A. DOMINGUES.

CANE HARVESTER.

APPLICATION FILED NOV. 18, 1909.

982,129.

Patented Jan. 17, 1911.

3 SHEETS—SHEET 1.

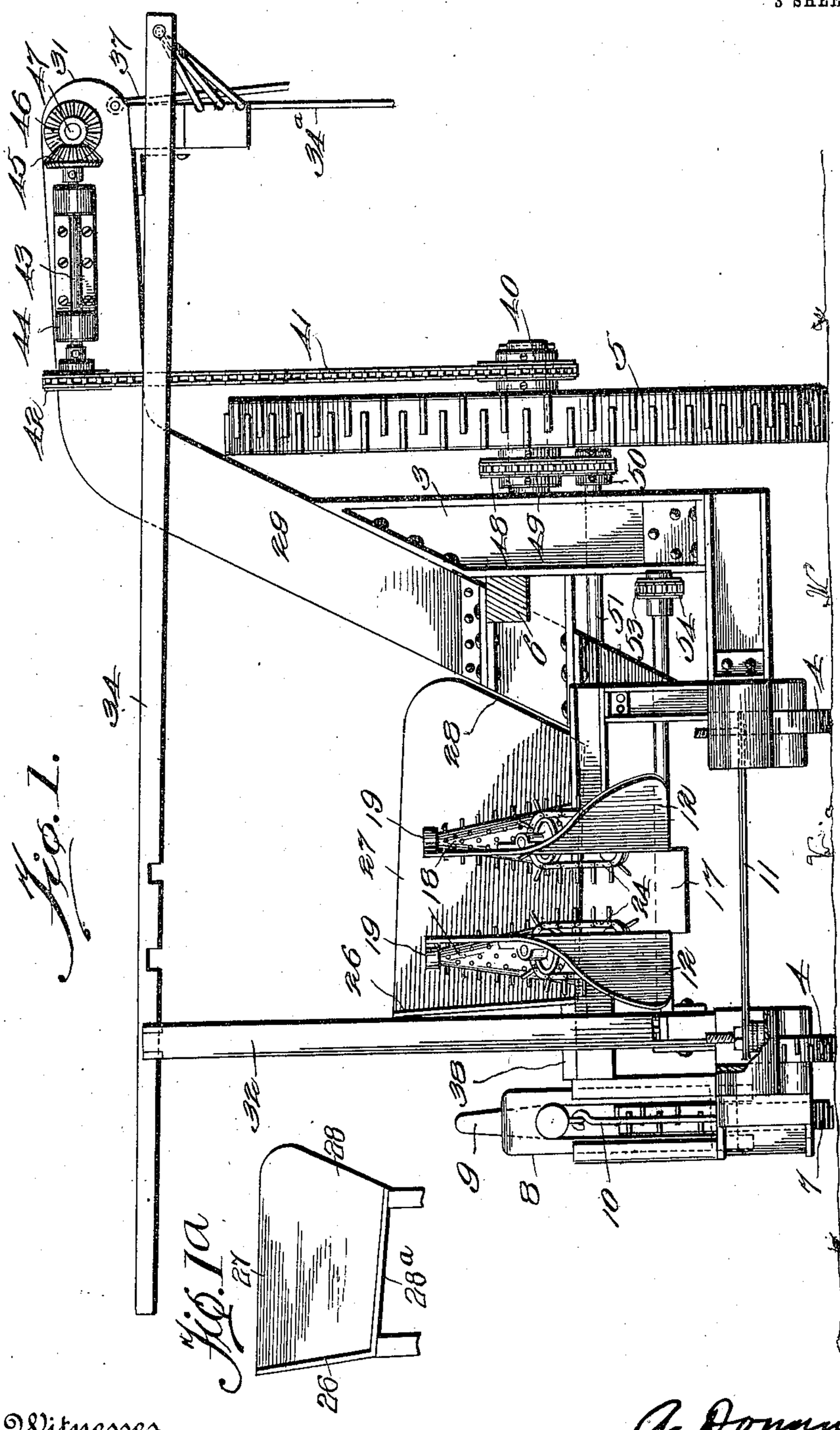

Fig. 1.

Fig. 1a

Witnesses

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3 SHEETS—SHEET 2.

Fig. 5.

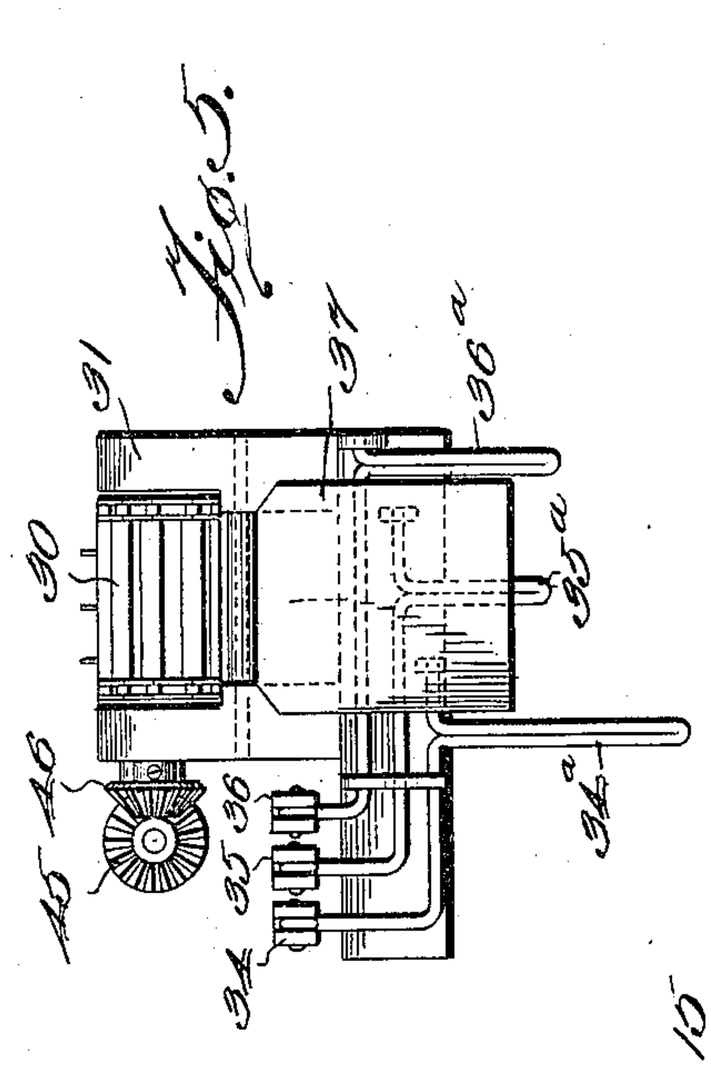

Fig. 2.

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3 SHEETS—SHEET 3.

Fig. 4.

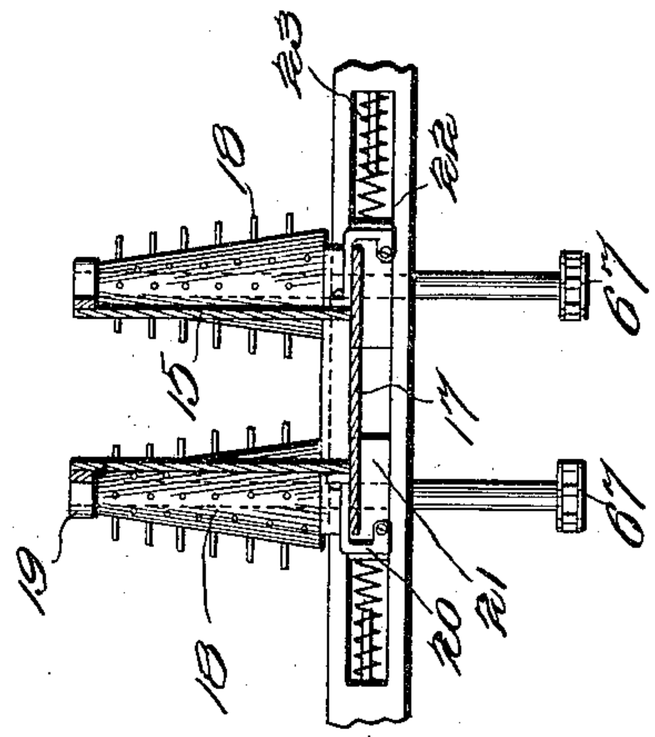
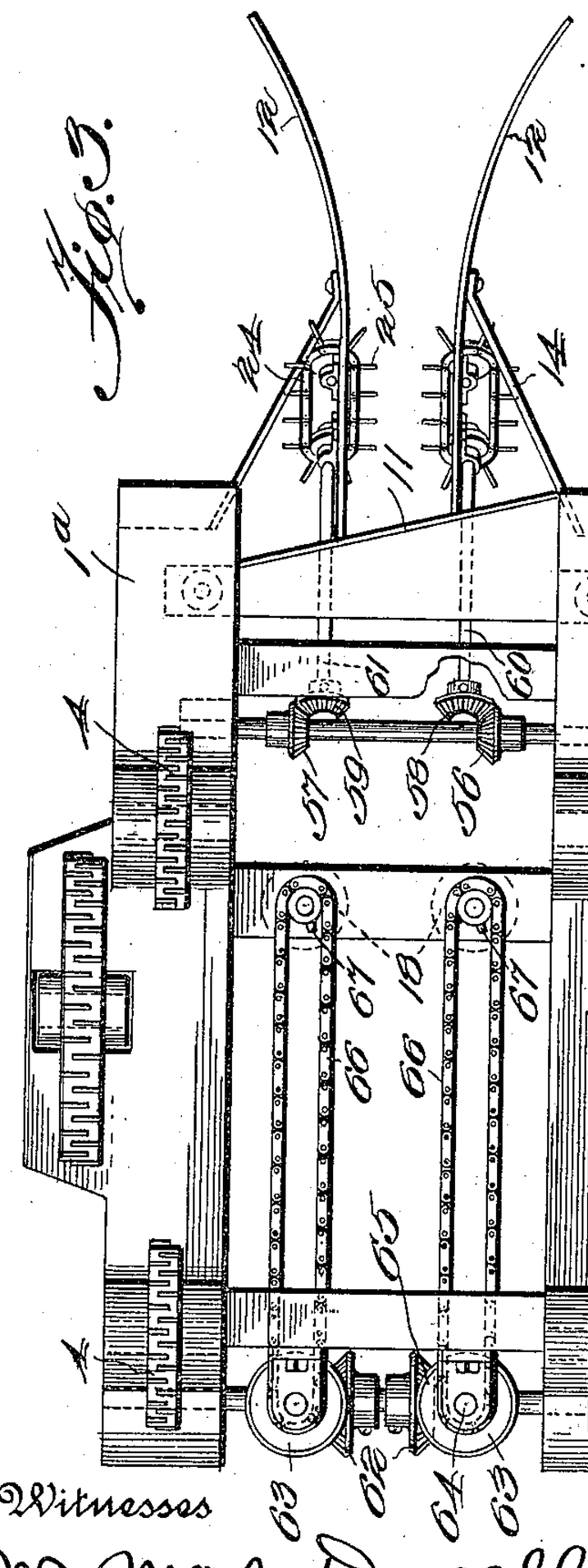


Fig. 3.



Witnesses

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UNITED STATES PATENT OFFICE.

ALFRED DOMINGUES, OF JEANERETTE, LOUISIANA.

CANE-HARVESTER.

982,129. Specification of Letters Patent. **Patented Jan. 17, 1911.**

Application filed November 18, 1909. Serial No. 528,828.

To all whom it may concern:

Be it known that I, ALFRED DOMINGUES, a citizen of the United States, residing at Jeanerette, in the parish of Iberia and State of Louisiana, have invented certain new and useful Improvements in Cane-Harvesters; 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.

This invention relates to improvements in cane harvesters, and the object of the invention is to provide a compact and effective machine capable of being propelled over a field to cut down the rows of sugar cane and deliver it directly to an accompanying cane cart.

With this and other objects in view the invention consists in the arrangement and combinations of parts hereinafter referred to and more particularly pointed out in the claims.

While the invention is not restricted to the exact details shown and described, still for the purpose of disclosure reference is had to the accompanying drawings illustrating a practical embodiment of the invention, in which drawings like numerals designate the same parts in the several views, and in which—

Figure 1 is a view in front elevation of the improved cane harvester. Fig. 1ª is a reduced view in front elevation of the receptacle showing the open front side and sloping bottom thereof. Fig. 2 is a view in side elevation of the same. Fig. 3 is an underneath plan view. Fig. 4 is a fragmentary view in detail looking from the front of the machine, a section being taken through the walls of the guiding trough immediately in front of the toothed cone rollers. Fig. 5 is a fragmentary detail view looking toward the discharge end of the conveyer.

1 designates a suitable supporting frame, which may be made of wood or other material, but which has been illustrated as being made from pressed metal, said frame consisting of a pair of runner-like base members 1ª, having cross bars 2, and on one side being provided with vertically disposed framework 3, acting as a support for a conveyer and traction wheel hereinafter referred to. The base frame is mounted on the wheels 4, and 5 designates the large traction wheel journaled to the upright framework 3, and normally the machine is propelled in a straight line along the cane row when suitable power is applied, the means in the present illustration comprising a suitably mounted pole 6 for hitching up a team of mules.

On the opposite side of the machine, from the large traction wheel 5 and on a line with the axis thereof, is a smaller wheel 7 journaled in a vertically movable box 8 slotted to receive the lever 9, the forward end of which is connected to the framework 1 through the link or rod 10. Normally the wheel 7 is held elevated above the lower periphery of the wheels 4 and 5, but when it is desired to turn the machine, by pressing downwardly on the rear end of the lever 9, the movable box 8 is forced downwardly, and the wheel 7 contacting the ground the framework, with the wheels 4, are elevated above the ground so that the whole machine is supported on the wheels 5 and 7, and the machine may be readily turned at the end of the row or otherwise.

11 designates the knife or cutter supported on the runners 1ª, and this knife may be adjusted to accommodate itself to the height of the cane row by having the ends of same seated in recesses formed in the top of the runners and provided with means for securely holding the ends of the knife therein. Where it is desired to adjust the height of the knife, washers might be removed from or placed beneath the lower face of same to lower or raise the height of the knife, as desired.

Extending forwardly of the knife are the flaring guide plates 12 rigidly supported by the bracket arms 13 and 14, and at the rear of these guide plates, and forming a continuation thereof, are the walls 15 hinged, as at 16, to the guide plates, and forming the side walls of a trough having a bottom 17 extending from the rear of the walls 15 downwardly to a position above the knife. At the rear open end of this trough, and at each side thereof, is arranged a vertical roller provided with lateral teeth, for pulling the cut cane through the trough. These rollers are preferably conical, as shown at 18, and they are so mounted as to have a slight lateral play to compensate for the differences in the diameter of the cane stalks. In order to allow for this slight lateral movement the tops of the rollers are journaled in bearings, as at 19, carried by the walls 15 of the trough, and the lower edges of the walls of

the trough, which are disconnected from the bottom 17, are secured to the angle bars 20, which latter are in turn secured at their lower ends to movable blocks 21 slidably mounted in a recess 22 formed in one of the cross bars, and at opposite ends of this recess are located springs 23 engaging against the blocks 21 and normally forcing them toward each other.

Mounted on the guide plates 12 are a pair of opposed conveyer chains, working through slots in the guide plates and operating upwardly and rearwardly on the inside of the guide plates. These conveyer chains 24 are of the endless type and are provided with gripping fingers 25, so that as the machine is forced along the cane row these gripping fingers 25 will grip the cane on each side and tend to pull the stalks upwardly and rearwardly, firmly holding the same against the knife during the severing operation. The sprocket wheels carrying these chains are operated by suitable gearing referred to hereinafter.

Disposed behind the conical rollers 18 is arranged a receptacle which may be removably supported on legs or otherwise. This receptacle has a side wall 26 and a rear wall 27, but is open at its forward end and also opens at its inner face, as at 28, the bottom 28[a] of the receptacle inclining downwardly from the side wall 26 toward the open side 28, as shown in Figs. 1 and 1[a].

29 designates the sides of an endless conveyer 30, which latter is of the usual type, comprising a pair of sprocket chains having cross slats provided with fingers, and this endless conveyer, at its lower end, extends immediately adjacent the open side of the receptacle, and at its upper end projects in a horizontal direction, as at 31, to one side of the machine.

32 designates an upright frame having a notched piece 33 for receiving the notched ends of operating levers 34, 35 and 36, these levers being connected at their other ends with crank arms terminating in the projecting fingers 34[a], 35[a], and 36[a], the finger 35[a] operating behind a hinged plate 37 disposed at the discharge end of the conveyer. It will be observed from Fig. 5 that the fingers 34[a] and 36[a] are disposed at the sides of the plate 37. The object of these levers and arms is to control the discharge of the cane, for it will be observed that by proper manipulation the finger 34[a] may be elevated, which will tilt the ejected cane to the rear of the cart below, whereas if the finger 36[a] is elevated it will tilt the ejected cane to the front of the cart. Also if the plate 37 is elevated the cane will be rolled off to the far side of the cart, and if all of these members are allowed to hang downwardly in their normal position the cane will roll and drop off into the near side of the cart.

38 represents a platform extending along the side of the machine immediately adjacent the wall 26 of the cut cane receptacle, and this platform enables the operator to readily shift the levers 34, 35 and 36, as well as the lever 9.

Having thus described the essential details of the machine and briefly referred to the mode of operation, I will now describe the gearing driving the various operating parts. 40 is a sprocket wheel carried by the outside face of the traction wheel 5, and meshing with the sprocket chain 41 leading to a sprocket wheel 42 on a shaft 43, journaled, as at 44, to the side plates of the endless conveyer, the shaft 43 having at its other end a bevel gear wheel 45 meshing with a bevel gear wheel 46 on the transverse shaft 47 in the end of the conveyer frame, which shaft 47 is provided with suitable sprocket wheels carrying the endless chains of the endless carrier 30.

On the inside of the traction wheel 5 is mounted a second sprocket wheel 48, over which reeves the sprocket chain 49 running rearwardly to a sprocket wheel 50 on a transverse shaft 51 at the rear of the machine. This transverse shaft 51 is provided with another sprocket wheel 52, over which reeves the sprocket chain 53 (Fig. 3), extending forwardly and meshing with the sprocket wheel 54 on a forward transverse shaft 55 carrying the bevel gear wheels 56 and 57, respectively meshing with the bevel gear wheels 58 and 59 on the ends of the forwardly and upwardly extending shafts 60 and 61 disposed on the outside of said guide plates and carrying sprocket wheels for the conveyer chains 24. Also referring more particularly to Fig. 3, the rear shaft 51 is provided with the bevel gear wheels 62 meshing with bevel gear wheels 63 mounted on vertical shafts 64, also carrying sprocket wheels 65, around which reeve the sprocket chains 66 meshing with the sprocket wheels 67 (Fig. 4) on the bottom of the shafts carrying the drawing cones 18.

In the foregoing description the operation of the various parts having been briefly explained, it is thought that a repeated statement of operation is unnecessary, and having thus described the invention, what I claim is:

1. In a cane harvester, the combination of a movable support, guide members carried thereby, cutting means, feeding means operating to force the cane against said cutting means, engaging rollers at the rear of said feeding means, and extending above same, operating to grasp the upper portion of the cut cane stalks as they fall rearwardly therebetween for pulling the severed cane onto the machine, and means operating said rollers, substantially as described.

2. In a cane harvester, the combination of

a movable support, guide members carried thereby, cutting means, feeding means, engaging rollers extending above and disposed a substantial distance rearwardly of said feeding means, said rollers being adapted to immediately grasp the upper ends of the cut cane stalks as they fall rearwardly therebetween for pulling the severed cane onto the machine, and means for operating said rollers, substantially as described.

3. In a cane harvester, the combination of a movable support, cutting means, feeding means operating to force and hold the cane stalks against said cutting means, a pair of vertically disposed rollers having gripping teeth thereon located at the rear of said cutting means and said feeding means and extending above said feeding means to receive the upper portions of the cut cane stalks as they fall rearwardly, and means for rotating said rollers for pulling said cane onto the machine, substantially as described.

4. In a cane harvester, the combination of a movable support, cutting means, feeding means for holding the cane stalks against said cutting means, a pair of vertically disposed rollers provided with gripping teeth, said rollers being located at the rear of said cutting means and extending above said feeding means, and said rollers being capable of limited lateral movement to compensate for different diameters of cane stalks passing therebetween, and means for revolving said rollers to pull the severed cane onto the machine, substantially as described.

5. In a cane harvester, the combination of a movable support, cutting means, feeding means, a pair of vertically disposed conical rollers located rearwardly of said cutting and said feeding means and extending above said feeding means to receive the cut cane stalks therebetween, and means rotating said rollers to pull the severed stalks onto the machine, substantially as described.

6. In a cane harvester, the combination of a movable support, a pair of spaced guide plates carried thereby, severing means disposed transversely of said guide plates, feeding means, an open ended trough forming a continuation of said guide plates and having a bottom inclining downwardly toward said severing means, a pair of vertically disposed rollers at the rear of said open ended trough and extending above said feeding means for pulling the cut cane onto the machine, and means for operating said rollers, substantially as described.

7. In a cane harvester, the combination of a movable support, a pair of spaced guide plates carried thereby, an open ended trough at the rear of said guide plates and having its side walls hinged to said guide plates, a pair of vertically disposed rollers connected to the inner ends of said hinged walls, blocks slidingly mounted on said movable support below said rollers, angle bars connected at one end to said movable blocks and at their other ends to said hinged walls, and springs between said movable blocks and said movable support normally tending to force said rollers toward each other, substantially as described.

8. In a cane harvester, the combination of a movable support, severing means carried thereby, feeding means adjacent said severing means, a pair of vertically disposed rollers located rearwardly of said cutting means and said feeding means and extending above said feeding means to receive the cut cane stalks therebetween, means rotating said rollers to pull the severed stalks onto the machine, an endless conveyer for carrying off the cut cane, and a receptacle between said vertical rollers and conveyer, said receptacle having a side and rear end wall and being open adjacent said rollers and conveyer, and said receptacle being provided with a bottom inclining from its side wall downwardly toward said conveyer, whereby said receptacle receives the cut cane from said rollers and conducts it to said endless conveyer, substantially as described.

9. In a cane harvester, the combination of a movable support, a pair of spaced guide plates carried at one end thereof, said guide plates having flat faces disposed substantially in vertical planes and forming a walled guideway, a knife disposed below the lower edges of said guide plates, an open ended trough disposed at the rear of said guide plates provided with a downwardly and forwardly inclined bottom, a pair of endless cables having fingers projecting inwardly of said guide plates, and operating upwardly and rearwardly along the flat faces thereof for pulling the cane stalks against said knife, a pair of vertically disposed conical rollers at the upper end of said trough having roughened surfaces for pulling and guiding the severed stalks onto the machine, said rollers extending above the upper ends of said cables for receiving the upper portion of the severed stalks, a receptacle for the severed stalks, an endless conveyer leading from said receptacle, a traction wheel and gearing between said traction wheel, said endless cables, said conical rollers and said endless carrier, substantially as described.

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

ALFRED DOMINGUES.

Witnesses:
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A. J. Cammack.