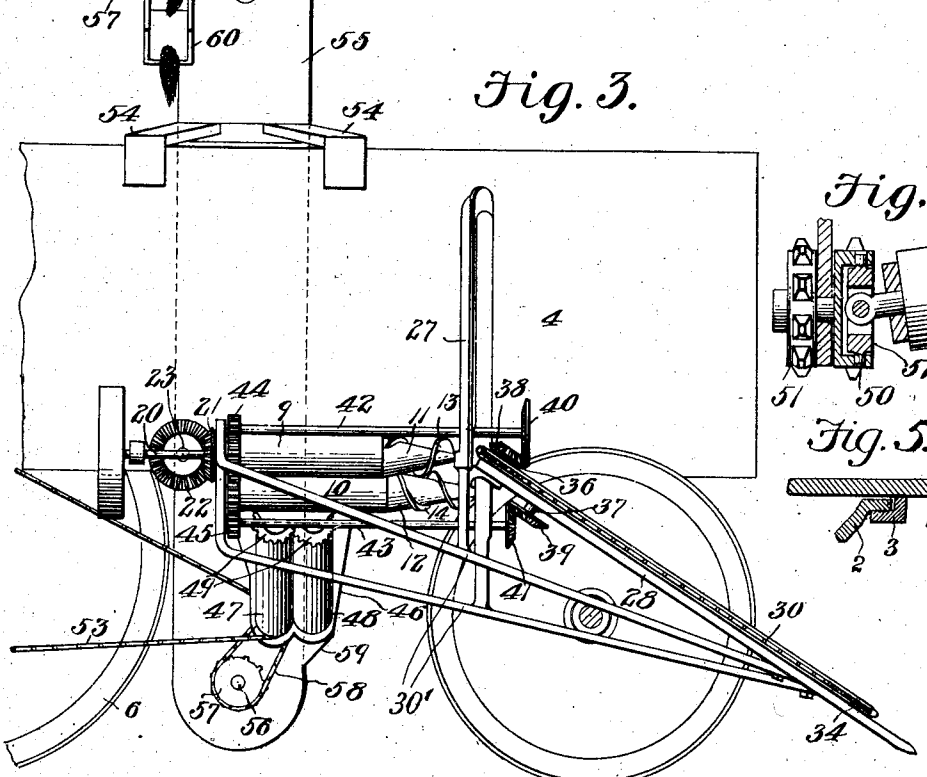

Fig. 4.

Fig. 5.

WITNESSES:

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Wayne Smolley, INVENTOR.

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UNITED STATES PATENT OFFICE.

WAYNE SMOLLEY, OF BROOKVILLE, INDIANA.

CORN-HARVESTING MACHINE.

No. 834,767. Specification of Letters Patent. Patented Oct. 30, 1906.

Application filed November 25, 1905. Serial No. 289,084.

To all whom it may concern:

Be it known that I, WAYNE SMOLLEY, a citizen of the United States, residing at Brookville, in the county of Franklin and State of Indiana, have invented a new and useful Corn-Harvesting Machine, of which the following is a specification.

This invention relates to that class of corn-harvesters which are equipped with means for snapping or detaching the ears of corn from the stalks standing in the field and with means for stripping or removing the husks from the ears; and the object of the present invention is to construct a simple and efficient machine of this class which may be mounted for operation upon the box or body of an ordinary farm-wagon, together with an elevating device whereby the husked ears of corn will be automatically loaded into the said box or wagon-body.

Among the objects of the present invention are to present a simple and efficient device for the purposes indicated, motive power for the moving parts of which shall be supplied from the running-gear of the wagon upon which the device is mounted for operation.

Other objects of the invention are to simplify and improve the general construction and operation of the device.

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 made when desired.

In the drawings, Figure 1 is a top plan view of a machine constructed in accordance with the principles of the invention, the machine being illustrated as mounted for operation upon an ordinary farm-wagon a portion of the body of which has been broken away. Fig. 2 is a rear elevation of the machine mounted in position for operation upon a wagon-box, the latter being shown in section. Fig. 3 is a side elevation showing the machine mounted for operation. Fig. 4 is a sectional detail view taken on the plane indicated by the line 4 4 in Fig. 1. Fig. 5 is a sectional detail view taken on the plane indicated by the line 5 5 in Fig. 1.

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

In the construction of the improved machine there is included a bed-plate or frame 1, having parallel side edges 2 2, which are in the nature of flanges that are adapted to engage supporting-cleats 3 3 upon the under side of a wagon box or body 4, where said cleats are permanently secured, extending transversely beneath the bottom of such wagon box or body. It is the intention in practice to transfer the harvesting-machine from one wagon-box to another, so that when a load has been accumulated the harvesting-machine will simply be detached from the wagon-box which has been filled to the empty box of another wagon. The hind wheels 5 6 of the wagon or wagons used in connection with the machine are also to be provided with sprocket-wheels 7 8, from which the moving parts of the machine may be driven, as will be presently more fully described.

The bed-plate or frame 1 is provided at one end with bearings for a pair of snapping-rolls 9 and 10, which, according to their position with relation to the body of the frame or bed-plate, will be described as the outer and inner rolls, respectively. The snapping-rolls have cylindrical bodies and tapering or conical points 11 12, provided with spiral threads or flanges 13 14, wound in opposite directions upon the conical points and serving, when the rollers are rotated upon their axes, to move material entering between the points in a rearward direction, as will be readily understood. The outer roll 9 is supported with its axis in a plane somewhat above the axis of the inner roll, and the shaft carrying the inner roll is preferably mounted in boxes, as 15, slidable in slots, as 16, in the frame and forced in the direction of the outer roll by means of suitably-disposed springs, as 17, thus holding the inner roll 10 yieldingly in contact with the outer roll 9 and permitting it to recede from said outer roll when material, such as cornstalks, is passing between the rolls.

The shafts of the rolls 9 and 10 are provided at their rear ends with intermeshing gears or pinions 18 19, whereby said rolls will be caused to rotate in unison in the di-

rection of each other. The shaft 20 of the outer roll 9 also carries a bevel-gear 21, meshing with a bevel-gear 22 upon a shaft 23, supported for rotation upon the bed-plate, and carrying a sprocket-pinion 24, adapted to be connected by a link belt 25 with the sprocket-wheel 7 upon the near hind wheel 5 of the wagon upon which the machine is mounted for operation.

The bearings for the forward ends of the shafts 20 and 26 of the rolls 9 and 10 are formed in the two arms of a yoke 27, which is integral with or which constitutes a part of the frame of the device, the front ends of the rolls being thereby spaced for the admission between them of the cornstalks that are to be operated upon. Firmly connected with the arms of the yoke are the downwardly and forwardly extending and diverging guide-boards or gathering-boards 28 29, which are reinforced by braces 30′ and between which the cornstalks are guided to the snapping-rolls. These guide-boards or gathering-boards support the gathering-chains 30, the links of which are provided at intervals with stalk-engaging fingers 31, said gathering-chains being guided over driven sprocket-wheels 32 and 33 and over idlers, as 34 and 35, upon the respective gathering-boards. The sprocket-wheels 32 and 33 are supported, respectively, upon shafts or stubs 36 and 37, journaled in the gathering-boards and carrying bevel-pinions 38 and 39, meshing with bevel-pinions 40 and 41 upon suitably-supported shafts 42 and 43, the rear ends of which are provided with pinions 44 and 45, meshing with the pinions 18 and 19 upon the rear ends of the roll-carrying shafts 20 and 26, respectively, from which motion will thus be transmitted to the gathering-chains when the machine is in operation.

The portion of the bed-plate or frame which extends transversely beneath the wagon-body supports an inclined trough 46, in which the husking-rolls 47 and 48 are supported for rotation in a slanting or inclined position, said husking-rolls being provided at their upper ends with intermeshing spur wheels or pinions 49, whereby they will be forced to rotate in unison. Upon the portion of the bed-plate or frame which supports the lower end of the trough 46 there are supported for rotation a pair of sprocket-wheels 50 51, having a common axis, the sprocket-wheel 50 being connected with the roller 47 by means of a knuckle-joint 52. Said sprocket-wheel 50 is driven by means of a link belt 53 from the sprocket-wheel 8 upon the hind wheel 6 of the wagon upon which the device is mounted.

Suitably supported upon the side of the wagon-box, as by means of hooks 54, is the casing 55 of an elevator, the lower driving-shaft of which, 56, has a sprocket-wheel 57 connected by a chain or link belt 58 with the sprocket-wheel 51, from which motion will thus be transmitted to the elevator. The latter is provided at its lower end with the receiving-spout 59 to receive the ears discharged over the lower ends of the husking-rolls, the ears being guided over a deflecting-board 59′. The upper end of the elevator-casing has a discharge-spout 60, over which the ears will be discharged into the wagon box or body.

As will be seen from the foregoing description, the improved machine may, by simply detaching the driving-chains 25 and 53, be detached from one wagon-box and applied to another by simply sliding the bed-plate or frame from the cleats 3 of one wagon-box and transferring it to the cleats of the other box, the elevator-casing being simply lifted from engagement with the side of the one box and transferred to the other, after which the driving-chains are adjusted. This change or transfer may be conveniently effected in a few moments' time, and the loaded wagon may be driven to the crib while the empty wagon is being loaded. The operation of the machine is simple and will be readily understood. As the machine advances the cornstalks are guided between the gathering boards and chains to the snapping-rolls, which serve to detach the ears from the stalks, which latter will be swiftly buckled down and out of the way between the snapping-rolls. Owing to the peculiar disposition of the latter with the outer roll in a plane above the plane of the inner roll, the ears will be naturally thrown in an inward direction and onto the husking-rolls, by the operation of which the husks are stripped from the ears, the latter being delivered at the lower ends of the husking-rolls to the elevator, whereby they are carried to the wagon-box.

The husking-rolls may be of any suitable well-known construction whereby they will operate efficiently to strip the husks from the ears.

If desired, a suitable motor, as shown at M in Fig. 1, such as a small gasolene-engine, may be provided to drive the snapping, husking, and elevating mechanism, and I reserve the right to use such separate motor in cases where it is found that the wagon-wheels do not furnish sufficient power.

Having thus described the invention, what is claimed is—

1. The combination with a wagon-box having cleats disposed transversely beneath its bottom, of a bed-plate or frame having cleat-engaging flanges, ear-detaching and husk-stripping means supported by said bed-plate, and an elevator-casing having hooks adapted for detachable engagement with one side of the wagon-box.

2. The combination with a wagon-box having transverse cleats on its under side, of a

bed-plate or frame having cleat-engaging flanges, an inclined trough supported by said frame and extending transversely beneath the wagon-box, husking-rolls in the bottom of said trough, and ear-snapping rolls supported by the frame adjacent to the upper end of the trough; the outer or distant snapping-roll being supported with its axis in a plane above the plane of the axis of the inner or near snapping-roll.

3. The combination with a wagon-box having transverse cleats on its under side, of a bed-plate frame having cleat-engaging flanges, an inclined trough supported by the frame and extending transversely beneath the wagon-box, husking-rolls supported for operation in the bottom of said inclined trough, ear-snapping rolls supported by the frame adjacent to the upper end of the trough and having spaced front ends, and stalk gathering and guiding means supported adjacent to the front ends of the snapping-rolls.

4. A wagon including a box having transverse cleats, in combination with a bed-plate or frame having cleat-engaging flanges, ear-snapping rolls supported at one end of said bed-plate and provided with intermeshing pinions, an inclined trough supported by the bed-plate in a position to extend transversely beneath the wagon-box, husking-rolls supported in said trough, means for transmitting motion to the snapping-rolls from one wheel of the wagon upon the box of which the bed-plate is mounted, and means for transmitting motion to the husking-rolls from one other wheel of such wagon.

5. A wagon-box having transverse cleats, in combination with a bed-plate or frame having cleat-engaging flanges, ear-snapping rolls supported at one end of said bed-plate and provided with intermeshing pinions, an inclined trough supported by the bed-plate in a position to extend transversely beneath the wagon-box, husking-rolls supported in said trough, an elevator-casing supported detachably upon the wagon-box adjacent to the lower end of the inclined trough and adapted to receive material discharged over the lower ends of the husking-rolls, means for transmitting motion to the snapping-rolls from one hind wheel of the wagon upon the box of which the bed-plate is mounted, and means for transmitting motion from the other hind wheel of such wagon to the husking-rolls and to the elevator.

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

WAYNE SMOLLEY.

Witnesses:
JOHN C. SHIRK,
GEO. E. DENNETT