

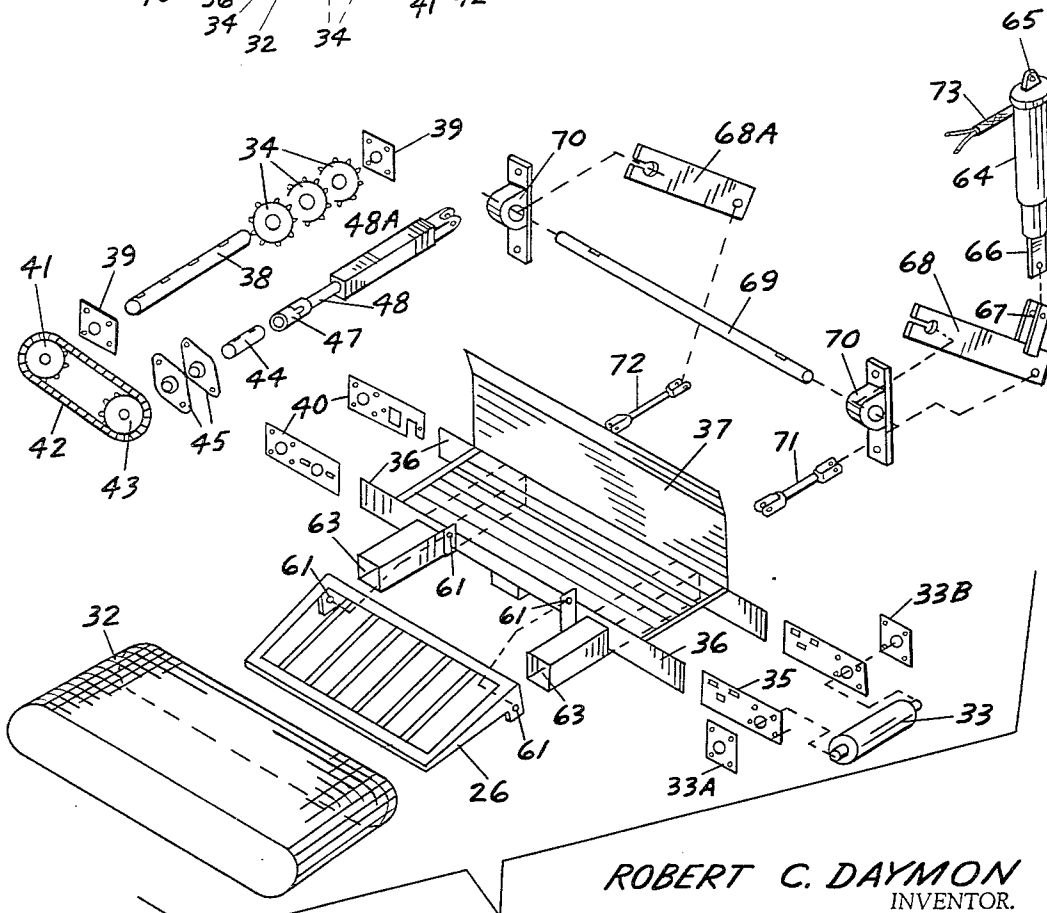
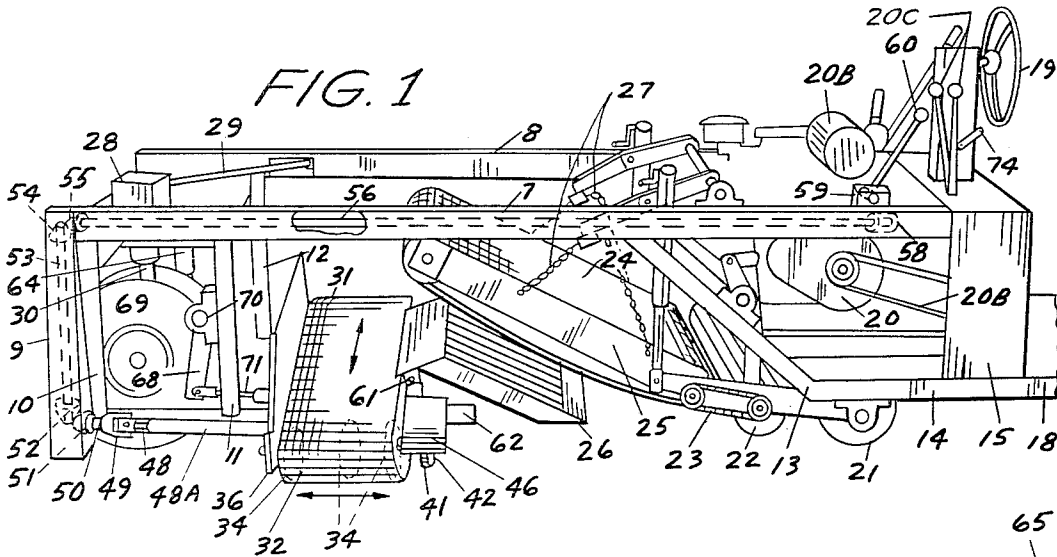
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DISCHARGE CONVEYOR DRIVE AND CONTROLS FOR SOD ROLLING MACHINE

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DISCHARGE CONVEYOR DRIVE AND CONTROLS FOR SOD ROLLING MACHINE

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4 Claims

ABSTRACT OF THE DISCLOSURE

This application discloses a novel mechanism for driving and controlling the discharge conveyor of a sod rolling machine. The device embodying the invention encompasses means for driving in either direction the discharge conveyor. It also discloses power actuated means for moving the discharge conveyor and its associated parts, including the inclined loading ramp, forwardly and backwardly with respect to the sod rolling vehicle frame. One of the features of the invention resides in the use of certain of the principal structural members of the vehicle for supporting and housing parts of the conveyor drive means.

This invention relates to sod rolling machines, such as disclosed in my co-pending application, Ser. No. 577,067, filed Sept. 2, 1966, of which this may be considered a continuation-in-part.

An object of the invention is to generally improve sod rolling machine and to provide improved discharge conveyor drive means for such machines, which are simple in construction, economical to manufacture, and efficient in operation.

Another object of the invention is to provide drive means of the character indicated, which because of the overall length and type of work which it does, are subjected to intense vibration, and the damaging effects of dust, earth particles, grass and other debris, when the sod rolling machine is in operation.

Another object of the invention is to provide drive means of the character indicated which are partly enclosed in certain of the principal structural members of the sod rolling vehicle, whereby they are rigidly supported against damage by vibration and excessive wear, and are kept clean and lubricated at all times, and may be readily disassembled for inspection and replacement of parts.

Another object of the invention is to provide drive means of the character indicated which are actuated by the main propulsion unit of the vehicle and may be remotely controlled by means within the reach of a riding operator.

Another object of the invention is to provide driving and controlling means for a discharge conveyor for a sod rolling machine, whereby the discharge conveyor, its material guide element, and its inclined loading ramp, may be moved forwardly and rearwardly with respect to the chassis of the vehicle by means remotely controlled at a riding operator station, carried by the vehicle.

The foregoing and other objects and advantages of the invention will become more apparent as the description proceeds, reference being made from time to time to the accompanying drawing, forming part of the within disclosure, in which drawing:

FIG. 1 is a side elevational view, with parts broken away, of a riding sod rolling machine equipped with the device embodying the invention.

FIG. 2 is an exploded view of some of the working parts incorporated in the invention device.

Referring now more particularly to the drawing, it will be understood that in the embodiment herein disclosed the reference characters 7 and 8 indicate the principal longitudinal, structural, and load carrying members of the sod rolling machine.

In addition to the principal structural members 7 and 8, the chassis of the sod rolling machine includes other structural members 9, 10, 11, 12, 13, 14 and 15.

In addition to the structural members previously indicated, the sod rolling machine also includes a rear operator platform 18, steering wheel 19, gasoline engine 20, drive chain 20A, gas tank 20B, control levels 20C, support and propulsion roller 21, sod roll starting roller 22, drive chain 23, inclined conveyor 24, auxiliary frame 25, inclined ramp 26, suspension means 27, front wheel steering mechanism 28, 29 and 30, all of which comprise integral parts of the sod rolling machine and form no part of the instant invention, except as they are combined with the elements hereinafter described.

The instant invention resides in the transverse discharge conveyor, which is generally indicated by the reference character 31 (FIG. 1) and which consists of an endless open mesh belt 32, which passes over an idler roller 33 (FIG. 2), and at the opposite end meshes with a plurality of sprockets 34, which idler roller 33 is mounted for rotation in bearing members 33A and 33B, which are secured by any suitable means to the extensions 35 of the sub-frame members 36, forming part of the discharge conveyor carriage.

The sub-frame, or carriage 36 is provided with a material guide member 37, which holds the sod rolls in alignment as they move across the carriage with the discharge conveyor belt 32.

The sprockets 34 are keyed to a shaft 38, which is supported by, and rotates in, suitable bearing members 39, which are mounted on the frame extensions 40, which are secured by any suitable means to the sub-frame 36. The teeth of the sprockets 34 mesh with the openings in the belt 32 to drive the belt 32.

The shaft 38 has keyed to it at one end another sprocket wheel 41, which is driven by a chain 42, which in turn meshes with another sprocket 43, which is keyed to a countershaft 44, which rotates in suitable bearings 45, mounted on the side of the sub-frame 36, and is covered by a member 46.

The shaft 44 is coupled, as at 47, to a telescoping drive shaft 48 and 48A, which is in turn connected by a universal joint 49, to a jack shaft 50 (FIG. 1) at the end of which is a gear 51, which meshes with a gear 52 carried at the end of another shaft 53, which has at its upper end a gear 54, the latter meshing with a gear 55, which is carried at the end of a long drive shaft 56, which extends through the structural member 7, and is connected by means of a worm gear 58 to the power takeoff 59, which is part of the motor 20. The power takeoff 59 includes a reversible gear box, which is controlled by the shift lever 60 whereby the endless conveyor 32 may be driven in either direction.

It will be understood that the drive means 51-56 are all supported within and housed within the structural members 7 and 9 of the machine, where they are protected against dust, dirt, grass clippings and other debris which might be stirred up in the operation of the device.

A control lever 60, which is pivoted for forward and backward movement, is arranged to change the direction of rotation of the power takeoff 59, so that the drive mechanism 48-56 may be driven in either direction, whereby the discharge belt 32 may be driven to the left or to the right, with respect to the chassis of the machine, as shown in FIG. 1.

The inclined ramp 26 of the machine (FIG. 1) is at-

tached to the sub-frame 36, as at 61, by machine screws or other suitable means, and is movable with the sub-frame 36.

I also provide means for shifting the sub-frame 36, the guide member 37, and the inclined ramp 26 in a forwardly and rearwardly direction with respect to the chassis of the sod rolling machine, by providing frame extensions 62 (FIG. 1), upon which are slidably received the tunnel like members 63 (FIG. 2), which are secured to the sub-frame members 36.

The assembly 26, 36, and 37, is slidably mounted on the frame extension 62, and is movable in a forward and rearward direction on the vehicle frame by means of a double acting, electrically operated, power jack 64, which is bolted or otherwise secured, as at 65, to one of the main frame members.

The lower end of the power jack plunger 66 is pivoted, as at 67, to an L-shaped arm 68, which is keyed at the other end, to a shaft 69, which is rotatably supported in bearings 70, which are carried on the frame members 11.

A second lever 68A is secured for rotation with the shaft 69. The lower ends of the levers 68 and 68A are attached to push-pull rods 71 and 72, which in turn are connected to the frame 66.

The power jack 64 is connected through leads 73 to the electrical system of the sod rolling machine and is controlled by means of a switch lever 74, located on the control panel of the vehicle, so that the sub-frame 36, and the assembly carried by it, may be moved in a forward or rearward direction with respect to the longitudinal axis of the sod rolling machine.

This is an important feature of the invention as it enables the operator to vary the distance between the working surface of the inclined ramp 26 and the bottom of the inclined conveyor 24. This is necessary for the reason that various thicknesses of cut sod produces rolls of sod having different diameters. This feature, coupled with the other adjustment features disclosed in other co-pending applications, makes it possible for the sod rolling machine operator to make infinite adjustments to the operating parts of the machine, so that the varying conditions of sod production may be compensated for.

It is believed that the operation of the device is obvious from the foregoing description.

Having described my invention, what I claim and desired to secure by Letters Patent, is:

1. In a sod rolling machine having an elongated frame spaced above the ground, a rearwardly mounted operator support, propulsion means on said frame, and sod rolling

means including an endless belt pivotally suspended from said frame intermedially thereof, the improvement consisting of bar members mounted below said frame and extending from the front of the frame to a point below said endless belt, a sub-frame slidably mounted on said bar members and movable longitudinally relative to said frame and said endless belt, said subframe having an inclined ramp secured thereto and movable therewith, said ramp co-operating with said endless belt to roll cut sod, double acting power means for sliding said sub-frame and said ramp on said bar members, and means adjacent said operator support for remotely controlling said power means.

2. The structure of claim 1, including a transverse endless belt mounted for rotation in forward and reverse directions on said sub-frame, means connected to said propulsion means for driving said transverse endless belt, and means adjacent said operator support for controlling said driving means.

3. The structure of claim 1, including a transverse endless belt mounted for rotation in forward and reverse directions on said sub-frame, means connected to said propulsion means for driving said transverse endless belt, and means adjacent said operator support for controlling said driving means, said last named driving means being housed substantially throughout their length within certain of the principal structural members of said frame.

4. The structure of claim 1, including a transverse endless belt mounted for rotation in forward and reverse directions on said sub-frame, means connected to said propulsion means for driving said transverse endless belt, and means adjacent said operator support for controlling said driving means, there being at least one material guide member secured to said sub-frame adjacent the said transverse endless belt.

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