C. P. ACKERMAN.

GRADING MACHINE.

APPLICATION FILED JUNE 13, 1910.

988,684.

Patented Apr. 4, 1911.

5 SHEETS—SHEET 1.

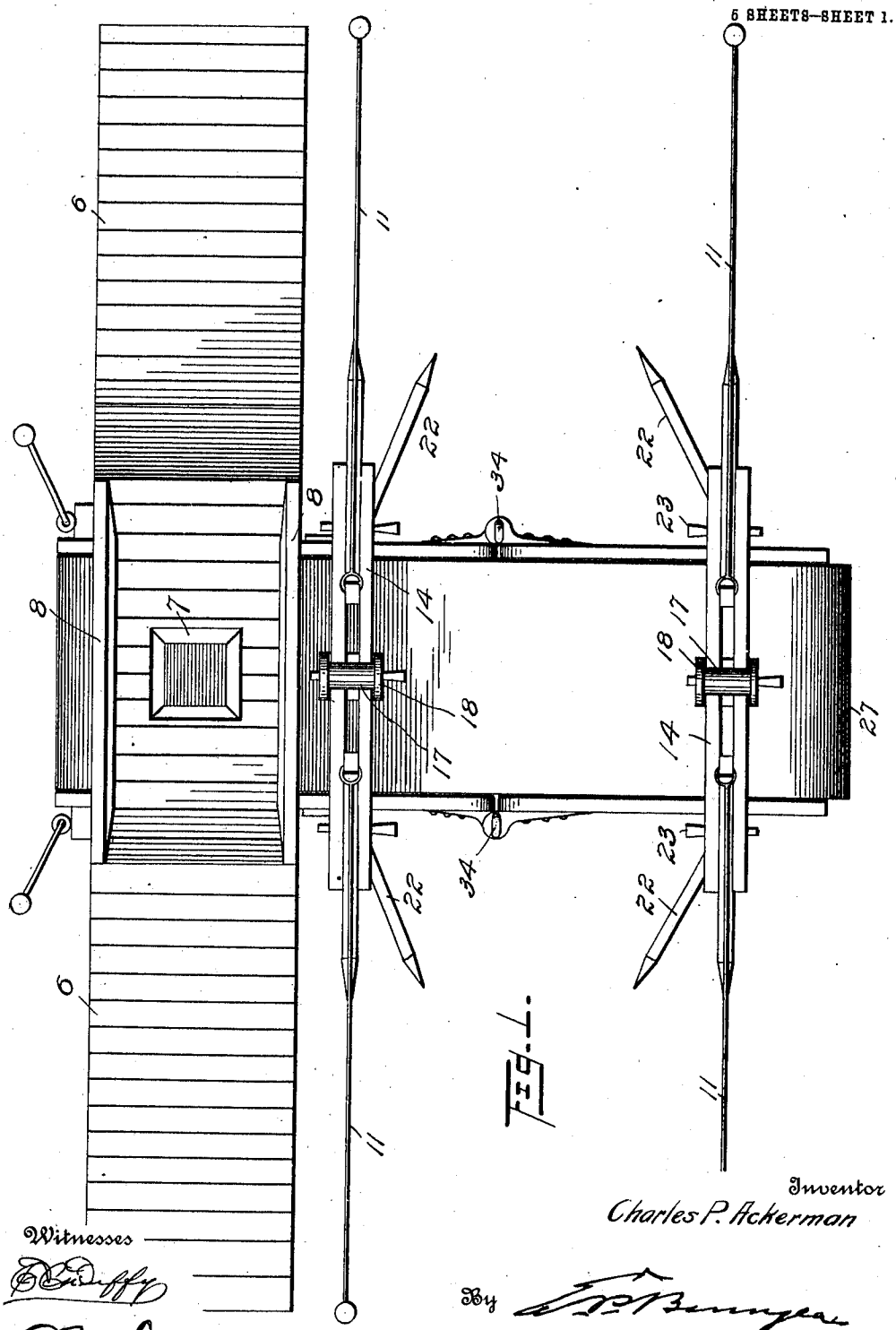

Fig. 1.

Witnesses

G. M. Sawyer.

Inventor

Charles P. Ackerman

By

Attorney

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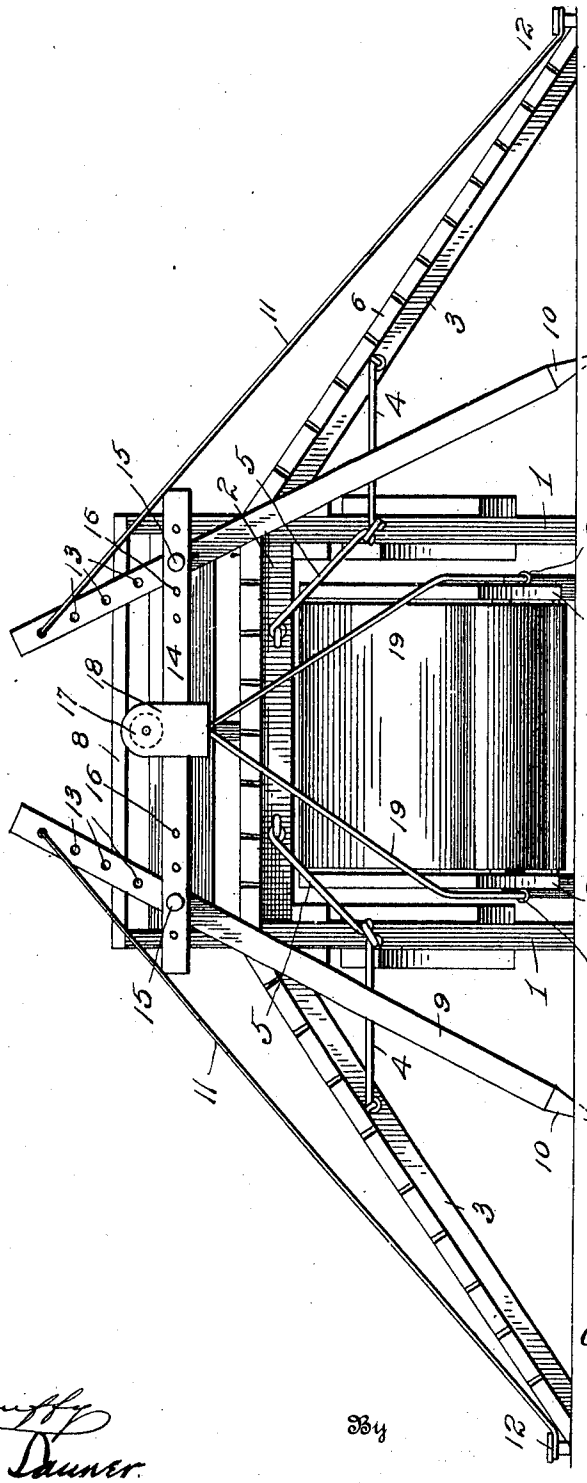

Fig. 2.

Witnesses

C. C. Dunlap

A. M. Dauner

Inventor

Charles P. Ackerman

By

Attorney

C. P. ACKERMAN.

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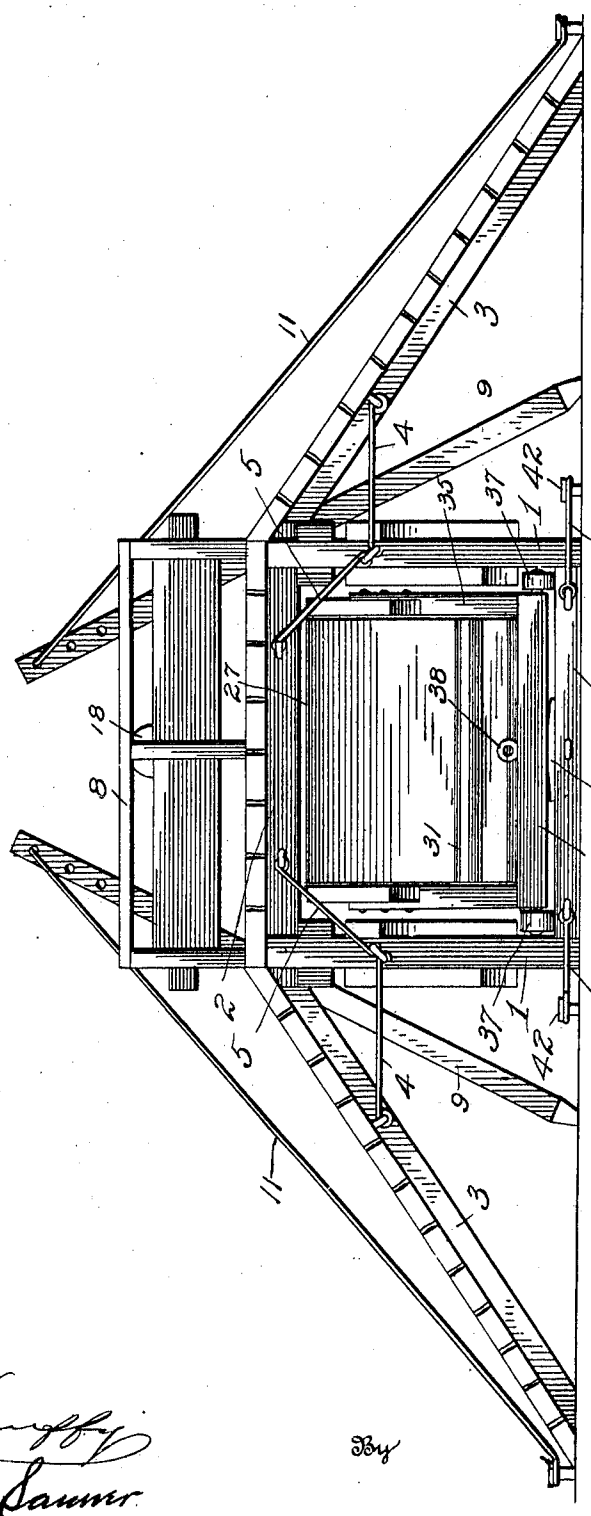

Fig. 3.

Witnesses

A. M Sawyer

Inventor

Charles P. Ackerman

By

Attorney

C. P. ACKERMAN.

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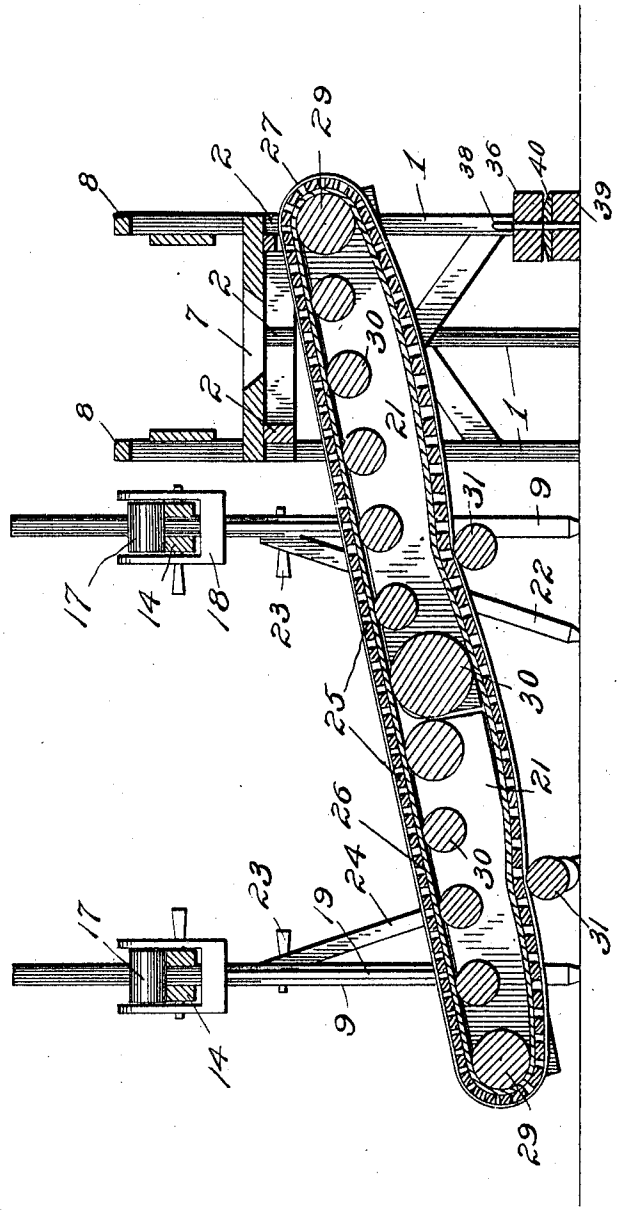

Fig. 4.

Witnesses

E. L. Duffy

A. M. Bauner.

Inventor

Charles P. Ackerman

By

Attorney

C. P. ACKERMAN.

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5 SHEETS—SHEET 5.

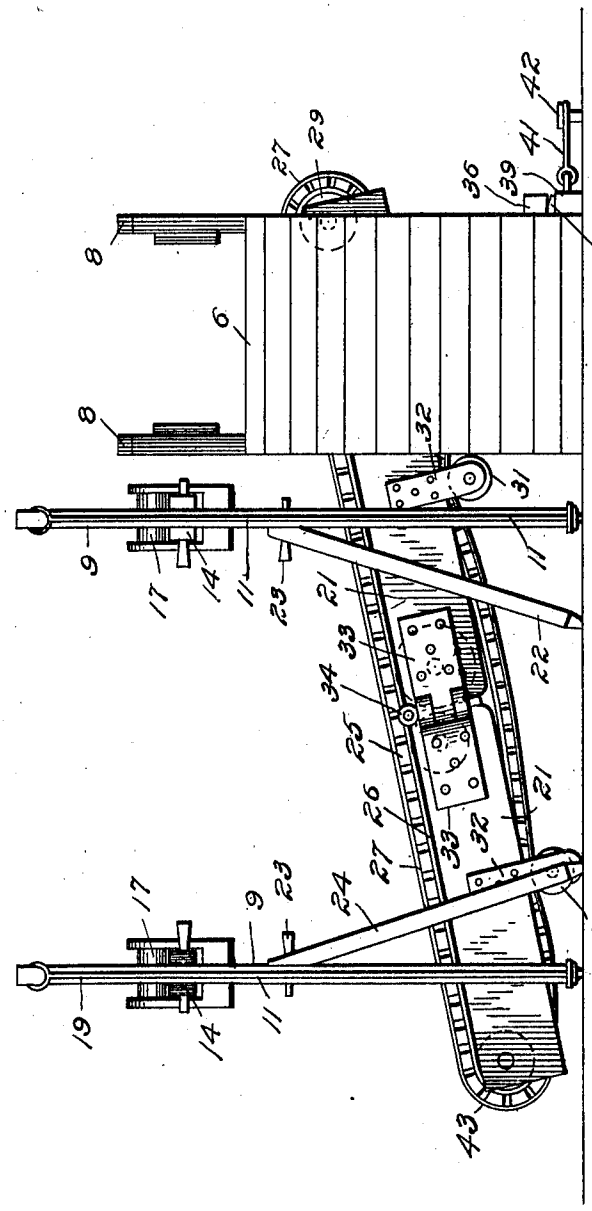

Fig. 5.

Inventor
Charles P. Ackerman

Witnesses
E. L. Duffy
A. M. Lanner.

By Attorney

UNITED STATES PATENT OFFICE.

CHARLES P. ACKERMAN, OF ALBION, NEBRASKA.

GRADING-MACHINE.

988,684. Specification of Letters Patent. Patented Apr. 4, 1911.

Application filed June 13, 1910. Serial No. 566,636.

To all whom it may concern:

Be it known that I, CHARLES P. ACKERMAN, a citizen of the United States, residing at Albion, in the county of Boone and State of Nebraska, have invented certain new and useful Improvements in Grading-Machines, of which the following is a specification.

This invention relates to road grading machines, and one of the principal objects of the same is to provide simple and efficient means for depositing dirt taken from a cut in a road at any required hollow point at a suitable distance from the grading machine.

Another object of the invention is to provide endless carriers for conveying dirt to any required point, said endless carriers being operated by the weight of the dirt deposited thereon.

Another object of the invention is to provide a grading machine comprising inclined drive-ways for carrying the dirt up to the top of the machine where said dirt is deposited upon an endless carrier, and by the weight of the dirt the carrier is operated to deposit the dirt at any required point within a certain radius of the machine.

Still another object of the invention is to provide means for connecting a series of endless carriers to lead off from the machine and to be actuated by the weight of the dirt thereon, said carriers being adjustably connected to the machine so that any required inclination may be given to the endless carriers, depending upon the distance at which the dirt is to be deposited.

Another object of the invention is to provide means for swinging the endless carriers so that the dirt may be deposited at one side or the other of the road, or upon one side or the other of the machine.

Another object of the invention is to provide a grading machine which can be readily taken apart and folded into a comparatively small compass for loading upon a wagon or wagons to be conveyed to the place that the grading work is to be done.

These and other objects may be attained by means of the construction illustrated in the accompanying drawing, in which,

Figure 1 is a top plan view of a grading machine made in accordance with my invention and shown set up in position for use. Fig. 2 is an end elevation of the machine. Fig. 3 is also an end elevation looking toward the opposite end of the machine from that shown in Fig. 2. Fig. 4 is a longitudinal sectional view of the machine. Fig. 5 is a side elevation of the machine.

Referring to the drawing the numerals 1 designate the uprights of the frame of the machine and connected together by means of cross bars 2 at their upper ends. Inclined supports 3 are connected to the uprights 1 by means of stay bars 4. Metal braces 5 are connected to the uprights 1 and cross bars 2. Inclined drive-ways made up of suitable planks 6 are placed upon the supports 3 and extend up and over the top of the frame to permit the teams to carry the dirt up and to deposit it in the opening or hopper 7 immediately over the endless carrier. A suitable railing 8 is supported upon the top of the machine at opposite sides of the hopper 7. Inclined supporting members 9 pointed at their lower ends, as at 10, and adapted to be driven into the ground with their upper ends converging, as shown more particularly in Fig. 2, are provided with guy cables 11, which extend from stakes 12 driven into the ground to the upper ends of the supporting members 9. These supporting members are provided with a series of perforations 13 for permitting the adjustment of a cross bar 14, said cross bar being held in adjusted position by means of suitable pins 15 which engage holes 16 in the cross bars 14 and the holes 13 in the members 9. Supported upon the cross bar 14 is a roller 17 mounted in a stirrup 18. Metal supports 19 are connected at their upper ends to the stirrup 18 and the lower ends of said supports 19 are engaged in eyes 20 secured to the side 21 of the endless carrier. By means of this adjustment the endless carrier may be raised or lowered to give the required inclination for carrying off the dirt.

Braces 22 are connected at their upper ends to the members by means of suitable pins 23, while the lower ends of said braces are pointed and adapted to be driven into the ground. At a distance from the machine similar supporting members 9 are provided with the adjusted cross bar 14 of substantially identical construction with those already described, and similar supporting rods 19 are provided for supporting the outer end of the endless carrier, as shown more particularly in Figs. 4 and 5. Inclined members 24 are provided for the outer members 9.

The endless carrier comprises a series of

slats 25 connected together a suitable distance apart by means of flexible bands 26 and covering the slats 25 is an endless apron 27 of canvas or other suitable material adapted to cover the slats 25 and thus prevent the dirt from passing through between said slats. Rollers 29 and 29 are journaled at the ends of the side members 21 of the carrier and a series of rollers 30 of varying sizes are journaled in the side members at suitable distances apart to support the upper stretch of the carrier. Suitable rollers 31 are journaled to brackets 32 secured to the sides 21 for supporting the lower stretch or sag of the carrier. Two or more of the side members 21 may be connected together by means of suitable hinges 33 which are detachably pivoted by means of pins 34 so as to permit the folding of the carrier frame for conveying the same from place to place upon a wagon or other vehicle. The inner end of the carrier is supported upon a frame 35 provided with a cross bar 36 having friction rollers or wheels 37 journaled thereto, as shown more particularly in Fig. 3. The bar 36 upon which the frame 35 is supported is pivotally mounted by means of a pin 38 upon a sill 39 having a curved bearing plate 40 secured to the upper surface thereof. Stay members 41 are secured to the bar 39 and connected by means of stakes 42 driven into the ground at the sides of the machine. By means of the pin 38 the frame 35 may be swung from side to side to direct the endless carrier to one side or the other of the machine, so that the outer end 43 of the carrier may be disposed out of alinement upon either side of the machine for depositing the dirt at the required place.

Any suitable number of carriers may be connected together for conveying the dirt any suitable distance and the required inclination may be given to the carrier by the adjusting devices previously described.

From the foregoing it will be obvious that the machine may be set up at any required point to receive the dirt through the opening 7 to be deposited upon the endless carrier and conveyed to the required point for discharging the same, the endless carrier being operated automatically by the weight of the dirt deposited on said carrier. It will also be obvious that the carrier may be swung laterally to deposit the dirt at any required place. The machine can be quickly set up and can be readily taken apart and placed upon a wagon or vehicle to be carried to the place where it is desired to do the grading.

My invention is of comparatively simple construction, can be manufactured at comparatively low cost and is exceedingly efficient for its purpose.

I claim:

1. In a grading machine, a frame, drive-ways leading to the top of said frame and provided with a discharge opening, an endless carrier mounted in the frame, means for moving the carrier laterally to discharge the dirt at different points out of alinement with the center of the machine, and means for adjusting the inclination of the carrier.

2. In a machine of the character described, a frame, drive-ways leading to the top of the frame and provided with a discharge opening, supporting devices provided with adjusting holes in the upper ends thereof, a cross bar connected to said supporting devices by adjusting pins, a roller mounted to move on the cross bar, a stirrup in which the roller is mounted, supporting members connected to the stirrup, an endless carrier to which said supporting devices are connected, and means for swinging the carrier.

3. In a grading machine, a frame, inclined drive-ways leading to the top of said frame and provided with a discharge opening, an inclined endless carrier mounted in the frame, a cross bar vertically adjustable upon the frame, a stirrup provided with rollers supported upon said cross bar, supports connected to said stirrup at one end and at the opposite end to said endless carrier for adjusting the inclination of said carrier.

4. In a machine of the character described, a frame, drive-ways leading to the top of the frame and provided with a discharge opening, an endless carrier mounted on rollers and disposed underneath the opening in said drive-ways, means for adjusting the inclination of the carrier at the outer end thereof, and means for adjusting the carrier laterally at its discharge end to deposit the dirt at different points out of alinement with the center of the machine.

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

CHARLES P. ACKERMAN.

Witnesses:
FRANK CLARK,
FRANK A. DOTEN.