

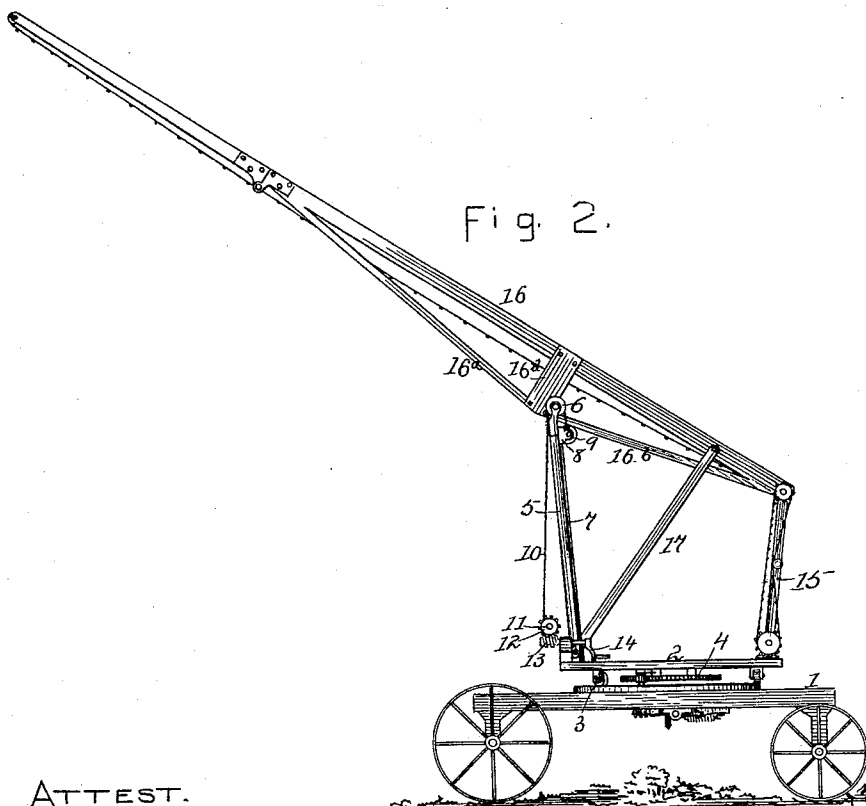
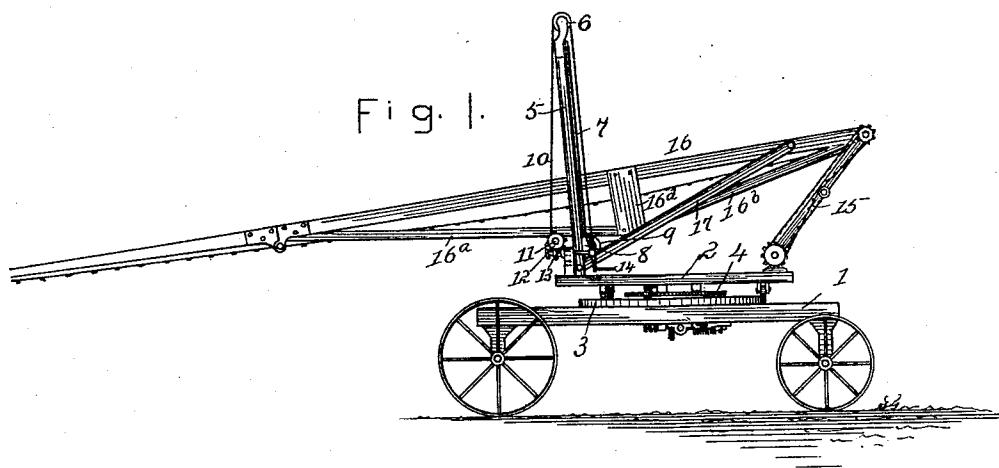
(No Model.)

2 Sheets—Sheet 1.

M. HEINEKE.
STRAW STACKER.

No. 484,427.

Patented Oct. 18, 1892.



ATTEST.

Helen Graham

William Graham

INVENTOR
MARTIN HEINEKE.
by his attorney
L. P. Graham

(No Model.)

2 Sheets—Sheet 2.

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Fig. 3.

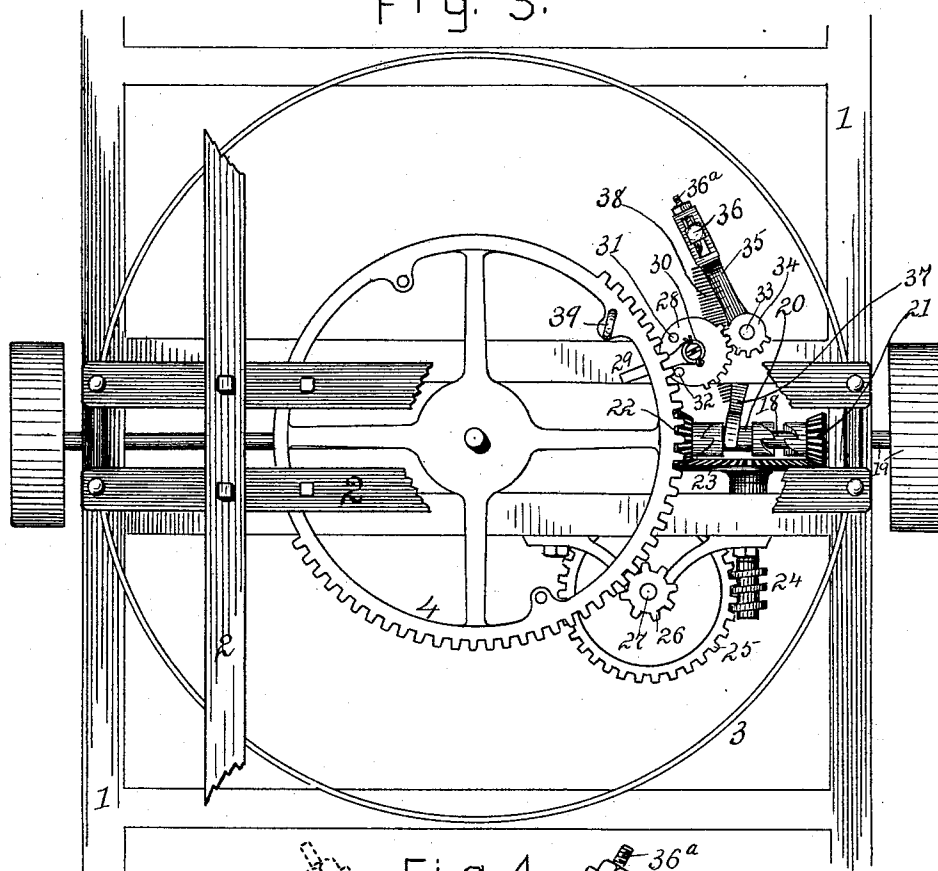
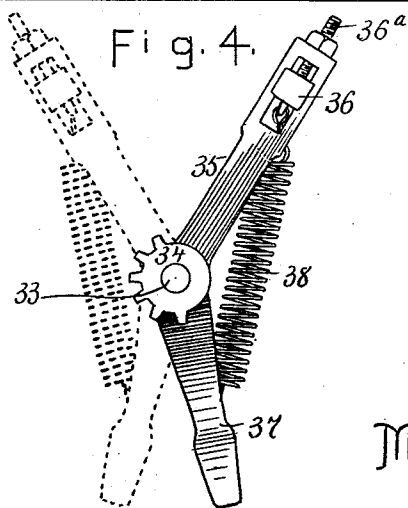


Fig. 4.



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UNITED STATES PATENT OFFICE.

MARTIN HEINEKE, OF SPRINGFIELD, ILLINOIS.

STRAW-STACKER.

SPECIFICATION forming part of Letters Patent No. 484,427, dated October 18, 1892.

Application filed October 8, 1891. Serial No. 408,090. (No model.)

To all whom it may concern:

Be it known that I, MARTIN HEINEKE, of Springfield, in the county of Sangamon and State of Illinois, have invented certain new and useful Improvements in Straw-Stackers, of which the following is a specification.

This invention relates to mechanism for giving the carrier-frame horizontal oscillation and depositing the straw in an arc of a circle.

It consists in the details of construction and combinations of parts hereinafter set forth and claimed.

In the drawings accompanying and forming a part of this specification, Figure 1 is a side elevation of a stacker embodying my invention, the straw-carrier frame being shown in its lowest position. Fig. 2 is a similar view with the carrier-frame elevated. Fig. 3 is a plan of the essential features of that part of my invention which relates to the oscillatory motion of the straw-carrier, less important features being broken away to make the exposure as complete as possible. Fig. 4 is a plan of certain details of the oscillating mechanism.

Frame 1 is mounted on wheels for convenient transportation, and is provided with circular track or way 3. Frame 2 is mounted on track 3 and has the partly-toothed wheel 4, concentric with such track. A standard 5 is supported from each rear corner of frame 2 and is provided each with a pulley 6 at its upper end. Ways 7 are secured to the front edges of the standards, and blocks 8, carrying rollers 9, are adapted to move vertically on the ways. Cables 10 connect with the blocks, run over pulleys 6, and are secured to shaft 11. A worm-wheel 12 is fixed on an end of the shaft. A worm 13 meshes with the worm-wheel, and crank 14 provides means for rotating the worm and so raising or lowering the blocks 8. Frame 15 is connected pivotally with the front end of frame 2 and with the front or lower end of the straw-carrier frame 16. The carrier-frame is trussed from below by means of bars 16^a and 16^b, together with king post or brace 16^d, and the bars, in addition to strengthening the frame, are of utility in the operation of raising and lowering the same. A pair of draw-bars 17 are placed on opposite sides of the carrier-frame

and are connected pivotally with such frame and with frame 2. The connection with frame 2 is at the base of standards 5, and the connection with the carrier-frame is somewhat to the rear of the pivotal conjunction of the carrier-frame with frame 15. As a result of this arrangement the carrier-frame cannot swing upward with frame 15 for a pivot without raising the swinging ends of the draw-bars and so compelling the forward end of the carrier to move rearwardly over the center of the supporting-platform and compensate for the change of weight on the rear end, which is caused by raising the carrier. In other words, the carrier as a whole is balanced with reasonable accuracy on the turn-table; but when the rear end of the carrier-frame is raised it of course swings toward the turn-table and disturbs the equipoise. This disturbance is compensated for or neutralized by the action of the draw-bars, which force the forward end of the carrier rearwardly as the rear end is raised. So, also, when the carrier-frame is lowered, as seen in Fig. 1, as soon as the descent of the rear end of the carrier is arrested the forward end is held against further descent by the draw-bars acting in conjunction with the relatively-oblique frame 15. In operating this part of the device the crank 14 is turned, thus elevating the blocks 8. The rollers 9 bear against bars 16^a and force the rear end of the carrier upward, with the result as to self-adjusting equipoise heretofore explained.

Referring to the oscillating mechanism, 18 is the main shaft, and 19 a drive-pulley therefor.

20 is a double or two-end clutch splined on the main shaft.

21 and 22 are pinions mounted loosely on the shaft on opposite sides of the clutch and having each a clutch member opposed to and adapted to mesh with the clutch aforesaid. 23 is a gear-wheel meshing with both pinions.

24 is a worm on the same shaft as the gear-wheel.

25 is a worm-wheel driven by the worm. 27 is the shaft of the worm-wheel, and 26 is a pinion on such shaft, meshing with wheel 4 of frame 2.

The mechanism just specified enables the

motion of the main shaft to be applied to the wheel of the oscillating frame, the direction of the motion depending on which pinion—21 or 22—the clutch engages. This is determined by mechanism automatically operated, which will now be explained and which comprises this feature of my invention:

Toothed wheel 28 is provided with a trip-finger 29, which extends inwardly beyond the periphery of wheel 4. A spring 30 tends to hold the finger in the position shown in Fig. 3, while permitting it to move in either direction. Pins 31 and 32 on wheel 28 are adapted to be alternately acted on by the finger, thus imparting the motion of the finger to the wheel. Pins, as 39, extend through lugs suitably placed on wheel 4 and at proper intervals trip the finger 29. Wheel 34 is fixed on shaft 33 and provided with teeth which mesh with the teeth of wheel 28. The diameter of wheel 34 is about one-half that of wheel 28, in order that a comparatively small motion of the trip-finger may move the wheel 34 a considerable distance on its pivot. Arm 35 is also fixed on shaft 33, and consequently partakes of the motion of wheel 34. It has a slotted head in which a hook-block 36 is adjusted with relation to the pivot by means of screw 36^a. A trip-lever 37 pivots loosely on shaft 33 and has a forked end which loosely engages an annular groove in the clutch 20. An extension-spring—i. e., a spring which tends to resist extension—connects with the hook of arm 35 and with the trip-lever 37, near the swinging end thereof, such spring being indicated by reference numeral 38. With the parts in the position shown in Fig. 3, the pin 39 will in time strike finger 29 and press it slowly to one side. The motion of the finger will be imparted through pin 32 to wheel 28 and indirectly to wheel 34 and arm 35. The motion of the arm increases the tension of spring 38, thus partly at least compensating for change of direction of strain on lever 37 and holding said lever in its shown position until the dead-center is reached, af-

ter passing which the spring will act quickly and forcibly on the arm and the lever, throwing them into the position shown in solid lines in Fig. 4 and causing the lever to shift the clutch. When this is done, the direction of the motion of wheel 4 is reversed and the trip-finger swings backward in contact with pin 31 and in position to be thrown in an opposite direction by a different pin in the wheel 4, so placed as to obtain the required degree of oscillation.

The hook-block 36 is adjustable, in order that the tension of the spring may be regulated, and the operation of the screw on the block in the process of adjustment is readily obvious.

I claim as new and desire to secure by Letters Patent—

1. A clutch-shifter for straw-stackers, consisting of arm 36, adapted to be moved at intervals by the rotating stacker, shifting-lever 37, pivoted independently on the fulcrum of the arm and normally forming an obtuse angle with such arm, and spring 38, connecting the arm and the lever, as set forth, whereby the shifting-lever remains stationary while the spring is put under extreme tension by the motion of the arm and is thrown solely by the action of the spring after the arm has passed the line of centers.

2. A clutch-shifter for straw-stackers, consisting in the combination of arm 35, fixed on shaft 33; wheel 34, also fixed on said shaft, lever 37, swung loosely on the shaft, spring 38, connecting the swinging end of the arm with the swinging end of the lever, wheel 28, larger than wheel 34 and in mesh therewith, and finger 29, adapted to actuate wheel 28, as set forth.

In testimony whereof I sign my name in the presence of two subscribing witnesses.

MARTIN HEINEKE.

Attest:

JOSEPH M. GROUT,
JAS. F. SATTLEY.