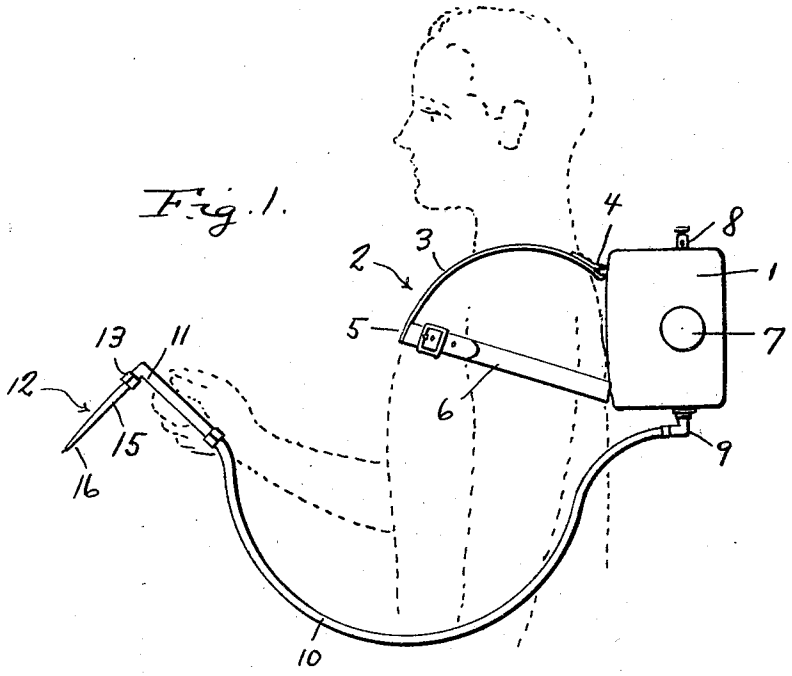
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LUBRICATING DEVICE

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Fig. 1.



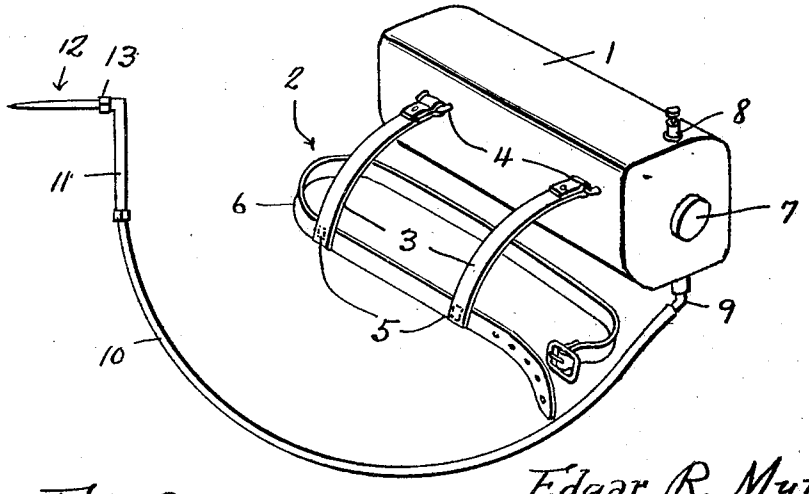


Fig. 2.

Inventor

Edgar R. Mundis

By Clarence A. O'Brien

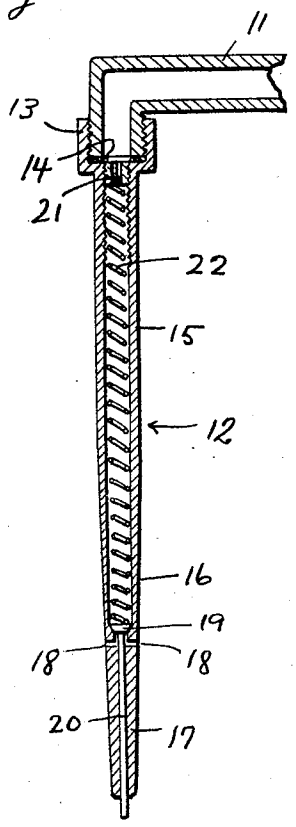
Attorney

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LUBRICATING DEVICE

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Fig. 3.



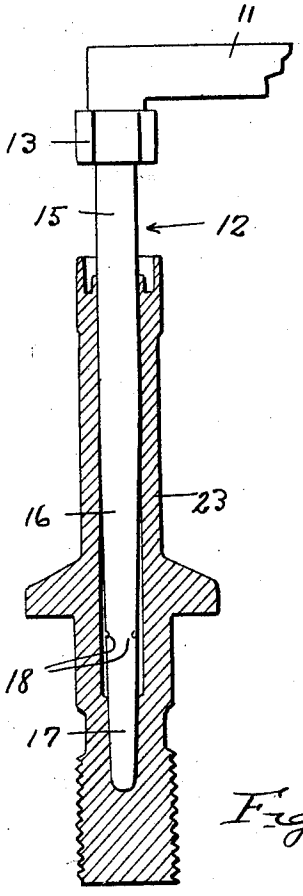


Fig. 4.

Inventor

Edgar R. Mundis

By Clarence O'Brien

Attorney

Patented Nov. 24, 1931 1,833,402

UNITED STATES PATENT OFFICE

EDGAR R. MUNDIS, OF BLAIRSVILLE, INDIANA

LUBRICATING DEVICE

Application filed March 27, 1931. Serial No. 525,795.

This invention relates to a lubricating device, and has for its primary object to provide in a manner, as hereinafter set forth, an apparatus embodying a novel construction and arrangement of parts whereby same is particularly adapted for use in depositing the correct quantity of lubricating oil in the vertically disposed bearings or sockets of a twisting machine which receives the spindles.

Other objects of the invention, are to provide a lubricating device of the character described which will be simple in construction, strong, durable, efficient and reliable in use, compact, light in weight, and which may be manufactured at low cost.

All of the foregoing and still further objects and advantages of the invention will become apparent from a study of the following specification, taken in connection with the accompanying drawings wherein like characters of reference designate corresponding parts throughout the several views, and wherein:—

Figure 1 is a view in side elevation of a lubricating device in accordance with this invention showing same in position on an operator.

Fig. 2 is a view in perspective of the device.

Fig. 3 is a detail view in section through the valve controlled nozzle.

Fig. 4 is a view in side elevation of the nozzle showing same inserted in the spindle bearing, said bearing being shown in vertical section.

Referring to the drawings in detail, it will be seen that the reference numeral 1 designates an elongated tank for the reception of the lubricating oils, said tank being supported on the upper portion of the back of an operator by a harness which is designated generally by the reference numeral 2 and which comprises shoulder straps 3 each having one end connected, as at 4, to the forward vertical wall of the container 1, and its other end, connected as at 5, to the forward portion of the body encircling strap 6. One end of the tank or container 1 is provided with a filling opening which is closed by a removable cap 7.

A suitable vent 8 is mounted in the upper or top wall of the tank or container 1. Secured to the lower wall of the tank or container 1 is an elbow 9 to which a flexible hose 10 is connected at one end. The other end of the hose 10 is connected with one end of a tubular handle 11 having a right angularly disposed free end portion upon which an elongated nozzle 12 is removably threaded.

The nozzle 12 is provided with an enlargement 13 on its inner end which is internally threaded to receive the angularly disposed end portion of the handle 11, as illustrated to advantage in Fig. 3 of the drawings. A suitable gasket 14 may be provided in the enlargement 13 to prevent leakage at this point.

Nozzle 12 is provided with a section 15 which is of uniform diameter and which merges with a tapered section 16 having a comparatively thick free end portion 17. Oppositely extending ports 18 are provided in the inner end of the faucet 17 of the nozzle and communicates with the bore of said nozzle to receive oil therefrom, the outer end of the bore of the nozzle being formed to provide a valve seat upon which is engageable a valve 19 having a stem 20 extending forwardly or outwardly therefrom, said stem 20 being slidable in a passage provided therefor in the portion 17 of the nozzle, and projecting beyond the free end or tip of the nozzle.

A sleeve 21 is threaded in the inner end portion of the nozzle and provides a shoulder with which one end of a coiled spring 22 is engaged. The coiled spring 22 is disposed in the bore of the nozzle 12 and has its other end engaged with the valve 19 in a manner to yieldingly urge said valve toward its seat. In Fig. 4, of the drawings, the reference numeral 23 designates a vertical bearing of conventional construction which rotatably supports the spindles of a twisting machine.

In use, the nozzle 12 is inserted in the vertical bearing 23 of the twisting machine and the projecting end of the stem 20 is engaged with the bottom of the bearing. Obviously, slight downward pressure on the

nozzle will, through the medium of the stem 20, unseat the valve 19 against the tension of the coiled spring 22, thus permitting oil to flow through the nozzle 12 and be discharged into the bearing through the ports 18. It will be noted that the upper portion 15 of the nozzle 12 is of a diameter to fit snugly in the upper portion of the bearing 23 and the free end portion of the nozzle 12 is of a size and shape to fit in the reduced lower portion of the bearing 23. Thus, the stem 20 may be engaged with the lower end of the bearing.

It will be further noted from a consideration of Fig. 4 of the drawings, that the ports 18 are disposed in an intermediate portion of the nozzle 12 which is spaced from the walls of the bearing, thus assuring the free flowing of the lubricant through the ports. When the space in the bearings 23 which is unoccupied by the nozzle 12 has been substantially filled with the lubricant, the correct quantity of the lubricant will have been deposited therein. The upper portion 15 of the nozzle fits the bearing 23 sufficiently close to prevent the rapid overflowing of the bearing due to the depositing therein of an excess quantity of the lubricant, but said portion 15 of the nozzle does not fit so close in the bearing as to prevent the escape of air therefrom to permit the entrance of the oil thereinto from the nozzle. In other words, when the lubricant enters the space which is unoccupied by the nozzle 12 in the bearing 23, the air therein escapes upwardly between the nozzles and the bearings, but the flow of the lubricant into the bearing from the nozzle will be materially retarded when the level of said lubricant in the bearing substantially reaches the portion 15 of the nozzle which is of substantially uniform diameter and of a size conforming substantially to the inner diameter of the bearing 23.

It will be noted that the tank or container 1 is supported by the harness 2 on the shoulder blades of the operator and is thus disposed above the horizontal plane of the bearings 23 when said bearings are mounted on the twister.

For this reason, the lubricant will always flow by gravity from the tank or container 1 to the nozzle 12, when said nozzle 12 is in a bearing 23.

It is believed that the many advantages of a lubricating device constructed in accordance with this invention will be readily understood, and although the preferred embodiment of the invention is as illustrated and described, it is to be understood that changes in the details of construction, may be had which will fall within the scope of the invention as claimed.

Having thus described my invention, what I claim as new is:—

1. A lubricating device comprising a nozzle for insertion in a bearing, said nozzle including a portion of substantially uniform diameter slidably engageable with the outer portion of the bearing, said nozzle further including a reduced portion spaced from an inner portion of the bearing, said reduced portion having discharge ports in an intermediate portion thereof, and means for supplying a lubricant to the nozzle.

2. A lubricating device comprising a nozzle for insertion in a bearing, said nozzle including a portion of substantially uniform diameter slidably engageable with the outer portion of the bearing, said nozzle further including a reduced portion spaced from an inner portion of the bearing, said reduced portion having discharge ports in an intermediate portion thereof, means for supplying a lubricant to the nozzle, a valve seat in the nozzle, a reciprocating valve operable in the nozzle and engageable on the seat for controlling the passage of the lubricant to the ports, a coiled spring mounted in the nozzle and engaged with the valve in a manner to yieldingly urge said valve toward the seat, and a stem connected to the valve and projecting from the nozzle for engagement with the bearings in a manner to move the valve away from the seat against the tension of the coil spring.

3. A lubricating device comprising a nozzle for insertion in a bearing, said nozzle including a portion of substantially uniform diameter slidably engageable with an outer portion of the bearing, the nozzle further including a tapered portion merging with the first-mentioned portion, said tapered portion having discharge ports in an intermediate portion thereof, and means for supplying a lubricant to the nozzle.

4. A lubricating device comprising an elongated nozzle for insertion in a bearing, a tubular handle connected with one end of the nozzle, a flexible conduit connecting the tubular handle with a source of lubricant supply, said nozzle including an inner portion of substantially uniform diameter slidably engageable with an outer portion of the bearing, the nozzle further including a tapered free end portion having discharge ports in an intermediate portion thereof, and a spring seated valve operatively mounted in the nozzle for controlling the flow of the lubricant to the discharge ports.

5. A lubricating device comprising a tubular handle, a flexible conduit connected to one end of the handle and extending therefrom to a source of lubricant supply, the other end portion of the handle being angularly disposed and externally threaded, an elongated nozzle threadedly connected, at one end, to the angularly disposed end portion of the handle, said nozzle being for insertion in a bearing and including an inner portion of substantially uniform diameter, slidably engageable

with the bearing and a tapered outer portion, said tapered outer portion having discharge ports in an intermediate portion thereof, a valve seat in the nozzle adjacent the discharge ports, a valve mounted for reciprocation in the nozzle and engageable with the seat for controlling the flow of the lubricant to the discharge ports, a coiled spring mounted in the nozzle and operatively engaged with the valve for yieldingly urging said valve toward the seat, and a stem connected to the valve and projecting longitudinally from the free end of the nozzle for engagement with the bearing in a manner to move the valve away from the seat against the tension of the coiled spring.

In testimony whereof I affix my signature.

EDGAR R. MUNDIS.