(No Model.) 3 Sheets—Sheet 1.

E. BROOKS.

STRAW STACKER.

No. 304,903. Patented Sept. 9, 1884.

Fig. 1

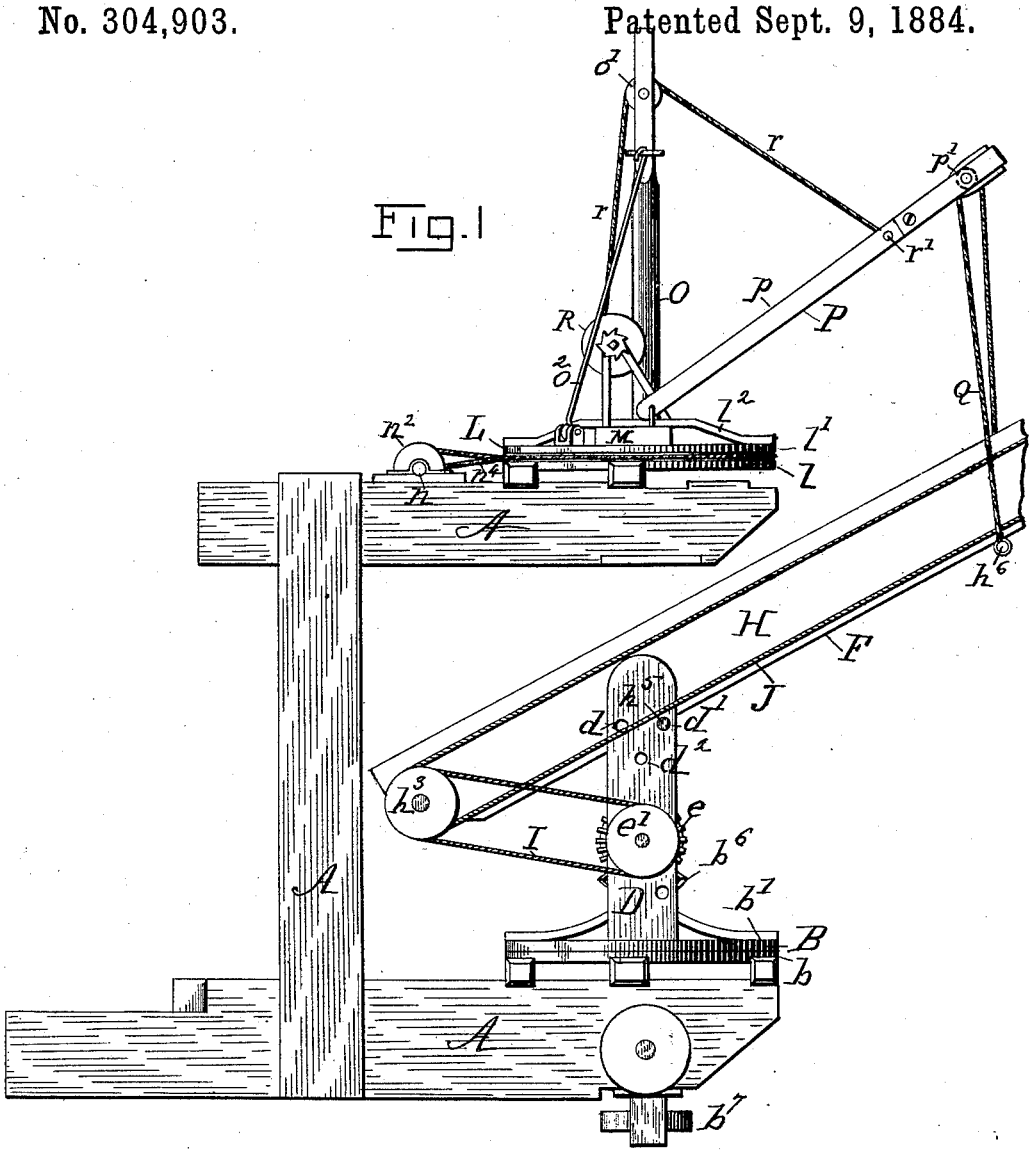
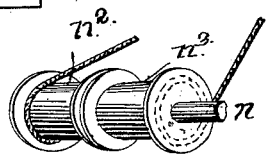


Fig. 5.



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(No Model.) 3 Sheets—Sheet 2.

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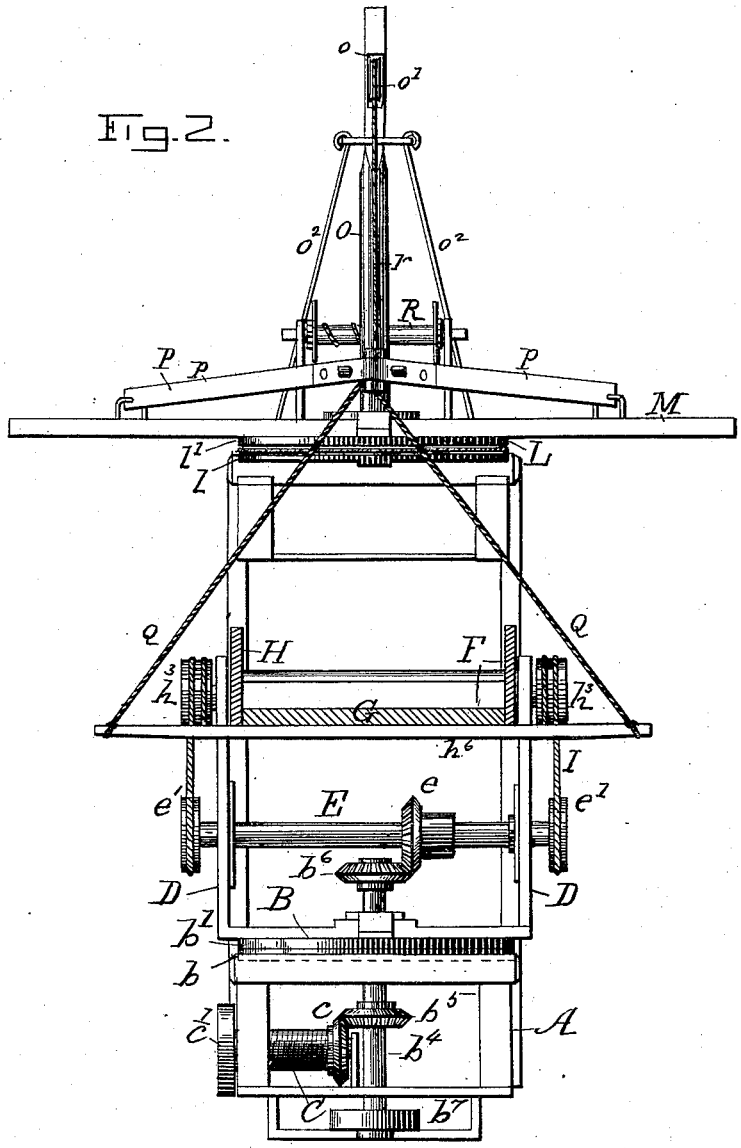
Fig. 2.



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(No Model.) 3 Sheets—Sheet 3.

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STRAW STACKER.

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Fig. 3.

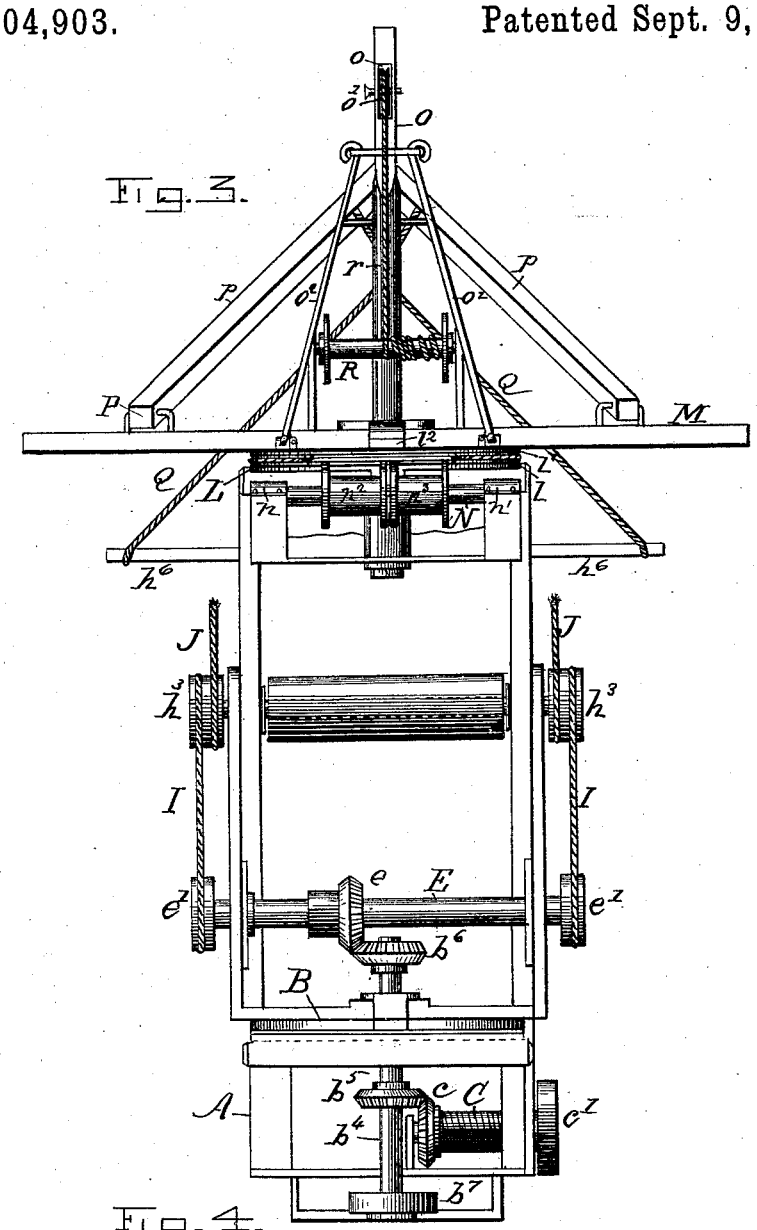
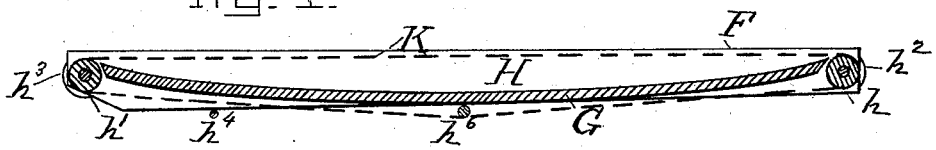


Fig. 4.



WITNESSES

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UNITED STATES PATENT OFFICE.

EBENEZER BROOKS, OF BOYLER'S MILL, ASSIGNOR OF ONE-HALF TO JOHN U. GATY, OF WARRENSBURG, MISSOURI.

STRAW-STACKER.

SPECIFICATION forming part of Letters Patent No. 304,903, dated September 9, 1884.

Application filed May 15, 1884. (No model.)

To all whom it may concern:

Be it known that I, EBENEZER BROOKS, a citizen of the United States, residing at Boyler's Mill, in the county of Morgan and State of Missouri, have invented certain new and useful Improvements in Straw-Stackers; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters and figures of reference marked thereon, which form a part of this specification.

The invention relates to that class of straw-stackers (used in connection with thrashing-machines) in which a turn-table is used in connection with the carrier to swing the same laterally into any desired position, as would be necessary when building a circular or semi-circular rick of straw.

In the drawings accompanying and forming part of this specification, Figure 1 is a side view of my machine. Fig. 2 is a rear elevation with the endless carrier broken away. Fig. 3 is a front view of the machine. Fig. 4 is a detail longitudinal view of the carrier-frame, and Fig. 5 is a detail perspective view of one of the shafts, all of which will be described.

In the accompanying drawings, A represents a frame of any proper form and construction for attachment to the rear end of a thrashing-machine in such manner that the latter may discharge its straw immediately upon the lower end of the carrier.

B is a turn-table composed of the lower circle, *b*, of iron or other proper material, fixed firmly in a horizontal position to the lower part of frame A, and the similar but movable upper circle, *b'*. The circles *b* and *b'* are provided with internal arms and with central openings, by means of which and of the vertical shaft b^4, which has proper bearings in the frame A, the former circle turns upon the latter.

b^5 is a miter gear-wheel on the shaft b^4. Below the turn-table b^6 is a similar gear-wheel on the same shaft above said turn-table, and b^7 is a pulley on the lower end of the shaft.

c is a short horizontal shaft having bearings in the frame A, and provided on its inner end with the miter gear-wheel *c*, which meshes with the wheel b^5, and on its outer end with the pulley *c'*.

D D are uprights of iron or other proper material, which rise from the upper surface of the circle *b'* at points diametrically opposite each other. These uprights have made at proper points in their lengths bearings for the horizontal shaft E, and each is provided near its upper end with the openings *d*, *d'*, and d^2, for a purpose hereinafter mentioned.

e is a miter gear-wheel on the shaft E at a proper point to mesh with the miter gear-wheel b^6, and *e' e'* are pulleys, one on each end of said shaft outside the uprights D.

F is the carrier, composed of the floor portion G, curving downward in its middle, as shown, and the sides H H, which project beyond each end of the floor portion G and have in them the bearings for the journals of the rollers *h* and *h'*, respectively, of the upper and lower end of the carrier. h^2 h^2 are pulleys, one attached to each end of the roller *h* outside of the sides H of the carrier, and h^3 h^3 are similarly-situated pulleys for the roller *h'*.

h^4 is a rod attached transversely to the lower surface of the carrier, and having its ends h^5 h^5 fixed into the holes *d d*, *d' d'*, or d^2 d^2, as desired.

h^6 is a rod attached transversely to the lower surface of the carrier, for a purpose hereinafter mentioned.

I I are driving-belts, one on each side of the carrier, and passing around the pulley h^3 and *e'* on the same side.

J J are belts on each side of the carrier, and passing around the pulleys h^2 and h^3 on their respective sides.

K is the carrier-apron, of the usual or other proper construction, and passing around the rollers *h* and *h'*, in the usual manner. The construction of the bottom G, curving downward at its middle point, allows said carrier-apron to hug it and make a tight fit over it and over the rollers. This is accomplished by the concave or centrally-depressed bottom G, permitting the depression of the upper wing of the apron by the load, so as to tighten it on its roller. At the same time the bottom pre-

vents the two wings of the apron from coming in contact and delaying its revolution by their friction against each other as they are moving in opposite directions.

L is a turn-table similar to the turn-table B, and having its lower circle, *l*, firmly fixed to the upper part of frame A, vertically above the turn-table B.

l^2 is a diametrical cross-piece fixed to the upper circle, l', of the turn-table, and provided with a central opening. The cross-piece l^2 rises centrally far enough above the upper ring or circle, l', to allow the transverse beam M to pass and be secured between the two.

N is a horizontal transverse shaft, having the bearings *n* and n' in the upper part of the frame A, on which bearings the said shaft turns, and having fixed upon it the spools n^2 n^3.

n^4 is a rope or cord running from the spool n^3 around the periphery of the upper circle, l', of the turn-table, and back to the spool n^2, which it engages on the opposite side to its attachment on the former spool. By means of the spools n^2 n^3 and the cord n^4 the turn-table may be rotated to any desired distance.

O is a shaft rising vertically from the center of the circle of the turn-table L, passing through the opening in the cross-piece l^2, and provided near its upper end with the longitudinal slot *o*, in which is fixed the pulley o', for a purpose hereinafter mentioned.

o^2 o^2 are stays for the shaft O, attached by their lower ends to the circle l' on each side of said shaft.

P is a derrick composed of the equal arms *p p*, hinged by the outer ends to the ends of the beam M, at an equal distance from the center of same, and meeting at the inner ends, between which is provided the vertical pulley p'.

Q is a cord attached to one end of the rod h^6, whence it passes over the pulley p', to be attached to the other end of said rod, and serves to support the carrier at any desired point from the derrick.

R is a windlass, of any proper construction, fixed to the beam M, and having attached to it by one end the cord *r*, which, passing over the pulley o' on the upright shaft O, has its other end attached to the middle of the derrick in such manner as not to interfere with the pulley in the upper end of the same, the usual mode of attachment being by the cross-bar r', running from one arm *p* to the other below said pulley. The cord *r*, in conjunction with the windlass and derrick, serves to raise and lower the carrier as required.

The different parts of the machine are operated as follows: It is evident from the construction of the lower turn-table, B, the shaft b^4, the gear-wheels b^5 and *c*, and gear-wheels b^6 and *e*, respectively, that the carrier-apron may be actuated by a belt engaging either the pulley b^7 or the pulley c', and that when the said apron is actuated by means of the pulley b^7 the intermeshing gear-wheels b^5 and *c* may be dispensed with. In either case the revolution of the shaft E and attached pulleys e' e' will, by means of the short belts I I, drive the roller h' and pulleys h^3 h^5 of the lower end of the carrier, and consequently the upper roller, *h*, by the belts J J. The carrier may be made to travel laterally at any desired height by turning the upper circle, l', of the turn-table L. When the upper circle, l', of the upper turn-table, L, is made to rotate, the lower turn-table will follow its motion and rotate the carrier, the latter being hung to the derrick P by the cord Q, which is attached to the ends of the transverse rod h^6. When it is desired to raise the outer end of the carrier, the cord *r* is wound upon the windlass R by means of its proper crank-handle. Should the driving-belts I I be too loose, they may be tightened by simply lowering the outer end of the carrier, which will slightly raise the inner end of the same and separate the pulleys e' and h^3. If a greater adjustment between said pulleys is requisite, the ends of the rod h^4 may be inserted into two sets of the holes *d d*, d' d', or d^2 d^2 farther away from the pulley e' than the set in which they last rested.

I employ on my stacker a device for regulating the speed. It is operated by a belt running from the band-wheel of the fan or other suitably-located band-wheel. The device consists of two or more pairs of light gearing. The speed is reduced by a worm-screw working on a point-wheel. Each revolution of the screw moves the wheel one cog. A small miter-wheel on the short shaft of the first wheel works in a second miter-wheel attached to another vertical shaft, which operates the second pair of gears. By means of these the speed can be reduced on the spool-shaft to the speed desired by making the proper number of cogs on said gearing. This device, when put together in a light frame of any suitable material, is bolted to the side of the thrasher near the spool-shaft, and connected to the latter by band. By simply shifting the belts on tight and loose pulleys the motion can be reversed, so as to run the spool-shaft either way, which will move the stacker in any direction desired.

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

1. In a straw-stacker, the combination of the frame A, carrier F, and mechanism for actuating the carrier-apron K, with the lower turn-table, B, upper turn-table, L, derrick P, pulley p', cord Q, cord *r*, cross-beam M, upright shaft O, and pulley o', all constructed and arranged as shown and described, for the purpose specified.

2. In a straw-stacker, the combination, with the carrier-apron K and mechanism for actuating the same, of the carrier F, provided with floor G, curving downward from both ends to its middle point, as shown and described, for the purpose specified.

3. In a straw-stacker, the combination of the uprights D D, provided with the sets of

openings d d, d' d', and d^2 d^2, the shaft E, pulleys e' e', and actuating mechanism, with the carrier F, pulleys h^2 h^2 and h^3 h^3, and belts I I and J J, all constructed as shown and described, for the purpose specified.

4. In a straw-stacker, the combination of the carrier F, lower turn-table, B, and uprights D D with the shaft O, derrick P, windlass R, cross-beam M, upper turn-table, L, shaft N, spools n^2 n^3, and cord n^4, as shown and described.

5. In a straw-stacker, the combination of the lower turn-table, a carrier pivotally supported on the said turn-table, an upper turn-table, a derrick supported on said turn-table, devices for adjusting said derrick and connecting it with the outer end of the carrier, and the necessary operating mechanism, substantially as set forth.

6. The combination, with the lower turn-table, the carrier pivotally supported thereon, the upper turn-table, and a device connecting the upper turn-table and the outer end of the carrier, of the shaft N and the cord passed around and secured to the rotary plate of the upper turn-table, and having its ends wound in opposite direction on shaft N, whereby the rotation of the latter accomplishes an adjustment of the said turn-table and of the carrier, substantially as set forth.

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

EBENEZER BROOKS.

Witnesses:
L. W. JACK,
THEO. C. SWEARINGEN.