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F. THILL

SPRING OILER

Filed Feb. 9, 1925

Fig. 1.

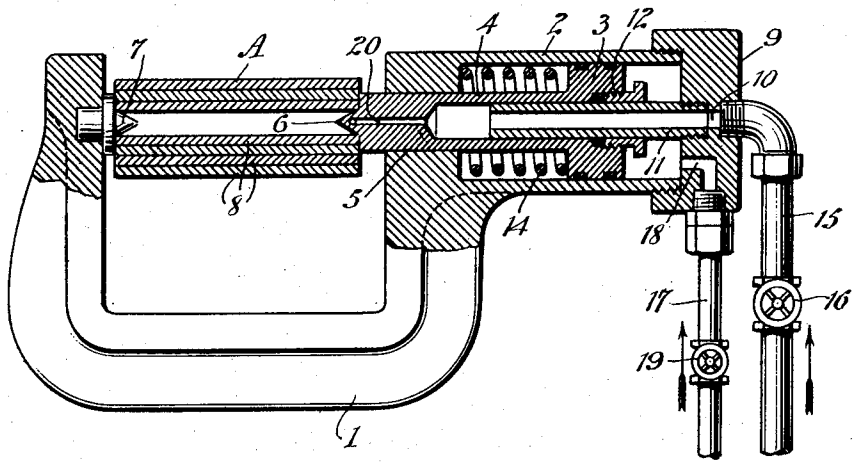
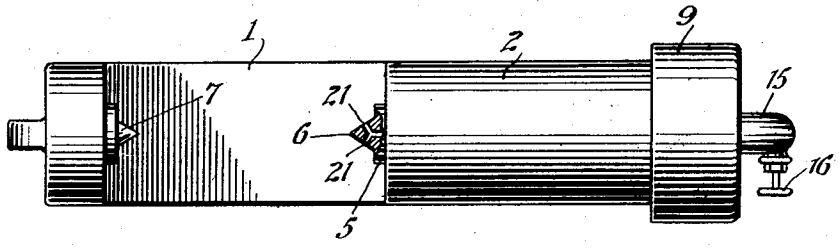


Fig. 2.



WITNESSES

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UNITED STATES PATENT OFFICE.

FRANK THILL, OF LONG ISLAND CITY, NEW YORK.

SPRING OILER.

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To all whom it may concern:

Be it known that I, FRANK THILL, a citizen of Luxemburg, and a resident of the city of New York, Long Island City, borough of Queens, in the county of Queens and State of New York, have invented a new and Improved Spring Oiler, of which the following is a full, clear, and exact description.

This invention relates to spring oilers, an object of the invention being to provide an apparatus which operates by air or other analogous fluid pressure to force the leaves of the spring apart and hold the leaves spaced while oil, graphite, and the like is injected between the leaves.

A further object is to provide a device of this character which utilizes a pressure of air and the like to properly position the device to separate the leaves of the spring and to maintain the leaves separated while lubricant, graphite and the like is forced between the leaves.

With these and other objects in view, the invention consists in certain novel features of construction and combinations and arrangements of parts, which will be more fully hereinafter described and pointed out in the claims.

In the accompanying drawings—

Figure 1 is a view, partly in elevation and mainly in longitudinal section, illustrating my improved device in operative position with relation to a leaf spring;

Figure 2 is a plan view of my improved device detached from the spring.

1 represents a yoke, having at one end a cylinder 2 which is preferably integral with the yoke. In this cylinder 2 a piston 3 is mounted and has a tubular piston rod 4 fixed thereto. This tubular rod 4 is movable through an opening 5 in the yoke 1 and at its free end is shaped to form a tapering wedge-like spring leaf spacer 6. This spacer 6 is in alinement with a fixed spacer 7 carried by the free end of the yoke 1 so that when the spacer 6 is moved toward the spacer 7 they will force the leaves 8 of a leaf spring A apart, as clearly shown in Figure 1.

A head 9 is screwed onto the outer end of cylinder 2 and provided with a central opening 10 to which the threaded end of an oil tube 11 inside of casing 2 is secured and registers with said opening 10.

This tube 11 projects through the piston 3 and telescopes in the tubular rod 4, and a packing gland or stuffing box 12 is provided in the piston 3 to make the juncture between the tube 11 and the piston perfectly tight.

A coil spring 14 is located in the casing 2 and interposed between the piston 3 and the end of the casing 2 so as to exert a rearward pressure on the piston.

A liquid supply pipe 15 communicates with the opening 10 in head 9 so as to discharge oil, graphite and the like through the tube, and a suitable valve 16 controls the flow through this pipe 15.

An air supply pipe 17 communicates with a passage 18 in the head 9, and this passage 18 discharges into the cylinder 2 back of piston 3. A three-way valve 19 is provided in the pipe 17 which controls the flow of air into the casing, permits the exhaust of air from the casing and entirely shuts off the supply of air at the will of the operator. This valve 19 may be made of standard type and hence it is not necessary to describe the same in detail.

The piston rod 4 as above stated is of tubular form, the interior bore of which is appreciably reduced at its forward end, forming a relatively small outlet passage 20 which discharges laterally through orifices 21 in the sides of the spacer 6.

The operation is as follows:

My improved device is so located with relation to the spring A that the spacers 6 and 7 are aligned between the leaves of the spring. Air is then admitted through pipe 17 into the casing 2 to force the piston 3 and the spacer 7 to the left in Figure 1, thus forcing the spacers toward each other to project them between the leaves of the spring and space the leaves apart, as shown in Figure 1. The valve 16 is then opened to admit oil, graphite and the like, which flows through the opening 10, tube 11, tubular piston rod 4 and passage 20 and is discharged through the outlet orifices 21 into the space between the leaves of the spring. To release the device, the valve 19 is turned so as to permit an exhaust of air from cylinder 2 when the coil spring 14 will move the piston and its rod 4 rearwardly, thus withdrawing the spacers from their position between the leaves of the spring.

Various slight changes and alterations might be made in the general form of the parts described without departing from my invention, and hence I do not limit myself to the precise details set forth, but consider

myself at liberty to make such slight changes and alterations as fairly fall within the spirit and scope of the appended claims.

I claim:

1. A spring oiler, comprising a yoke, a casing fixed to one end of the yoke, a piston movable in the casing, a hollow rod fixed to the piston and projecting beyond the end of the casing, a spacer fixed to the yoke and in line with a spacer on the end of the rod, a lubricant supply tube projecting through the piston and into the tubular rod, a spring exerting pressure on the piston to move it rearwardly, and an air supply pipe communicating with the end of the casing whereby air when admitted will move the piston forwardly.

2. A device of the character described, comprising a yoke, a casing fixed to one end of the yoke, a head on the outer end of the casing, a piston in the casing, a tubular rod fixed to the piston and projecting beyond the wall of the yoke, spring leaf spacers carried by the rod and by the yoke and in alignment, the spacer carried by the rod having discharge orifices therein, an oil tube fixed to the head projecting through the piston and telescoping in the rod, a spring in the casing exerting rearward pressure on the piston, an oil supply pipe connected to the head and communicating with said tube, a valve in said pipe, an air supply pipe communicating with a passage in the head and adapted to discharge into the casing back of the piston, and a three-way valve in said last-mentioned pipe.

FRANK THILL.