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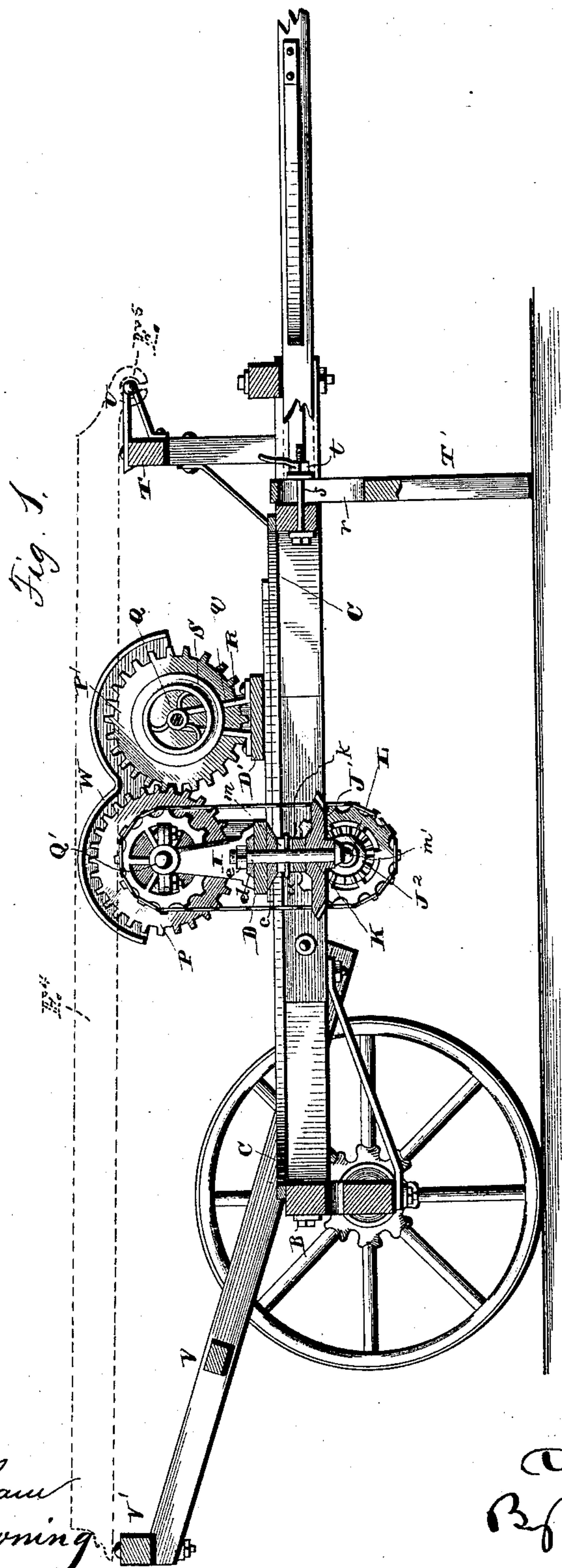
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T. H. RUSSELL.

STRAW STACKER.

No. 304,756.

Patented Sept. 9, 1884.



WITNESSES

*E. J. Nottingham*  
*Geo. F. Downing*

INVENTOR

*Thos. H. Russell*  
*B. H. Symmon*  
Attorney

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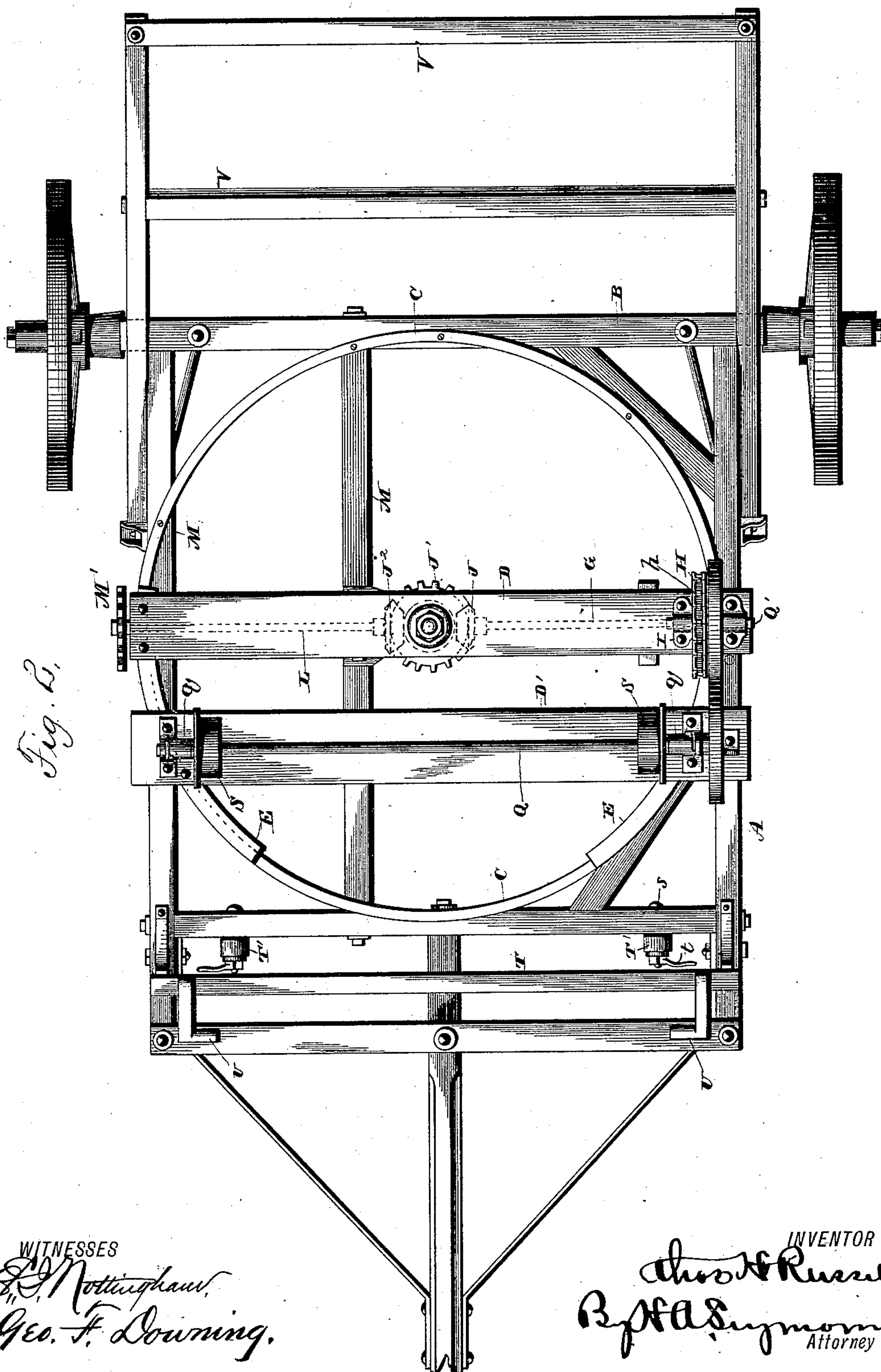
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*B. H. A. Symmons*  
Attorney



4 Sheets—Sheet 3.

## STRAW STACKER.

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INVENTOR  
 Chas H Russell.  
 By H. S. Symons,  
 Attorney

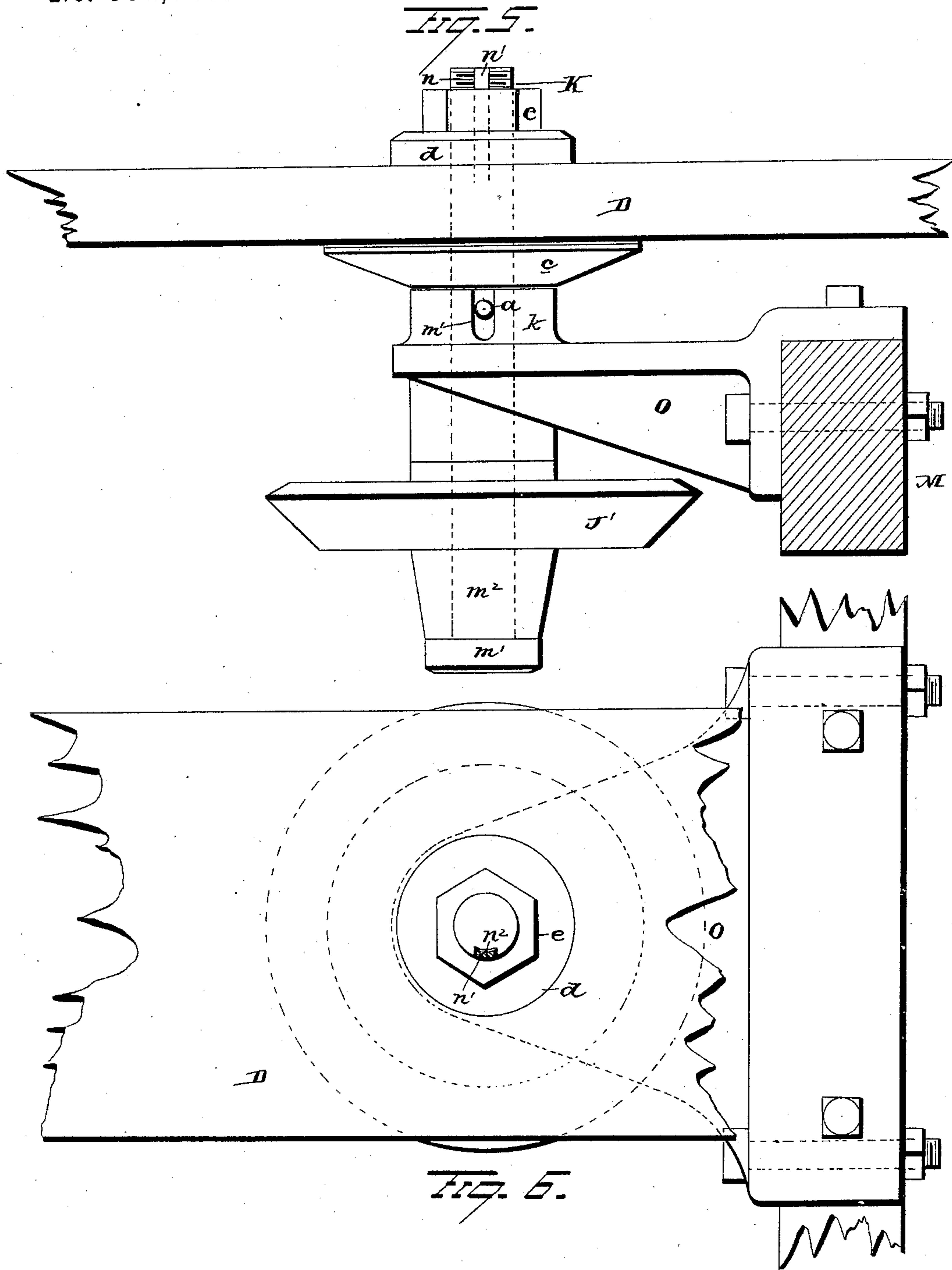
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INVENTOR  
*Thos H Russell*  
*By R. A. Symmon* ATTORNEY



# UNITED STATES PATENT OFFICE.

THOMAS H. RUSSELL, OF MASSILLON, OHIO, ASSIGNOR TO RUSSELL & COMPANY, OF SAME PLACE.

## STRAW-STACKER.

SPECIFICATION forming part of Letters Patent No. 304,756, dated September 9, 1884.

Application filed April 30, 1884. (No model.)

*To all whom it may concern:*

Be it known that I, THOMAS H. RUSSELL, of Massillon, in the county of Stark and State of Ohio, have invented certain new and useful Improvements in Straw-Stackers; and I do hereby 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.

My invention relates to an improvement in straw-stackers. One object of the invention is to provide improved features of construction and arrangement of the parts for enabling the endless conveyer of the stacker to be adjusted and operated at any desired angle, and the conveyer to be supported at one side of the pivotal bearing of the rotary supporting-frame, and thereby relieve the pivotal bearing of any undue strain or wear. A further object is to provide improved means or devices for securing the conveyer in any desired adjustment. A further object is to provide an improved construction and arrangement of gearing for operating the conveyer. A further object is to provide a stacker with adjustable legs, to enable it to be retained in proper position for use, and also to be readily transported from place to place. A further object is to provide a truck of such construction that the conveyer-frame may be dismounted and secured thereon for transportation.

With these several ends in view my invention consists in certain features of construction and combinations of parts, as will be hereinafter described, and pointed out in the claims.

In the accompanying drawings, Figure 1 is a view in longitudinal section of my invention as applied to a truck. Fig. 2 is a plan view of the same. Fig. 3 is a view in transverse section; Fig. 4, a view in side elevation; and Figs. 5 and 6 are detached views illustrating the construction and arrangement of the vertical pivot and its connections.

A represents a truck supported at one end by wheels, and provided at its opposite end with a tongue, which is detachably secured to a thrashing-machine, whereby the truck is

drawn after the thrasher, and always retained in proper relative position thereto. Truck A may be of any approved construction, and has attached thereto the circular metal track C.

D D' are bolsters, to which are secured the segmental guides or bearing-plates E, that are supported and move upon the circular trackway C. Bolster D is arranged over the center of the track C, and has secured thereto the hanger-boxes F F, in which is journaled the shaft G.

To the outer end of the shaft G is secured the sprocket-wheel H, around which passes a chain, *h*, said chain also encircling the sprocket-wheel H', mounted on a shaft, H<sup>2</sup>, that is journaled in the standards I I, supported upon the outer end of bolster D. Shaft G has secured to its opposite end the bevel-pinion J, which meshes with the horizontal bevel-wheel J', loosely sleeved on the vertical pivot-pin. Shaft L is journaled in hanger-boxes F', secured to the beams M of the truck-frame. The outer end of shaft L has secured thereto a sprocket-wheel, M', which is connected by a chain with a sprocket-wheel on the thrashing-machine, to enable the stacker to be operated by power transmitted from the thrasher. The opposite or inner end of shaft L is provided with a bevel-pinion, J<sup>2</sup>, which meshes with the horizontal bevel-wheel J'.

Pivot-pin K is supported in the sleeve *k* of the bracket O, which latter is rigidly secured to the beam M. This pin is provided with the pin *a*, the ends of the latter pin being inserted in slots *m*, formed in the sleeve *k* of bracket-bearing O, whereby the pivot-pin K is retained against rotary movement. The lower end of the pin is provided with a head, *m'*, on which is supported the hub *m*<sup>2</sup> of the horizontal bevel-wheel J', the hub of the latter being located between the head *m'* of the pivot-pin and the lower end of the sleeve *k* of the bracket-bearing. Thus the horizontal bevel-wheel is free to rotate on the pin K, and is insured a firm upper and lower bearing-surface for the upper and lower ends of its hub.

Between the bolster D and bracket O the pin K is encircled by a washer, *c*, that serves to insure a firm and extended lateral bearing for the pin. The upper end of pin K is screw-



threaded at  $n$ , and provided with a groove,  $n'$ , within which is received a spline,  $n^2$ , on the washer  $d$ , the latter being placed on the pin and resting on the bolster, thereby serving as a bearing for the nut  $e$ . By securing the washer to the pin the washer is prevented from rotating with the bolster, and thus a stationary bearing is provided for the nut  $e$ , and the latter prevented from rotating, and thereby becoming loosened. Another important advantage in the construction and arrangements of parts described is the following: By tightening the nut  $e$  any desired friction may be transmitted to the bolster through the washers  $c$   $d$ , and thus the bolster and conveyer supported thereon may be readily secured and retained in any desired adjustment; or sufficient friction may be imparted to the connections to overcome the tendency of the conveyer to be shifted or displaced by the wind or other causes.

Shaft  $Q'$  is provided with a spur-wheel,  $P$ , which meshes with the wheel  $P'$ , secured to the shaft  $Q$ , supported in elongated bearings  $q$  on the opposite ends of the bolster  $D'$ .

To the opposite ends of the shaft  $Q$  are secured the drive-pulleys  $S$ , which are encircled by the lower end of the endless belt, to which the raddles of the conveyer are attached. Bolsters  $D$   $D'$  are arranged parallel to each other, and are secured at opposite ends to the guide-plates  $E$ . Bolster  $D$  is located over the center of the circular track, while bolster  $D'$  is located at one side of the center, for a purpose hereinafter explained.

The endless conveyer  $E^1$  may be of any desired or approved construction, and is provided at its lower end with forked or hooked brackets  $E^2$ , or rests, which fit upon the elongated bearings  $q$ , and are supported thereby, said bearings constituting pivotal bearings for the conveyer to enable it to be raised or lowered to any desired angle. By passing a pin through the forked or hooked rests on the lower end of the conveyer, and below the elongated bearings  $q$ , the conveyer may be securely retained against displacement. It will be observed that the weight of the conveyer is transmitted to the bolster  $D'$ , and as the latter is located at one side of the center of the circular track it obviates any lateral or uneven strain on the center-pin  $K$ . A guard,  $W$ , made in a single piece, and secured to the bolsters  $D$   $D'$ , serves as a cover or shield for the spur-wheels  $P$   $P'$ , and prevents the straw from coming in contact with or clogging said wheels while the machine is in operation. The conveyer is mounted on the elongated bearings  $q$ , and is raised and lowered by means of a rope secured at one end to the upper and free end of the conveyer, the other end of the rope being secured to a windlass on the thrashing-machine. The conveyer may be adjusted to any desired angle relatively to the thrashing-machine to discharge the straw at different points without stopping or interrupting the driving mechanism; and, as heretofore stated,

the frictional devices enable the conveyer to be secured at any point in its range of adjustment without liability of its becoming accidentally shifted from its position.

The truck is provided with the adjustable legs  $T'$  (one or two) for insuring a firm and even bearing for the conveyer while in operation. These legs are each provided with an oblong slot,  $r$ , through which is inserted a bolt,  $s$ , the latter being secured at one end to the frame of the truck, and at its other provided with a hand-nut,  $t$ . By adjusting the legs and securing them in place by means of the hand-nuts the truck may be accurately adjusted on any uneven surface, and thus be firmly supported while the machine is in use. The legs may be raised and secured in such position and out of contact with the ground when the machine is to be transported.

To the front end of the truck is secured the frame  $T$ , provided with the bearings  $U$ , while the rear end of the truck is provided with the inclined extension  $V$ , provided with cross-bar  $V'$ . In the transportation of the machine the forked ends of the conveyer-frame are placed on the bearings  $U$ , while the rear portion of the conveyer-frame rests on the cross-bar  $V'$ . Thus the conveyer-frame is supported out of contact with the driving mechanism, and its weight and length are so disposed on the truck that it may be safely and easily carried from place to place.

The truck is situated beneath the straw-carrier of the thrashing-machine, so that the straw will fall onto the lower end of the conveyer, and be carried upwardly thereby and be delivered at any desired point.

While I have described the stacker as being mounted on a truck, I do not limit myself to such use of my improvement, as the circular track, bolsters, driving mechanism, &c., may be mounted on a rear extension of the thrashing-machine and constitute a fixed stacker.

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

1. In a straw-stacker, the combination, with a circular track and the guides curved to conform to and resting on said track, of bolsters secured to the guides, one of said bolsters being located over the center of the circular track, and the other located in front of and parallel to the first-mentioned bolster.

2. In a straw-stacker, the combination, with a circular track and the guide-plates curved to conform to and resting on said track, of a bolster secured by a king-bolt over the center of the track and carrying the driving-gear, and a second bolster located in front of said first-mentioned bolster and parallel thereto, and adapted to support the elevator when the latter is in operative position, both of said bolsters being secured to the guide-plates, substantially as set forth.

3. In a straw-stacker, the combination, with the circular track and bolster, of the pivot-



pin provided with a groove, a washer having a spline fitting said groove, and a tightening-nut, substantially as set forth.

4. In a straw-stacker, the combination, with 5 the circular track and bolster, of a pivot-pin for the bolster, a washer encircling said pin and engaging the under side of the bolster, a washer located on the upper side of the bolster, and provided with a spline that engages 10 a groove in the upper end of the pin, and a nut that screws onto the upper end of the pin, substantially as set forth.

5. In a straw-stacker, the combination, with 15 a circular track and bolster, of a pivot-pin for the bolster, said pin being provided with an elongated slot, a bracket through which the pin is inserted, said bracket being provided with a slot, and a pin extending through the slots in the pin and bracket, substantially as 20 set forth.

6. In a straw-stacker, the combination, with a circular track and bolster, of a pivot-pin extending through the bolster, washers above and below the bolster, a laterally - project-

ing bracket supporting the pin, and a bevel- 25 wheel loosely journaled on the lower end of the pin, said bevel-wheel serving to transmit motion from the fixed driving-shaft to the adjustable shaft, substantially as set forth.

7. In a straw-stacker, the combination, with 30 a truck, a driving-shaft, to which the conveyer-frame is adapted to be removably secured, and the conveyer-frame provided with brackets at its lower end, of bearings located at one end of the truck, and an upwardly-ex- 35 tending frame at the other end of the truck, the said bearings and upwardly - extending frame adapted to support the conveyer when the machine is not in operation, substantially 40 as set forth.

In testimony whereof I have signed this specification in the presence of two subscribing witnesses.

THOMAS H. RUSSELL.

Witnesses:

CHARLES A. GATES,  
J. W. McCLYMOND.