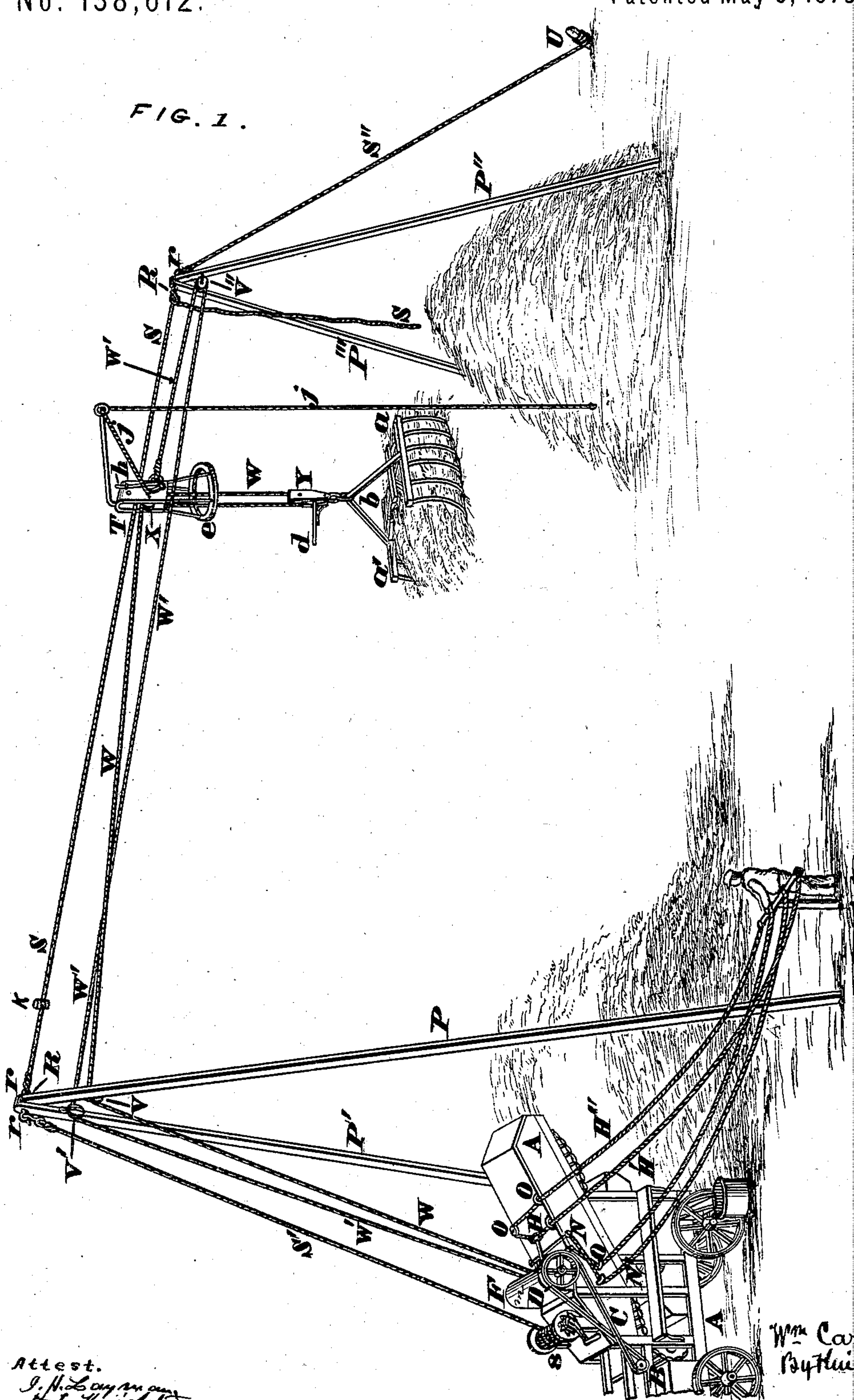


W. CARR.
Straw Stacking-Attachments for Thrashing-Machines.
 No. 138,612. Patented May 6, 1873.

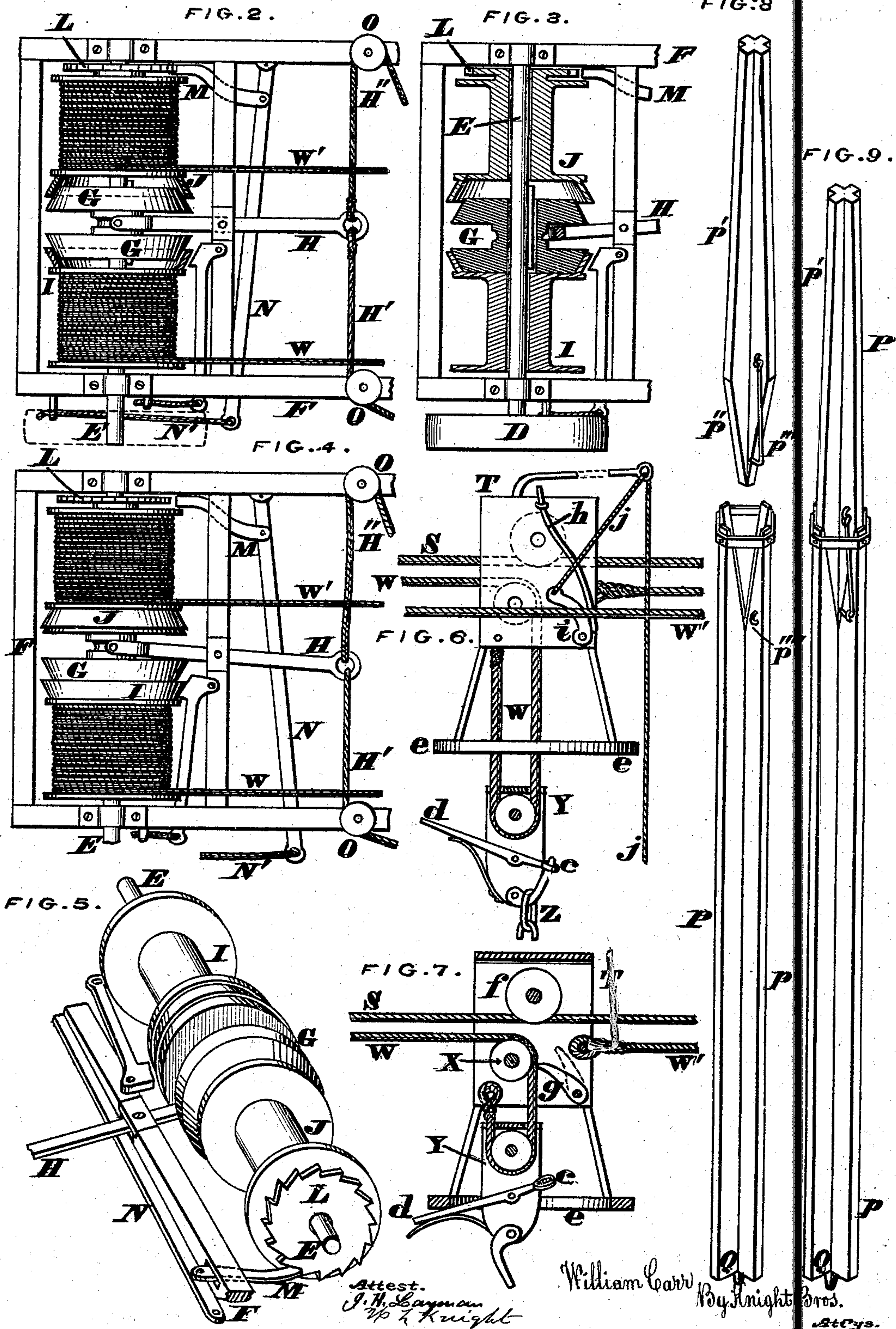


Attest.
 J. H. Longman
 H. S. Knight

Wm Carr
 By Hugh B. B. B.
 Attys.

W. CARR.
Straw Stacking-Attachments for Thrashing-Machines.
No. 138,612.

Patented May 6, 1873.



UNITED STATES PATENT OFFICE.

WILLIAM CARR, OF YELLOW SPRINGS, OHIO.

IMPROVEMENT IN STRAW-STACKING ATTACHMENT FOR THRASHING-MACHINES.

Specification forming part of Letters Patent No. 138,612, dated May 6, 1873; application filed January 29, 1873.

To all whom it may concern:

Be it known that I, WILLIAM CARR, of Yellow Springs, Greene county, Ohio, have invented a new and useful Straw-Stacking Attachment for Thrashing-Machines, of which the following is a specification:

Nature and Objects of the Invention.

My invention relates to the provision of a straw carrying fork or grapnel, under control of one or more operators or attendants, and driven by power derived from the beater-shaft or other moving part of the thrashing-machine.

General Description.

In carrying out the above purpose I provide on the outside of the thrasher-case or frame a series of windlass-drums, capable of being placed in connection with the beater-shaft or other shaft of the thrashing-machine by means of a slip-belt and movable clutch or equivalent devices. From these windlasses proceed cords or ropes to a traveling-carrier, from which depends a double fork or grapnel, which serves to grasp a bunch of straw, raises it to the proper height, conducts it to the point from which it is desired to drop it, and then to release the bunch. This traveling, grasping, and releasing apparatus is suspended from and guided by a tight-rope attached to suitable shears, which, for convenience, are made portable.

Description of the Accompanying Drawing.

Figure 1 is a general perspective view, representing a thrashing-machine and straw-stacker in position for operation. Fig. 2 is an axial section through the windlass, the clutch being disengaged from the drums. Fig. 3 is a similar section, showing the clutch engaged with the lifting and disengaged from forwarding-drum. Fig. 4 is a similar section, showing said clutch engaged with the forwarding-drum. Fig. 5 is a reverse perspective view of the windlass, the shield being removed. Fig. 6 is a vertical section through the carrier and its suspended block-pulley, in the plane of the sheaves, just before the act of springing the catch. Fig. 7 is a similar section of the same parts after the catch has been sprung. Fig. 8 shows one of the poles taken apart, and Fig. 9, the same pole united.

A may represent a thrashing-machine of any form. A small pulley, B, upon the beater-shaft communicates from said shaft through the medium of crossed belt C and large pulley D to any windlass-shaft, E, journaled in suitable bearings F upon the frame of the thrashing-machine. The shaft E is feathered at its midlength to impart constant rotation to a sliding clutch, G, operated by a lever, H, and which, when shifted to the right, (see Fig. 3,) engages in loose drum I, or when shifted to the left, as in Fig. 4, engages in loose drum J. Loose drum J carries a ratchet-wheel, L, capable of receiving a detent, M, operated by lever N. The levers H and N have attached to them cords H' and N', which pass around sheaves O, to enable said lever to be operated by persons standing upon the ground. A common loose pulley and belt shifter being provided may enable disconnection of the straw-stacker windlass at any moment. P P' is one pair, and P'' P''' another pair of shears or poles, preferably of the represented X transverse section, and each formed in two pieces, p p', united when in use by the insertion of the salient into the receding portion of the scarf-joint p'', and being held firmly together by the hook p''', staple p''', and stationary band p''. This form of the poles combines strength with lightness, and the capability of separation at or about their midlength into two component parts enables their easy transportation and compact storage when not in use. The lower ends of the said poles are armed with spikes Q, to take firm hold of the ground, and their upper ends are coupled by means of bolts R having eyes for stout cords or cables S S' S'', of which the central one, S', stretches from one pair to the other of the sheaves, and serves as the track-rope for any suitable carrier, T. The other cables serve as guys, the cable S'' being secured to a stake, U, in the ground. The cable S' may also be secured to a stake in the ground, or may be fastened to the frame of the thrasher by means of ratchet-winch s, as shown in Fig. 1. V V' V'' are block-pulleys suspended from said poles. W is a rope attached at one end to the drum I, and being rove through pulley V and carried round a sheave, x, in the carrier, and rove through a block-pulley, y, has its

other end attached to the carrier, as shown in Figs. 6 and 7. W' is a rope attached at the end of the drum J, and, being rove through pulleys V' and V'' , is attached by its other end to the carrier. The two fork-heads a a' , composing the grapple, are suspended by a chain or strap, b , from an eye, Z , extending from the bottom of the block-pulley Y. The pulley Y is furnished with a customary trip-catch, c , whose arm d is operated on the ascent of the said pulley so as to release the said catch by striking against the ring e , which projects from the bottom of the carrier. A second sheave, f , in the carrier, enables it to be run easily out and in along the cable S. g is an eccentric clamp, which, when left at liberty, presses the rope W' tightly against the sheave X, so as to automatically prevent the descent of the said rope and of its dependent pulley Y without opposing the ascent of the said rope. The clamp g is managed by means of a rope, j . The action of the clamp g may be aided by a spring, h , which is attached to an arm, i , that projects from shaft of said clamp. The action of the spring h is to press the clamp g against the rope W without interfering with the upward movement of said rope. To this arm is attached a rope, j , whereby a person on the ground can engage clamp J whenever it is desired to retain the loaded grapple at its elevated position after the liberation of the drum I. m is a guard or cover for the windlass.

The above-described preferred form of my improvement may be varied in non-essential particulars; for example, the descent of grapple may be prevented by a rubber applied to drum, I, and worked by a cord similar to other levers; or, it can be worked by clamp g , acting automatically, and being disengaged by rope j .

Operation.

The thrashing-machine being placed in position and ready for operation, and the pulleys B and D being belted together, and the ropes W and W' wound upon their drums and rove through their appropriate pulleys, as above explained, the poles P P' P'' P''' have now their operative halves spliced together and their upper ends coupled in two pairs by the eye-bolts, and the stacker is now ready for action. As soon as a sufficient pile of straw has accumulated at the tail of the thrasher the grapple is disposed with its forks extended upon the straw, and, the trip-catch being locked, the lever is shifted so as to connect the drum I with the revolving clutch. The drum I now revolves and winds up the cord W and lifts and at the same time closes the grapple, which now ascends with its load of straw. The spring h holds clamp g off of rope W until grapple is at proper height; then by pulling rope j the clamp presses the rope W and prevents the retrograde motion thereof, and prevents the grapple from descending when clutch G is removed from drum I. When the carrier is run out sufficiently on track cable,

and ratchet thrown in so as to prevent return of carrier, and the drum I engaged with a clutch which winds up the rope W, the loaded grapple will ascend and disengage its load, and the spring h , assisted by upward motion of rope W, disengages clamp g and holds it off of the rope W until you wish to engage it again. The loaded grapple, having reached the desired place of discharge, the pawl is engaged in the ratchet to prevent retrograde rotation of the drum J. The clutch is now a second time engaged with the drum I, causing grapple to resume its ascending motion, as the ratchet now holds the carrier in its place upon the cable by preventing the drum J from unwinding, (the same as stop K first held it when load was first elevated,) until the arm striking the ring springs the catch and drops the load. The pawl is now thrown out of ratchet, the drum J is now allowed to unwind, while the drum I, still being engaged with the clutch, brings the grapple back to stop K on cable S. The clutch being then disengaged from the drum I entirely or partially, allows the grapple to descend swiftly or slowly to its place upon the straw for a repetition of the above operation.

The ratchet is only used in discharging the load. It acts the same as a stop on the cable by preventing drum J from unwinding.

The poles may be shifted from time to time if required to form ricks at any angle from the machine.

By this means two men are enabled to do the work of five times the number required in the ordinary mode of moving and stacking the straw from a thrashing-machine, and with more ease.

Claims.

1. The straw-stacking attachment for a thrashing-machine, consisting of counter-shaft driven from the beater-shaft or other moving member of the machine, loose drums I and J, clutch and ratchet, as and for the purpose set forth.
2. The shears P P' P'' P''', each formed of two or more separate members united by joint p p' p'' p''' , as explained.
3. The combination of the counter-shaft driven from the beater-shaft, the loose drums I and J, clutch G, carrier T, self-releasing catch and double fork or grapple, all arranged to operate substantially as and for the purpose set forth.
4. The described combination of carrier T, ropes W W' , track-cables S, pulleys V V' V'', sheave X, and block-pulley Y, for the purpose designated.
5. The described combination of grapple a a' , strap b , and trip-catch c d , ring e , for the object stated.

In testimony of which invention I hereunto set my hand.

WILLIAM CARR.

Attest:

GEO. H. KNIGHT,
JAMES H. LAYMAN.