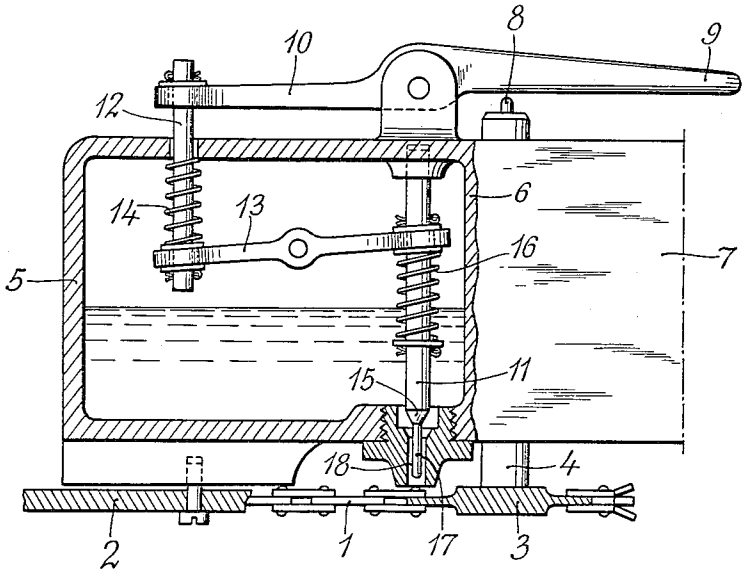
April 10, 1956 T. JOHNSEN ET AL 2,741,275

DEVICE FOR LUBRICATING SAW-CHAINS

Filed Jan. 30, 1952



Inventors:
Gunnar Haldor Karsten Busk
and Trygve Johnsen
By: Edward J. Jurow
Atty.

United States Patent Office 2,741,275 Patented Apr. 10, 1956

2,741,275

DEVICE FOR LUBRICATING SAW-CHAINS

Trygve Johnsen and Gunnar Haldor Karsten Busk, Fagerstrand, near Oslo, Norway

Application January 30, 1952, Serial No. 269,036

Claims priority, application Norway February 9, 1951

2 Claims. (Cl. 143—32)

The present invention relates to an automatic lubricating device for the saw-chain of a motor driven chain-saw, in which the lubricating oil issuing from a container provided upon the saw flows through an opening in the bottom of said container and is thrown downwards on to the chain or to the driving wheel of the chain, when the motor is engaged to the driving wheel of the chain, the outlet of the lubricating oil being automatically obturated when the driving wheel is disconnected from the motor.

According to the invention the oil container has mounted thereon a lever of the second order, which lever is maintained in raised position by means of a spring and which lever, when being depressed, acts upon a release stud of the coupling between the driving wheels of the saw chain, in such manner that the saw chain is stopped and simultaneously acts upon a valve spindle with valve body which closes the oil outlet from the container.

Said lever may also be of the first order, one arm serving as handle and acting upon the releasing stud, the other acting upon the valve spindle through a two-armed lever system. The valve body is pressed against the valve seat by spring action. The valve spindle with valve body may be extended by a cleaning needle entering the outlet opening of the oil container with some clearance.

The drawing illustrates the lubricating device of this invention partly in cross-section, attached to the chain guide of a chain saw.

Numeral 1 designates the saw chain, 2 the guide therefor, 3 the chain driving sprocket and 4 the shaft of the latter. On the chain guide 2 an oil container 5 is provided, which container is integral with but separated by a wall 6 from a housing 7 enclosing a driving motor (not shown). The shaft 4 of the sprocket 3 is journaled in the motor housing 7 and is engaged to or disengaged from the motor by means of a clutch controlling stud 8 which, by means of a coupling spring (not shown), is maintained in the raised position shown, in which the sprocket 3 is engaged, in driven relation with the motor. Above the motor housing 7 is mounted a two-armed lever of the first order, one arm 9 of which serves as a handle and by being pressed downwards from the raised position shown acts upon the stud 8 to disengage the shaft 4 from driven relation with the motor, the other arm 10 being in operative connection with a valve stem 11 by means of the rod 12 and another two-armed lever 13 also of the first order, within the container, as shown. As will be seen, the spring 14 surrounding the rod 12 tends to urge the latter downwards, whereby the lever 9 and the valve stem 11 are maintained in their raised positions, with the sprocket 3 coupled to the motor and the oil outlet 18 in open condition. When the handle 9 is depressed, the stud 8 is moved to disengage the motor from shaft 4 so that driving of sprocket 3 is terminated and at the same time the valve stem seat 15 closes the outlet 18 in opposition to the resilient action of the spring 16.

When the handle 9 is released the stud returns to the

position shown, so that the driving of sprocket 3 will be resumed and the outlet 18 will be opened so that oil drips upon the sprocket 3 and is flung or sprayed onto the chain 1 adjacent to the driving wheel and the guide 2 of the chain. Of course, not all the oil will be centrifugally cast off of the sprocket upon the chain portion exposed between the guide 2 and the sprocket 3, but some of the oil will be directly transferred to the chain when the individual links of the latter come in contact with the sprocket.

The valve stem 11 is extended by a cleaning needle 17, which during clearing extends into the outlet 18. The length of opening or orifice 18 is greater than its diameter and the needle or extension 17 of the valve stem is of a length equal to or greater than said orifice length. The outlet end of orifice 18 is in close proximity to either the sprocket 3 or to the saw chain 1. Such close proximity permits sawdust particles to lodge on, in or about the orifice, such deposit being enhanced by the viscousness of the oil which tends to attract and hold the sawdust particles. Provision of the described clearing needle 17 ensures proper lubrication at all times since such needle 17 performs its clearing function every time the sprocket drive is disengaged.

We claim:

1. In a motor driven chain saw having a chain guide and a saw chain entrained about the sprocket which is in disengageable driving connection with a motor, the combination of an oil container secured to the chain guide, an orifice at the bottom of the container and in close proximity to the saw chain, a valve stem within the container, a valve seat on such valve stem, and an annular seat about such orifice, a pivoted lever interconnected with the valve stem and adapted to move the valve seat toward and away from the orifice seat, an extension on such valve stem disposed at all times within the orifice which is of a diameter greater than the valve stem extension but smaller than the largest diameter of the valve stem seat, said orifice being of a length greater than its diameter, and said extension being of a length at least equal to said length of the orifice.

2. In a motor driven chain saw having a chain guide and a saw chain entrained about the sprocket which is in disengageable driving connection with a motor, the combination of an oil container secured to the chain guide, an orifice at the bottom of the container and in close proximity to the sprocket, a valve stem within the container, a valve seat on such valve stem, and an annular seat about such orifice, a pivoted lever interconnected with the valve stem and adapted to move the valve seat toward and away from the orifice seat, an extension on such valve stem disposed at all times within the orifice which is of a diameter greater than the valve stem extension but smaller than the largest diameter of the valve stem seat, said orifice being of a length greater than its diameter, and said extension being of a length at least equal to said length of the orifice.

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