No. 843,512. PATENTED FEB. 5, 1907.

H. T. YOUNG.

FERTILIZER DISTRIBUTER.

APPLICATION FILED DEC. 24, 1906.

4 SHEETS—SHEET 1.

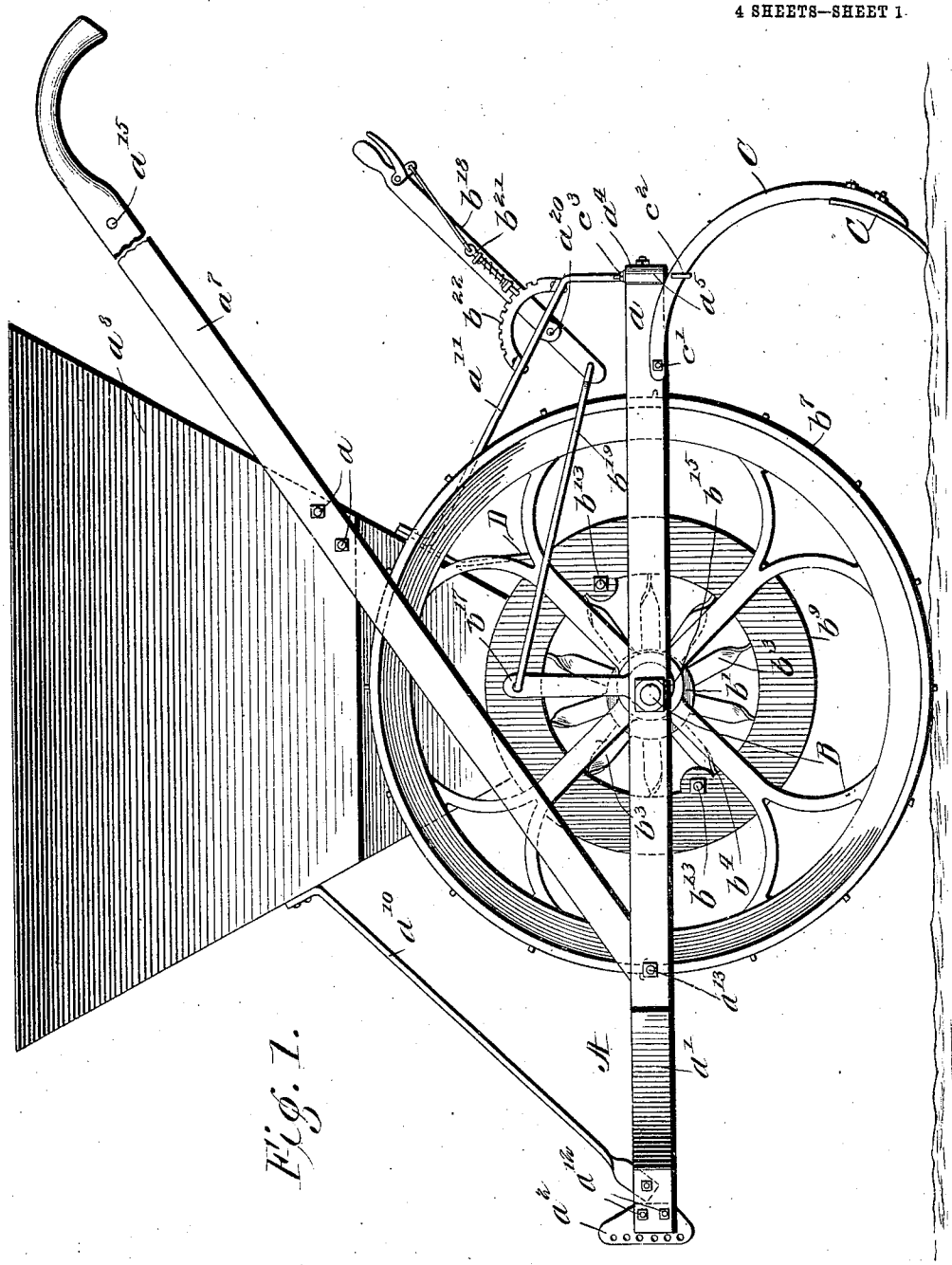


Fig. 1.

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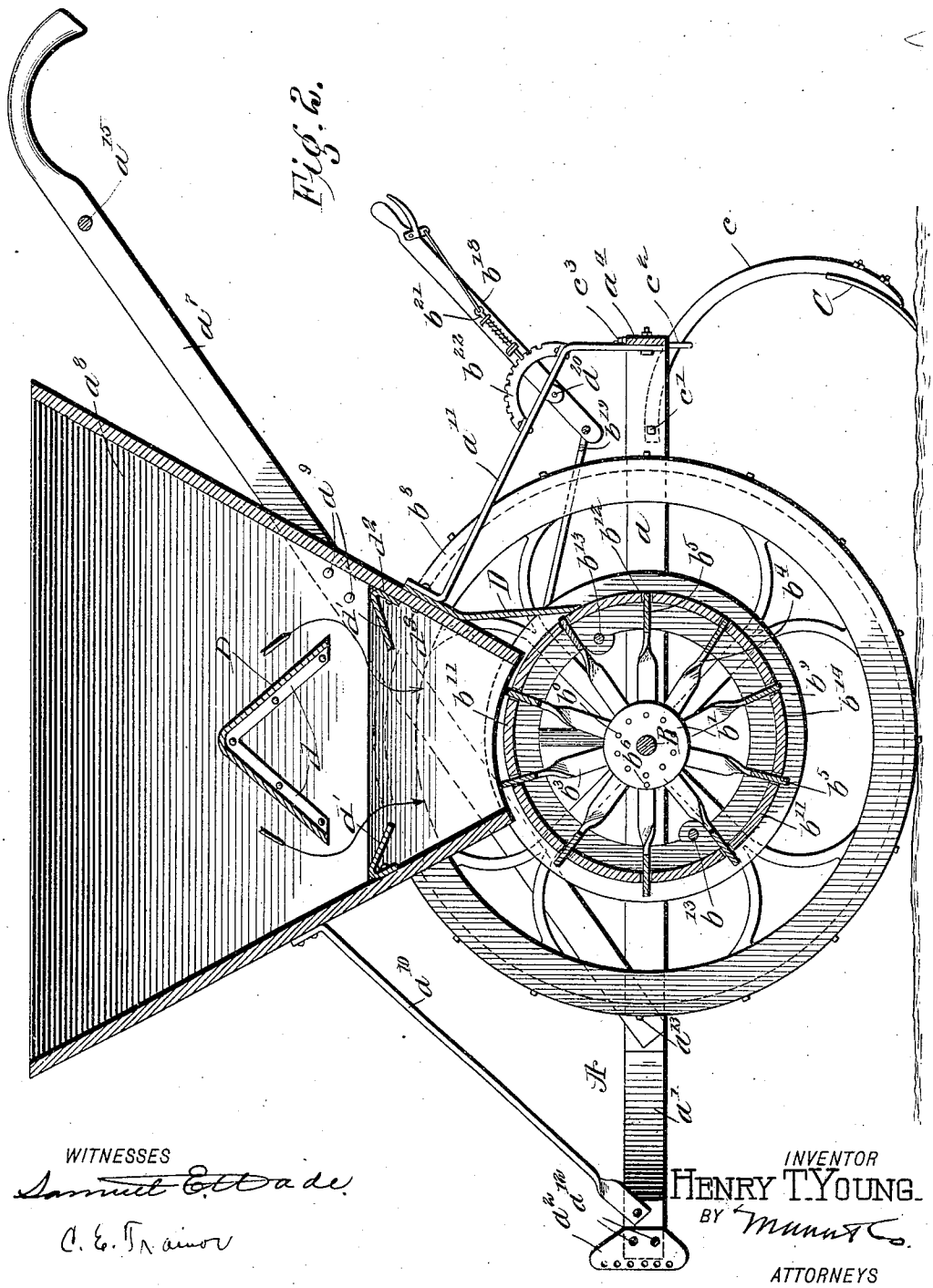
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4 SHEETS—SHEET 2.

Fig. 2.



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4 SHEETS—SHEET 3.

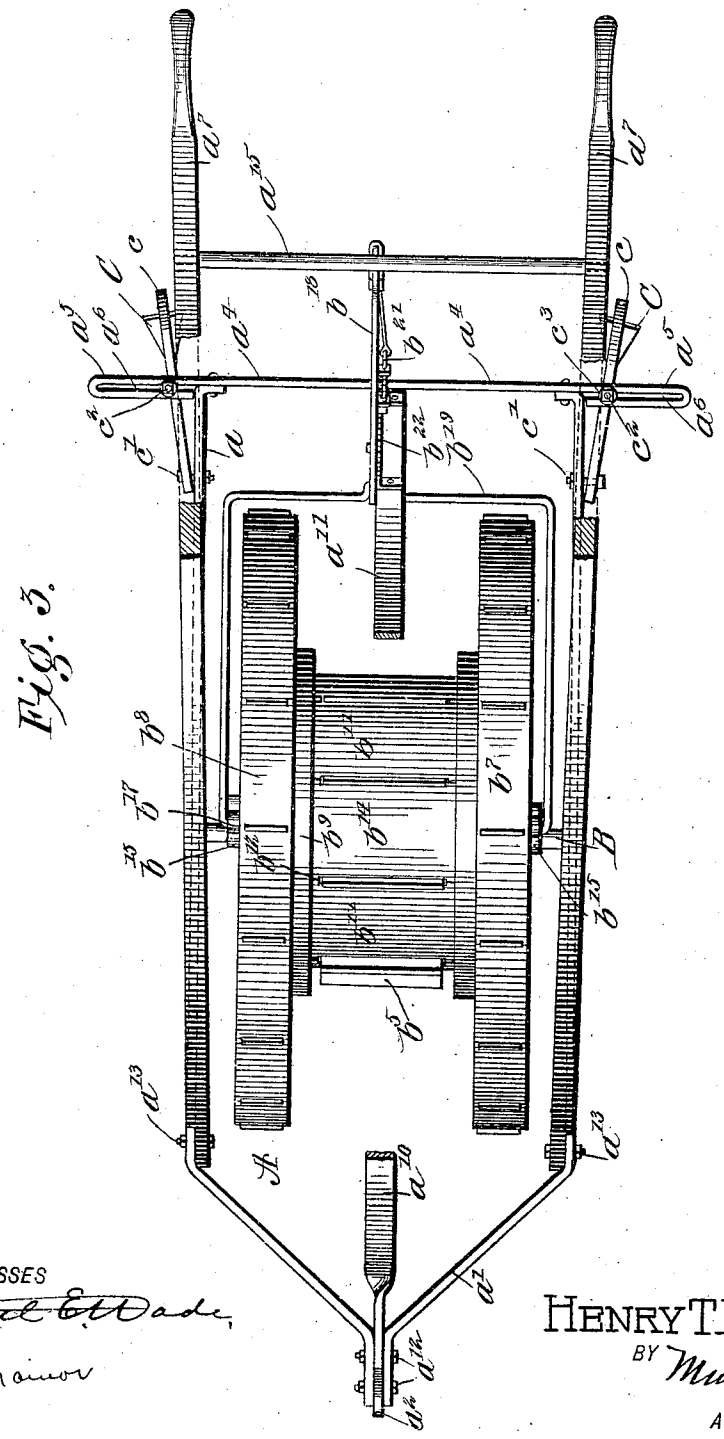


Fig. 3.

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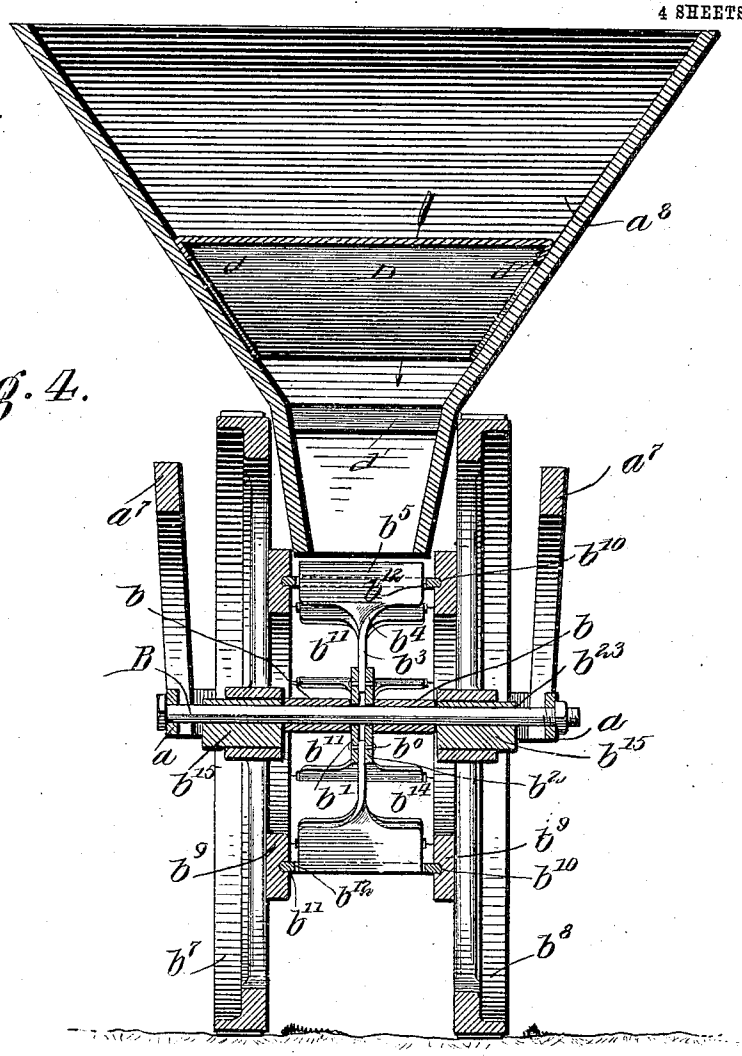
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4 SHEETS—SHEET 4.

Fig. 4.



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UNITED STATES PATENT OFFICE.

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FERTILIZER-DISTRIBUTER.

No. 843,512. Specification of Letters Patent. Patented Feb. 5, 1907.

Application filed December 24, 1906. Serial No. 349,236.

To all whom it may concern:

Be it known that I, HENRY T. YOUNG, a citizen of the United States, and a resident of Florence, in the county of Florence and State of South Carolina, have invented certain new and useful Improvements in Fertilizer-Distributers, of which the following is a specification.

My invention is an improvement in fertilizer-distributers, and consists in certain novel constructions and combinations of parts, as will be hereinafter described and claimed.

Referring to the drawings, forming a part hereof, Figure 1 is a side view of my improvement. Fig. 2 is a central longitudinal section. Fig. 3 is a plan view, parts thereof being broken away; and Fig. 4 is a transverse vertical section.

The present embodiment of my invention comprises a frame A, composed of the longitudinal bars a, the front ends thereof being bent at an angle toward each other, as at a', and joined together by bolts a^{12}, a clevis a^2 being interposed between the ends of the bars and secured in place by said bolts.

The rear ends of the bars a are bent at an angle to the body portion, and a cross-bar a^4 is bolted to said end portions, the ends of the cross-bar being bent upon themselves, as at a^5, to form open slots a^6 for a purpose to be hereinafter described.

A shaft or axle B is journaled between the longitudinal bars at approximately the center thereof, and on the said shaft are journaled sleeves b, the inner ends of the sleeves being provided with circular flanges b' b^2, and between the flanges are pivotally mounted the shanks b^3 of knives b^5, the said knives being arranged parallel with the shaft, the shanks being twisted, as at b^4, to permit this longitudinal arrangement. Rivets b^6 extend through the flanges, and the shanks thus securing the flanges together, and one of the shanks is provided with two rivets, as shown at b^6, whereby to limit the pivotal motion of the shanks with respect to the flanges.

Collars b^{15} are journaled on the shaft on each side of the sleeves, the said collars being provided with eccentric openings b^{23} for receiving the shaft and with radial arms b^{17} for a purpose to be hereafter described. Wheels b^7 b^8 are journaled upon the respective collars, and the said wheels are provided with internal annular webs b^9, each having on the inner face thereof an annular groove b^{10}, the radial arms b^{17} of the sleeves being on the outer side of the said wheels.

A cylinder b^{14} is arranged between the wheels and concentric therewith, the said cylinder comprising a plurality of abutting transversely-curved plates b^{11}, whose ends are received in the annular grooves b^{10} and whose edges are recessed, as at b^{12}, the recesses of the adjacent plates coacting to form openings for permitting the passage of the knives b^5, as shown in Figs. 2 and 4. Bolts b^{13} are provided for securing the wheels together, whereby to retain the cylinder in place, the said bolts passing through the cylinder and traversing openings in the webs.

A hopper a^8 is arranged above the cylinder between the wheels, and the bottom of the hopper is formed by the peripheral surface of the cylinder, the sides of the hopper being cut away on curves corresponding to the curves described by the edges of the knives when the wheels are revolved. A front brace a^{10} connects the front of the hopper with the junction of the longitudinal bars, and a rear brace a^{11} is arranged between the hopper and the cross-bar a^4. Handles a^7 are bolted to the longitudinal bars, as at a^1, and are connected with the sides of the hopper by the bolts a^9, the said handles being connected by the rung a^{15} adjacent to the rear end thereof.

The arms b^{17} of the collars b^{15} are pivotally connected with the arms of a yoke b^{19}, and the body portion of the yoke is pivoted to the lower end of a lever b^{18}, pivoted upon the rear brace a^{11}, as at a^{20}, and provided with a spring-actuated catch b^{21} for engaging a toothed quadrant b^{22}, whereby to retain the collars b^{15} in their adjusted position.

A plow-beam c, provided with a plow C, is pivoted to each of the longitudinal bars by a bolt c', and the upper edge of the beam is provided with a lug c^2, traversing the slot a^6, before described, and provided with a nut c^3 whereby to retain the plow-beam in its adjusted position with respect to the frame.

In operation, the hopper being supplied with fertilizer and the distributer being put in motion, the center of revolution of the wheels being eccentric to the center of revolution of the sleeves b, the knives b^5 will be projected upon one side of the cylinder and retracted upon the opposite side, as shown in Fig. 2. By adjusting the collars b^{15} circumferentially of the shaft the commencement of the point of projection of the knives may

be varied, the arrangement being preferably that shown in Fig. 2, where the point of commencement of projection is at the rear end of the hopper. The edges of the knives in their passage beneath the hopper follow the outline of the bottom thereof and remove a thin layer of the fertilizer therefrom, and the continued revolution of the cylinder drops the fertilizer upon the ground. After dropping the fertilizer the knives begin to retract into the cylinder, thus cleaning themselves from the fertilizer. Since each knife is projected at the same point from the cylinder, a continuous layer of fertilizer will be distributed, the layer being of a width equal to the width of the cylinder. For the purpose of cleaning the peripheral surface of the cylinder a scraper D is arranged at the rear of the hopper, the edge of the scraper contacting with the cylinder at a point where the knives are flush with or below the outer surface of the cylinder.

For the purpose of preventing the packing of the fertilizer on the surface of the cylinder a shield or deflector D is arranged transversely of the hopper above the bottom opening, said deflector comprising an angular plate having flanges d at the ends thereof, said flanges being secured to the sides of the hopper in any suitable manner. Below the plate D and secured to the ends of the hopper and transversely thereof are other shields or deflectors d', comprising a flange d^2, secured to the hopper, and an angular portion d^3, projecting inwardly and downwardly. It will be evident that the deflector D will deflect the fertilizer to the ends of the hopper and onto the deflectors d' in the direction of the arrows, all of the deflectors acting to support the fertilizer above them, whereby to relieve the pressure on the cylinder.

I claim—

1. A fertilizer-distributer comprising a frame, a shaft journaled thereon, a plurality of sleeves journaled on the shaft, said sleeves having outwardly-projecting circular flanges on their adjacent edges, knives arranged parallel with the shaft and having shanks pivoted between the flanges of the sleeves, collars on the outer side of the sleeves, said collars having radial arms and eccentric openings to receive the shaft, wheels journaled on the collars, each of said wheels having an annular web provided with an annular groove on the inner face thereof, a cylinder comprising a plurality of abutting transversely-curved plates, the ends of the plates being received in the annular grooves, and each plate having its edges recessed, the recesses of the adjacent plates coacting to form openings for receiving the knives, bolts within the cylinder and engaging the wheels for securing the parts together, a hopper supported by the frame above the cylinder, said cylinder forming the bottom of the hopper, and means connected with the arms of the collars for varying the position of the collars and shaft.

2. A fertilizer-distributer comprising a frame, a shaft journaled thereon, sleeves journaled on the shaft, said sleeves having outwardly-projecting circular flanges on their adjacent edges, knives arranged parallel with the shaft and having shanks pivoted between the flanges of the sleeves, collars on the outer sides of the sleeves, said collars having radial arms and eccentric openings to receive the shaft, wheels journaled on the collars, each of said wheels having an annular web provided with an annular groove on the inner face thereof, a cylinder having its ends engaging the grooves, and provided with a plurality of spaced longitudinal openings to receive the knives, a hopper supported by the frame above the cylinder, said cylinder forming the bottom of the hopper, and means connected with the arms of the collars for varying the position thereof with respect to the shaft.

3. A fertilizer-distributer comprising a shaft, sleeves journaled on the shaft, said sleeves having outwardly-projecting circular flanges on their adjacent edges, knives arranged parallel with the shaft and having shanks pivoted between the flanges of the sleeves, collars on the outer sides of the sleeves, said collars having radial arms and eccentric openings to receive the shaft, wheels journaled on the collars, a cylinder secured concentrically between the wheels, a hopper supported above the cylinder, said cylinder forming the bottom thereof, and means connected with the arms of the collars for adjusting the position thereof with respect to the wheels.

4. A fertilizer-distributer comprising a shaft, a sleeve journaled on the shaft, knives arranged parallel with the shaft and having shanks connected with the sleeve, collars on each side of the sleeve, said collars having radial arms and eccentric openings to receive the shafts, a cylinder secured between the wheels and concentrically therewith said sleeves having openings to permit the passage of the knives, a hopper supported above the cylinder, said cylinder forming the bottom thereof, a yoke having its arms connected with the arms of the collars, and a lever connected with the body portion of the yoke whereby to manipulate the arms.

5. A fertilizer-distributer comprising a shaft, a sleeve journaled on the shaft, knives arranged parallel with the shaft and having shanks connected with the sleeve, collars on each side of the sleeve, said collars having radial arms and eccentric openings to receive the shafts, a cylinder secured between the wheels and concentrically therewith said sleeve having openings to permit the passage of the knives, a hopper supported above the

cylinder said cylinder forming the bottom thereof, and means connected with the arms of the collars for adjusting the position thereof with respect to the wheels.

6. A fertilizer-distributer comprising a shaft, a sleeve journaled on the shaft, knives arranged parallel with the shaft and having shanks connected with the sleeve, collars on each side of the sleeve, said collars having radial arms and eccentric openings to receive the shafts, a cylinder secured between the wheels and concentrically therewith said sleeve having openings to permit the passage of the knives, a hopper supported above the cylinder, said cylinder forming the bottom thereof, means connected with the arms of the collars for adjusting the position thereof with respect to the wheels, and a scraper on the hopper engaging the periphery of the hopper.

HENRY T. YOUNG.

Witnesses:
A. M. MARTIN,
N. W. HICKS.