

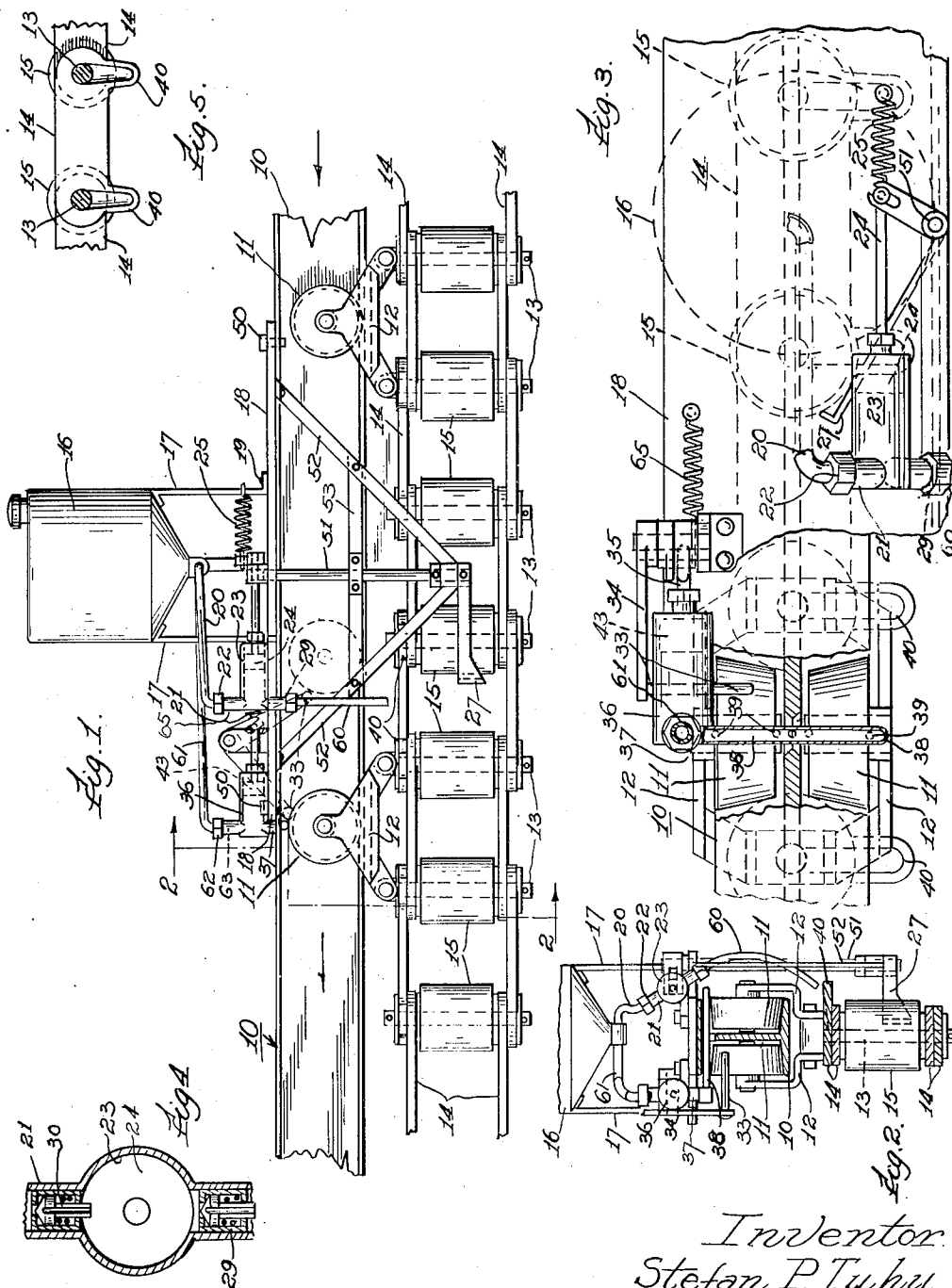
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AUTOMATIC CONVEYER LUBRICATOR

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AUTOMATIC CONVEYER LUBRICATOR

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1 Claim. (Cl. 184—15)

My invention relates to a device for automatically oiling the rollers, links, rods and wheels of a continuous conveyer mechanism.

Among the objects of my invention are to provide a means for automatically supplying the proper amount of oil to the parts of the conveyer mechanism which need recurrent lubrication, to provide an oil supply which is controllable as to amount, so as to provide the flow of only the necessary amount of oil to avoid waste, to provide a construction which ceases to supply oil as soon as the conveyer stops moving, so as to prevent costly leakage, and such other objects, advantages, and capabilities as will later more fully appear and which are inherently possessed by my invention.

While I have shown in the accompanying drawing a preferred form of my invention, yet I desire it understood that the same is susceptible of modification and change without departing from the spirit of my invention.

Referring to the drawing, Fig. 1 is a side elevational view of my automatic conveyer lubricator; Fig. 2 is a detailed sectional view on line 2—2 of Fig. 1; Fig. 3 is an enlarged detailed top plan view of my automatic conveyer lubricator with parts broken away and in section to show my oiling means; Fig. 4 is a detailed sectional view of my oil cylinders and Fig. 5 is a detailed view of my link construction.

The conveyer mechanism selected to illustrate my invention comprises a track 10 upon which are mounted wheels 11. Wheels 11 are attached to supports 12, which are in turn fastened to rods 13 and links 14. Placed between upper and lower links 14 are rollers 15 through which rods 13 extend vertically. This comprises the conveyer mechanism to which the goods are attached.

The embodiment of my automatic oiling device selected to illustrate my invention comprises a reservoir 16, which is supported by legs 17. Legs 17 are fastened to platform 18 by means of bolts 19. Platform 18 is mounted on top of conveyer track 10 by bolts 50.

An oil line 20 is attached at one end to reservoir 16 and at the other end, by connector 22, to valve housing 21. Valve housing 21 contains an inlet valve 30, which permits the flow of oil into cylinder 23. Cylinder 23 is mounted below reservoir 16, on top of track 10. Cylinder 23 is adapted to hold the quantity of oil needed to oil the conveyer mechanism. Below inlet valve 30 and extending from cylinder 23 is outlet valve 29, which permits the flow of oil from cylinder 23

through oil line 60 to the conveyer mechanism.

The flow of oil is controlled by means of piston 24, which is contained within cylinder 23. Piston 24 is normally held at the back of cylinder 23 by means of coil spring 25. Piston 24 is adapted, however, to move forward into cylinder 23 when actuated through the movement of trip member 27.

Trip member 27 is normally held in the path of rollers 15 of the conveyer mechanism by means of braces 52, which are fastened to track 10, and also by coil spring 25. Cross bar 53 extends across the bottom of track 10 between braces 52. Trip member 27 is adapted to move rod 51 and cause piston 24 to move forward into cylinder 23. Rod 51 is movably attached to cross bar 53.

In operation, trip member 27 is struck by roller 15 and is moved outwardly by roller 15. This causes rod 51 to turn outwardly at its base and by means of linkage 31 to move piston 24 into cylinder 23 against the pressure of coil spring 25. The pressure created in cylinder 23 causes inlet valve 30 to close and outlet valve 29 to open, thus permitting the flow of oil out of cylinder 23 through outlet valve 29 and oil line 60 onto rods 13, links 14, and rollers 15. The actuation of trip member 27 is so timed that the oil will flow out of oil line 60 at the time that the parts to be oiled are directly below it.

Coil spring 25 then moves piston 24 backwardly in cylinder 23 and trip member 27 moves back into the path of rollers 15. The backward movement of piston 24 in cylinder 23 causes a vacuum which closes outlet valve 29 and opens inlet valve 30, thus permitting the flow of oil from reservoir 16 through line 20 and into cylinder 23 for the next lubrication.

In supplying the oil to rods 13, links 14, and rollers 15, it is necessary either to drill a hole through track 10 and run the oil line through that hole or to insert the oil from the side. In the embodiment illustrated in the drawing I show a means for supplying the oil from the side without drilling through track 10 by providing a lip 40 on one side of each link 14. This lip 40 receives the oil from oil line 60 and causes it to flow to rod 13 and roller 15, as well as link 14.

The device described above provides for the automatic oiling of the rods, links, and rollers of the conveyer mechanism. Oil must also be supplied to wheels 11 in order to assure proper operation of the conveyer mechanism. For this purpose, I provide a second oil line 61, which is attached at one end to oil reservoir 16, and

at the other end to valve housing 62, which contains an inlet valve 63, which is adapted to permit the flow of oil into cylinder 36. Cylinder 36 is mounted on track 10, below oil reservoir 16 and adjacent to cylinder 23. Directly below inlet valve 63 and leading from cylinder 36 is outlet valve 37, which is connected to oil line 38. Oil line 38 leads to the top of track 10, in which are drilled holes 39. Oil flowing through oil line 38 goes through holes 39 and oils wheels 11.

Cylinder 36 contains a piston 43, which is operated by means of rod 34 and trip pin 33. Piston 43 is held in normal backward position in cylinder 36 by coil springs 65. Trip pin 33 is normally in the path of wheels 11, but is adapted to move upon contact with one of the wheels 11 and cause the movement of rod 34 and piston 43. The movement of piston 43 in cylinder 36 operates in the same manner as the piston and cylinder described earlier.

My complete device in operation provides a completely automatic and safe method of oiling a conveyer mechanism. The amount of oil held and discharged by oil cylinders 23 and 36 may be controlled either by adjusting the tension of springs 25 and 65, so as to shorten the stroke of the pistons, or by inserting a block in cylinders 23 and 36, so as to prevent the full backward movement of the pistons. In this way, the oiling device may be regulated so that the proper amount of oil will be applied to each link, rod and roller and each wheel automatically. My oiling device is also so constructed that if the conveyer mechanism should stop, the oiling device will also stop and little or no oil will be wasted.

Having thus described my invention, I claim:

In a conveyer system having a track, wheels traveling on said track, supports attached at one end to said wheels and at the other end to

rods and upper links, said rods extending through rollers to lower links, and means attached to said rods or links for holding goods to be conveyed, oiling means comprising a reservoir mounted on said track, a cylinder mounted on said track beneath said reservoir, an oil line leading from said reservoir to said cylinder, said cylinder having inlet and outlet valves, a piston positioned within said cylinder and adapted to reciprocate within said cylinder, tension means adapted to hold said piston normally in outward position, said tension means adapted to move said piston outwardly within said cylinder to create a vacuum within said cylinder, to open said inlet valve and close said outlet valve, thus causing the flow of oil from said reservoir through said oil line into said cylinder, an oil tube leading from said cylinder to a point above said rods, links and rollers, braces attached at one end to the upper side of said track and converging downwardly to meet at a point beside said rollers, a trip member pivotally attached to said joined braces, a cross bar attached to the lower side of said track and at each end to one of said braces, a rod attached to said trip member at its lower end, and attached by linkage to said piston at its upper end, said rod being movably attached to said cross bar, said trip member being normally held in the path of said rollers by said braces and said piston tension means, said trip member adapted to move upon the passage of said rollers, said trip member thus causing said rod and said linkage to move said piston within said cylinder to create pressure within said cylinder to close said inlet valve and open said outlet valve, thus causing the oil within said cylinder to flow through said oil tube onto said rods, links and rollers as they pass beneath the end of said oil tube.

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