

L. G. MATHEWS.

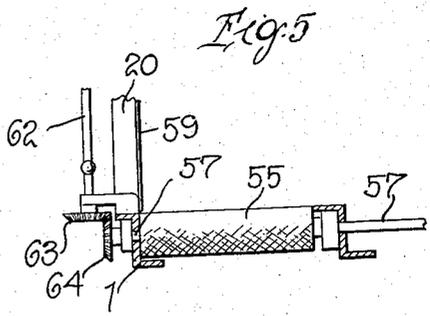
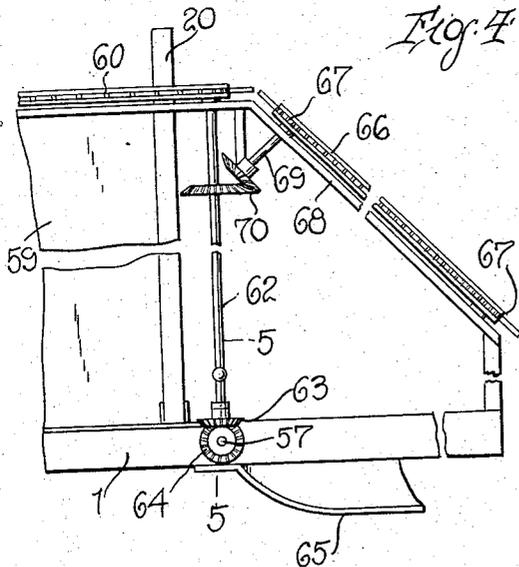
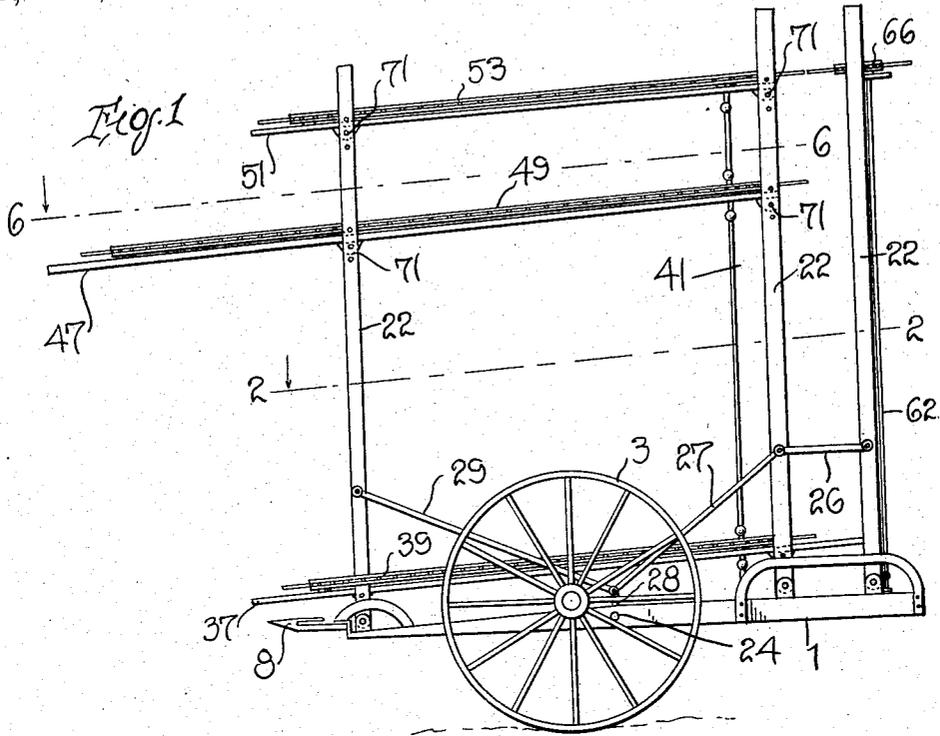
HARVESTER.

APPLICATION FILED JULY 25, 1914. RENEWED JULY 29, 1915.

Patented Dec. 7, 1915.

4 SHEETS—SHEET 1.

1,162,869.



Inventor

L. G. MATHEWS

Witnesses

Robert M. Sutphen.
A. J. Hind.

By

Watson E. Coleman
Attorney

L. G. MATHEWS.
HARVESTER.

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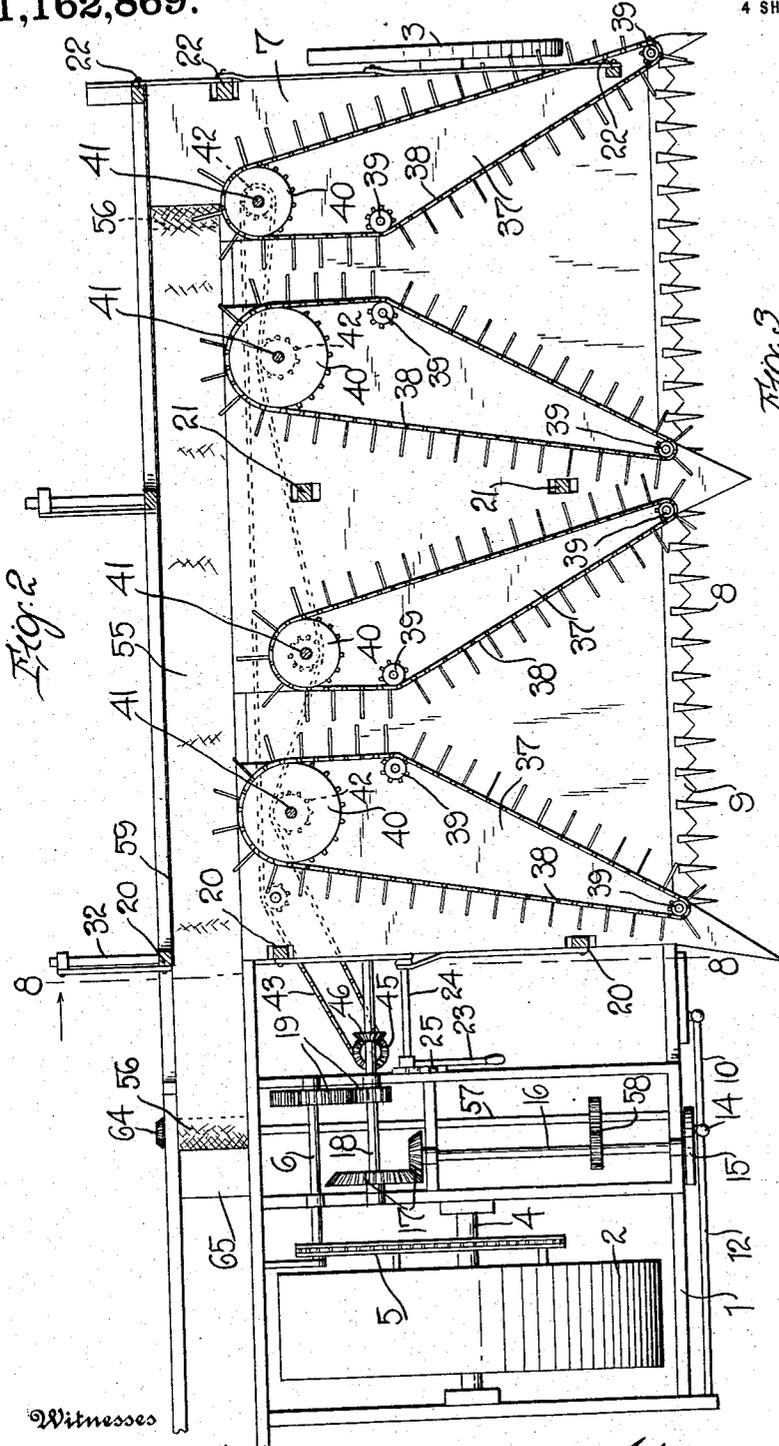


Fig. 2

Fig. 3

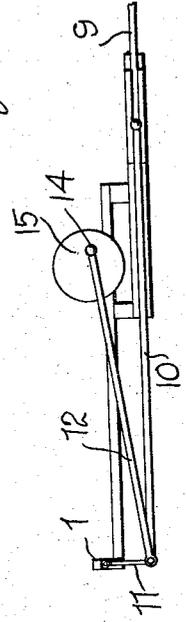
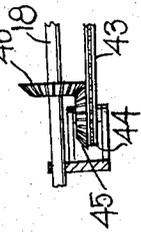


Fig. 4



Witnesses
Robert M. Sutphen.
A. J. King

By *Watson & Coleman*
Attorney

Inventor
L. G. MATHEWS

L. G. MATHEWS.
HARVESTER.

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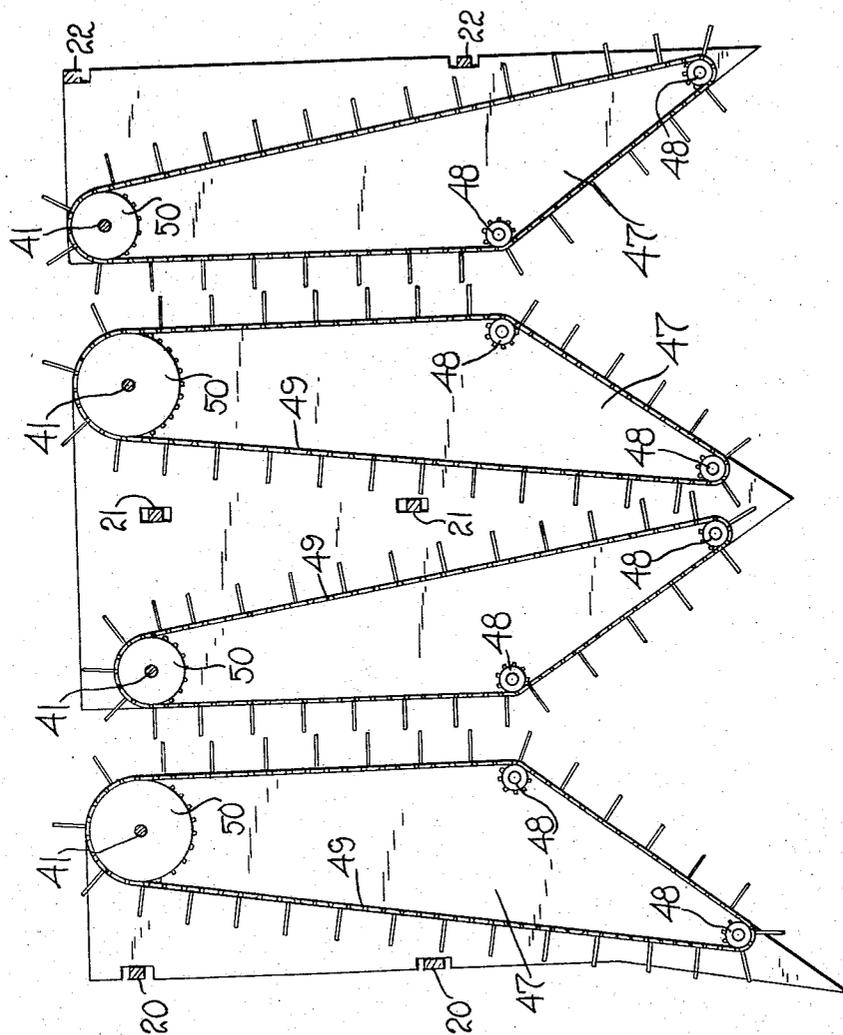


Fig. 6

Inventor

L. G. MATHEWS

Witnesses

Robert M. Sutphen.
A. J. Heid.

By

Watson E. Coleman
Attorney

L. G. MATHEWS.
HARVESTER.

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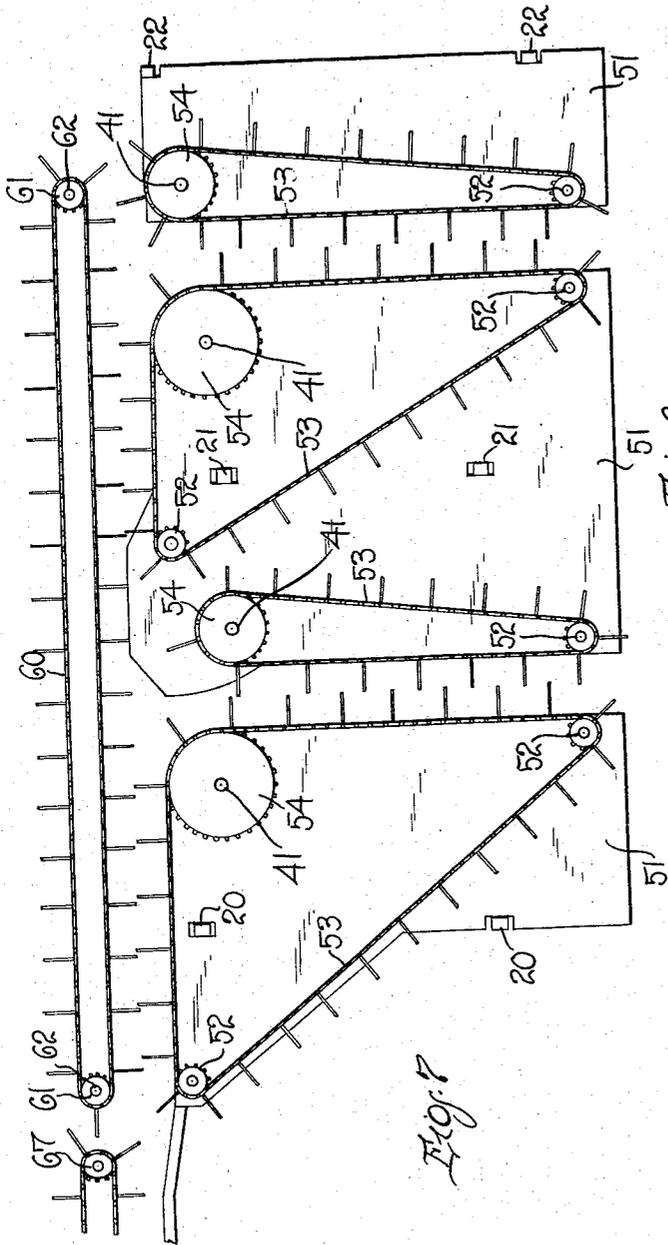


Fig. 7

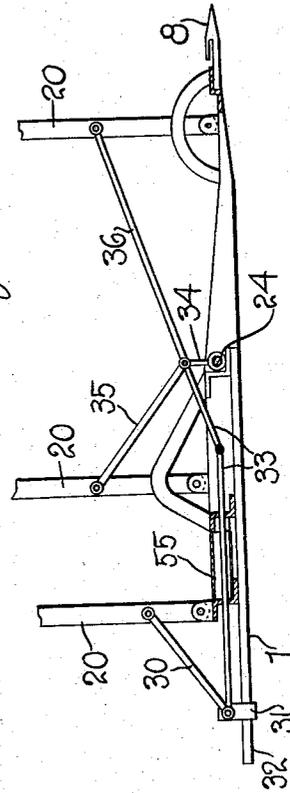


Fig. 8

Witnesses

Robert M. Sutphen.
A. L. Hind.

Inventor
L. G. MATHEWS

By *Watson E. Colman*
Attorney

UNITED STATES PATENT OFFICE.

LEE GRANGE MATHEWS, OF BRANDON, WISCONSIN.

HARVESTER.

1,162,869.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, LEE GRANGE MATHEWS, a citizen of the United States, residing at Brandon, in the county of Fond du Lac and State of Wisconsin, have invented certain new and useful Improvements in Harvesters, of which the following is a specification, reference being had to the accompanying drawings.

This invention relates to certain improvements in harvesters and has relation more particularly to a device of this general character especially designed and adapted for use for harvesting hemp; and an object of the invention is to provide a device of this general character having novel and improved means whereby the stalks, after being severed, are supported and conveyed in a standing position for a predetermined distance and spread upon the ground with the butt ends of the stalks pointing toward the standing grain.

It is also an object of the invention to provide a novel and improved device of this general character comprising gathering means projecting forwardly of the cutting mechanism and operating to bunch the upper portions of the standing grain before the same is severed by the cutting mechanism.

The invention consists in the details of construction and in the combination and arrangement of the several parts of my improved harvester whereby certain important advantages are attained and the device is rendered simpler, less expensive and otherwise more convenient and advantageous for use, all as will be hereinafter more fully set forth.

The novel features of the invention will be carefully defined in the appended claims.

In order that my invention may be the better understood, I will now proceed to describe the same with reference to the accompanying drawings, wherein—

Figure 1 is a side elevational view of a harvester constructed in accordance with an embodiment of my invention; Fig. 2 is a sectional view taken substantially on the line 2—2 of Fig. 1; Fig. 3 is a fragmentary front elevational view, illustrating the means, herein embodied, for imparting reciprocating movement to the sickle. Fig. 4 is a fragmentary rear elevational view, illustrating the means, herein embodied, for operating the belt and spreader chains included in the present embodiment of my invention; Fig. 5

is a sectional view taken substantially on the line 5—5 of Fig. 4; Fig. 6 is a sectional view taken substantially on the line 6—6 of Fig. 1, with certain of the parts omitted in order to clarify the disclosure; Fig. 7 is a fragmentary view in top plan of my device as herein disclosed, with parts omitted for purposes of distinctness; Fig. 8 is a sectional view taken substantially on the line 8—8 of Fig. 2; and Fig. 9 is an enlarged fragmentary detail view, illustrating the means for operating the driving chain.

As disclosed in the accompanying drawings, 1 denotes a frame of predetermined dimensions and configuration having operatively engaged therewith, the supporting wheels 2 and 3, the wheel 2 being herein set forth as the driving wheel and having the shaft 4 thereof operatively engaged, as indicated at 5, with the driving shaft 6 suitably supported by the frame 1.

The major portion of the frame 1 has secured thereto a platform 7 provided along its forward marginal portion with a conventional cutting mechanism including a guard 8 and the reciprocating sickle 9, said sickle being herein disclosed as having operatively engaged therewith an extremity of a pitman 10, the opposite extremity of which is pivotally engaged with the swinging arm 11 depending from the frame 1. Also pivotally engaged with the arm 11 is the pitman 12 which is operatively engaged with a wrist pin 14 projecting from the disk 15, herein disclosed as fixed to the forward extremity of the transverse shaft 16. The shaft 16 is operatively connected, as at 17, with the shaft 18 disposed longitudinally of the frame 1 and below the platform 7, for a purpose to be hereinafter more particularly referred to, and said shaft 18 is operatively connected, as at 19, with the shaft 6 whereby it will be readily perceived that the sickle 9 will be caused to reciprocate upon rotation of the wheel 5.

Pivotally engaged at their lower extremities with the frame 1 are the transverse aligned series of supporting rods 20, 21 and 22 maintained in adjusted position relative to the platform 7 by the lever 23 carried by the shaft 24 disposed longitudinally of the device below the platform 7, and such lever 23 is provided with a conventional latch co-acting with the rack 25. As herein embodied, the series of rods 20 and 22, respectively, are three in number and the rear rods

22 are connected at a predetermined point by the link 26 and the intermediate rod 22 is connected through the medium of an elongated link 27 with the upstanding rock arm 28 carried by the shaft 24, and also operatively engaged with the rock arm 28 is the elongated link 29 operatively engaged with the forward rod 22, as is believed to be clearly shown in Fig. 1.

For reasons which will be self-evident from the description hereinafter, the rear supporting rod 20 is operatively connected through the medium of the link 30 with the slide member 31 operatively engaged with the rearwardly disposed guide 32 carried by the frame 1, and said guide is in turn operatively engaged through the medium of the links 33 with the upstanding rock arm 34 carried by the shaft 24, while such rock arm 34 is operatively engaged with the intermediate rod 20 and forward rod 20 through the medium of the links 35 and 36, respectively. By this arrangement, it will be seen that upon proper manipulation of the lever 23, the rods 20 and 22 will be moved in unison and in the same general direction, and it will be further observed that this adjustment is for the purpose of maintaining the mechanism, hereinafter to be described, in a predetermined relation to the surface over which the machine is traveling. As the rods 21 are adapted to be operated in a manner similar to that set forth relative to the rods 20, it is not believed that an additional detailed description and illustration is necessary.

Supported by the forward rods 20, 21 and 22 are the plates 37 having the forward portion of their opposed edges disposed in diverging planes and such plates terminate slightly in advance of the cutting mechanism, as is believed to be clearly shown in Fig. 2, and are adapted to serve as guides for the butt ends of the stalks as the same are caused to move inwardly under the influence of the platform chains 38, herein disclosed as directed around the sprockets 39 and 40. The sprockets 40 are operatively connected with the vertically disposed flexible shafts 41 which depend below the platform 7 and have fixed to such lower extremities, the sprockets 42 operatively engaged by the drive chain 43 whereby said shafts are caused to rotate in the requisite relative directions. The drive chain 43 is disposed around the sprocket 44 operatively supported by the frame 1 and provided with a face gear 45 in mesh with a gear 46 carried by the shaft 18 whereby it will be readily perceived that the shafts 41 will be caused to rotate upon the travel of the machine.

At a predetermined distance above the plates 37 are adjustably connected with the forward rods 20, 21 and 22, the plates 47 projecting a predetermined distance in ad-

vance of the cutting mechanism and having the opposed edges of the projected portions arranged in diverging planes, as is believed to be particularly shown in Fig. 6, and said plates have mounted thereon the guide sprockets 48 around which are directed the gathering chains 49 which are also disposed around the sprockets 50 fixed to the flexible shafts 41 and from which sprockets 50 said gathering chains 49 are driven. By this arrangement, it will be perceived that the gathering chains 49 will bunch the tops of the stalks before the stalks are engaged by the cutting mechanism. At predetermined distances above the plates 47 are the plates 51 on which are operatively supported the sprockets 52 around which are disposed the conveyer chains 53 also directed around the sprockets 54 fixed to the flexible shafts 41 and whereby said chains 53 are driven. The chains 53 are disposed transversely above the platform 7 a distance substantially equal with that of the gathering chains 38 and serve to maintain the severed stalks in a vertical position especially during the period that the butt ends of the severed stalks are being bunched by the gathering chains 38.

As is believed to be self-evident, the chains 38, 49 and 53 carry the severed stalks rearwardly of the device and transversely of the platform 7 and deposit the same in a vertical position upon the endless conveyer 55, the upper stretch of which travels in a direction away from the standing grain and is disposed around the rollers 56 operatively supported by the frame 1 in a conventional manner, and the forward roller 56 is fixed to the shaft 57 disposed transversely of the frame 1 in close proximity to the shaft 16 and operatively engaged therewith, as indicated at 58, whereby the conveyer 55 is caused to properly travel. The rear rods 20, 21 and 22 have secured thereto the sheathing 59 intersecting the space directly behind the plates 37, 47 and 51.

In order to maintain the stalks in vertical position as carried by the conveyer 55, I have coacting with the rear longitudinally disposed portions of the chains 53 the back conveyer chain 60, herein disclosed as disposed around the sprockets 61 carried by the vertically disposed flexible shafts 62, one extremity of each of said shafts being mounted in the frame 1 while the upper extremity is operatively supported by a rear rod 20 or 22. The lower extremity of the shaft 62 is provided with a gear 63 in mesh with a gear 64 carried by the rear projected portion of the shaft 57, hereinbefore referred to. The vertical stalks as carried by the conveyer 55 are disposed upon the curved chute 65 whereby the butts of the stalks will be discharged upon the ground. As the stalks are delivered upon the chute

65, the tops thereof are engaged by the spreader chain 66 disposed around the sprockets 67 carried by the inner inclined arm 68. The upper sprocket 67 is mounted upon a shaft 69 operatively engaged, as at 70, with a shaft 62. It is thought to be obvious that the spreader chain 67 will serve to spread the stalks upon the ground with their butt ends pointing toward the standing grain. It is also to be observed that the plates 47 and 51 are adjustably connected, as indicated at 71, with the respective rods 20, 21 and 22 in order to compensate for the varying heights of the standing grain.

From the foregoing description, it is thought to be obvious that a harvester constructed in accordance with my invention is of an extremely simple and comparatively inexpensive nature and is particularly well adapted for use by reason of the convenience and facility with which it may be assembled, and it will also be obvious that my invention is susceptible of some change and modification without material departure from the principles and spirit thereof and for this reason I do not wish to be understood as limiting myself to the precise arrangement and formation of the several parts herein shown in carrying out my invention in practice.

I claim:

1. A device of the character described comprising a platform, cutting mechanism carried thereby, a conveyer supported by the platform and discharging at one end of the platform, means for engaging the severed stalks to convey the same across the platform to the conveyer, movable means engageable with the stalks when upon the conveyer for maintaining the stalks in a vertical position, and means engageable with the tops of the stalks when discharged from the conveyer for throwing the stalks upon the ground with the butt ends thereof disposed toward the standing grain, said last named means comprising an inclined arm, and a spreader chain disposed on an incline corresponding to the incline of the arm.

2. A device of the character described comprising a platform, cutting mechanism

carried thereby, means for conveying the severed stalks across the platform in a vertical position, means for conveying the severed stalks longitudinally of the platform in a vertical position, and movable means for delivering said severed stalks upon the ground to one side of the machine with the butt ends thereof disposed toward the standing grain, said last named means comprising an inclined arm, and a spreader chain disposed on an incline corresponding to the incline of the arm.

3. A device of the character described comprising a platform, cutting mechanism carried thereby, a conveyer supported by the platform and discharging at one end of the platform, means for engaging the severed stalks to convey the same across the platform to the conveyer, a chute projecting from the discharging end of the platform and upon which the conveyer discharges, and means engageable with the tops of the severed stalks as the same are delivered upon the chute for throwing the stalks upon the ground with the butt ends thereof disposed toward the standing grain.

4. A device of the character described comprising a platform, cutting mechanism carried thereby, a conveyer supported by the platform and discharging at one end of the platform, means for engaging the severed stalks to convey the same across the platform to the conveyer, a chute projecting from the discharging end of the platform and upon which the conveyer discharges, means engageable with the tops of the severed stalks as the same are delivered upon the chute for throwing the stalks upon the ground with the butt ends thereof disposed toward the standing grain, said last means comprising an inclined arm, and a spreader chain disposed on an incline corresponding to the incline of the arm.

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

LEE GRANGE MATHEWS.

Witnesses:

GEO. W. SCHWANDT,
F. R. SCHWANDT.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."