(No Model.)

A. CRUZ.

LUBRICATING APPARATUS.

No. 602,155. Patented Apr. 12, 1898.

FIG. 1.

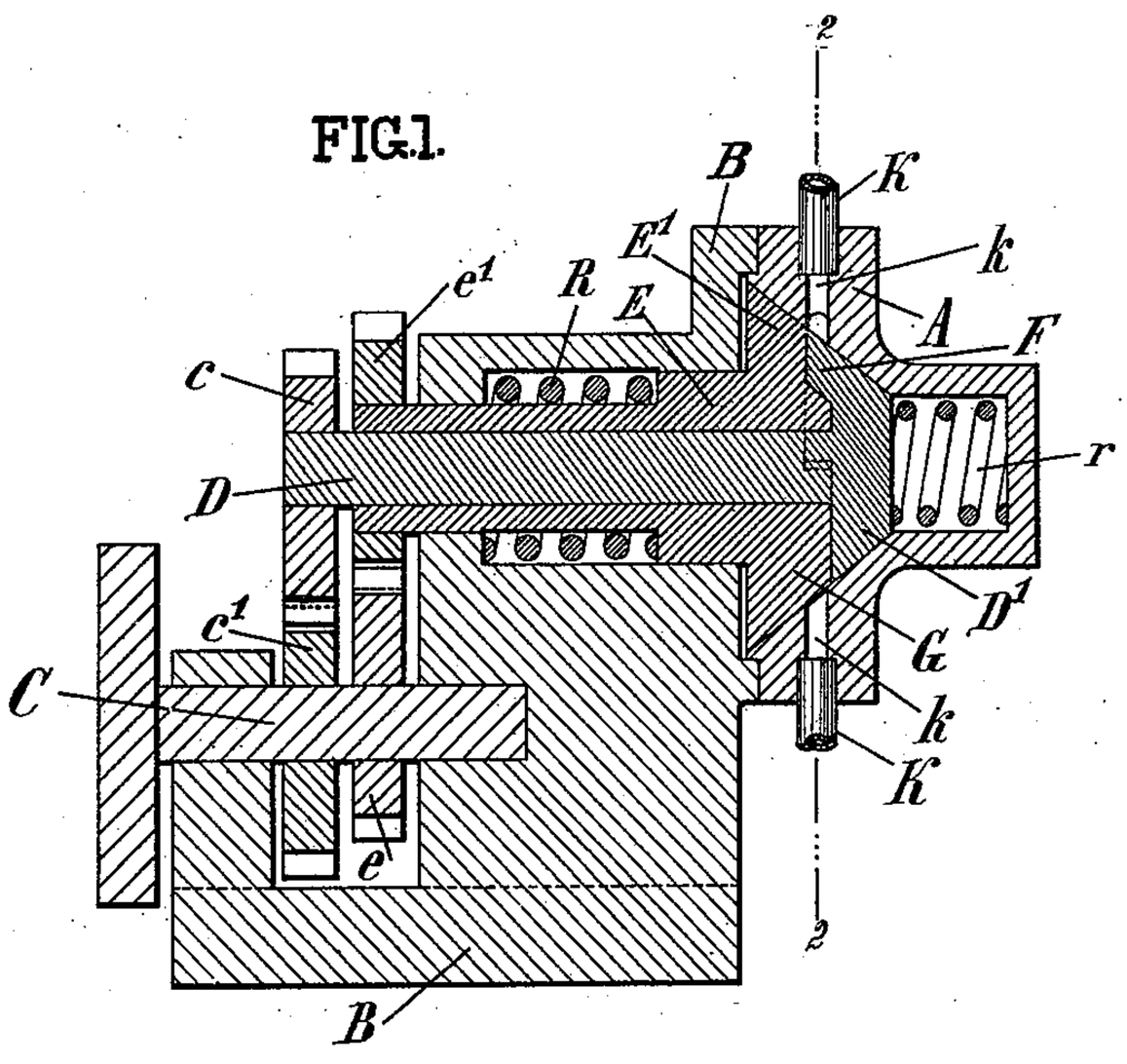
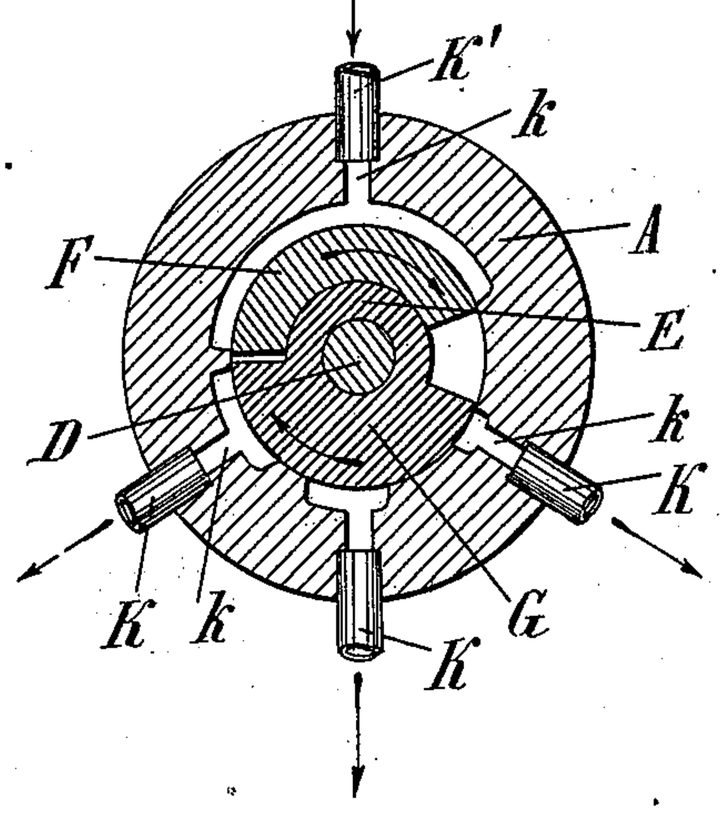


FIG. 2.



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UNITED STATES PATENT OFFICE.

ALPHONSE CRUZ, OF PARIS, FRANCE.

LUBRICATING APPARATUS.

SPECIFICATION forming part of Letters Patent No. 602,155, dated April 12, 1898.

Application filed December 30, 1896. Serial No. 617,471. (No model.)

To all whom it may concern:

Be it known that I, ALPHONSE CRUZ, engineer, of Rue du Temple, No. 54, Paris, Department of Seine, Republic of France, have invented new and useful Improvements in Apparatus for Lubricating, Distributing, and Mixing, of which the following is a specification.

This invention relates to means for oiling machinery; and the object thereof is to provide an improved apparatus for this purpose by means of which the oil or lubricant may be conveyed to as many different points as desired and in any required quantity, a further object being to provide means whereby the oil or lubricant may be properly distributed to the various parts of the machinery and by means of which the various lubricants may be mixed and distributed.

The invention is fully disclosed in the following specification, of which the accompanying drawings form a part, in which—

Figure 1 is a sectional side view of the apparatus which I employ, and Fig. 2 a cross-section on the line 2 2 thereof.

In the drawings forming part of this specification the separate parts of my improvement are designated by the same letters of reference throughout both views, and in said drawings I have shown at A a circular box which is closed by a base B, by which it is supported.

I have also shown at C a driving-shaft, on which are oppositely mounted two eccentric gears *e* and *c'*. Above the shaft C are two shafts D and E, each of which has the same imaginary axis, and the shaft D revolves inside of the shaft E. Mounted upon the outer end of the shaft D is an eccentric gear *c*, which operates in conjunction with the eccentric gear *c'* on the shaft C, and an eccentric gear *e'*, mounted upon the outer end of the shaft E, operates with the eccentric gear *e* on the shaft C, whereby the shafts D and E are alternately accelerated and slackened in their speed.

The shaft D passes through the shaft E, and said shafts have the same imaginary axis, and each is provided at its extremity with a conical head or seat, the conical head or seat on the shaft D being designated by the reference-letter D' and that on the shaft E by the reference-letter E', and these heads or seats are inclosed in the box A.

The shafts D and E are each provided between the head or seat D' and the seat E' with a sector, the sectors of the respective shafts D and E being designated by the reference-letters F and G, respectively, and the shafts D and E and their respective sectors F and G revolve in the box A, while the heads or seats E' and D' of the shafts E and D are pressed against each other by the springs R and *r*, the spring R being mounted on the shaft E and the spring *r* in an extension of the box A. The spring R is stronger than the spring *r* and the two heads or seats E' and D' are at the same time adjusted against the box A in such manner that the tightness thereof in the box A is perfect without the help of other fittings.

I also provide a number of tubes or pipes K, which are mounted in radial bores or passages *k*, which are formed in the box A and which communicate with the interior of said box, and the shafts D and E, with their sectors F and G, in consequence of the eccentricity of the driving-gearing and the manner or position in which the same is arranged, take a rotary movement, which is gradually accelerated or slackened in such manner that the two sectors alternately approach and separate. It will therefore be readily understood that while the sectors are separating they will operate to draw oil or other lubricants through the tube or pipe K' into the space between the sectors, said tube or pipe being so placed that its outer end will be in the oil or lubricant, or said tube or pipe may be filled with the oil or lubricant, as will be readily understood, and the outer end thereof closed, and as the space between the sectors is continually increasing or decreasing the result is that while the separation takes place the oil will be drawn between the sectors by suction, and when the sectors are approaching each other the oil will be forced outwardly through the tubes or pipes K, which will convey the lubricant to the point where these pipes end.

The apparatus shown in the drawings and described in this specification is presented as

an example of the practical application of the invention; but the same may be varied in its details in many ways.

The essential features of the invention consist of the two sectors adjusted in a circular box and fixed separately upon two shafts, said shafts being provided with the same imaginary axis, and these two shafts being provided with a rotary movement alternately accelerated and slackened in such a manner that the sectors fixed upon them approach and separate alternately and draw in or repel a liquid or lubricant through a number of pipes placed around the box in which they are mounted.

The mechanical devices or constructions which may be employed to obtain this result are very numerous, and my invention is therefore not limited to the exact form, construction, and arrangement of the various parts thereof herein described.

I am aware that two segmental piston-rings having between their ends a contractible oil-pocket have been described in the lubricator specified in the patent granted to I. V. Renchard on February 27, 1883, No. 273,158; but this lubricator is quite different from mine. It employs hydrostatic or steam pressure, while mine is moved mechanically and remains entirely independent of any steam-pipes. The sectors in my apparatus have a continuous rotary movement alternately accelerated and slackened, while those in Renchard's lubricator receive an oscillating motion and (when moving) have both the same speed. My apparatus being a mechanical one may be employed to oil any kind of machinery and is able to convey the lubricant to as many different points as desired, while Renchard's lubricator is designed only to lubricate steam in motors.

Having fully described my invention, I claim as new and desire to secure by Letters Patent—

In a mechanical oiling or lubricating apparatus the combination with a circular box having radial bores therein, and tubes or pipes seated in said bores, of two shafts one surrounding the other and concentric therewith penetrating into said box, a sector mounted on each of said shafts, within said box, two eccentric gears mounted oppositely, one on each of said shafts, a driving-shaft, eccentric gears thereon meshing with said first-mentioned gears whereby said first-mentioned shafts will be alternately accelerated and slackened, and the sectors made to alternately approach and separate, and means whereby said driving-shaft will be revolved, substantially as described.

In testimony that I claim the foregoing as my invention I have signed my name, in presence of two witnesses, this 3d day of December, 1896.

ALPHONSE CRUZ.

Witnesses:
EUGÉNE JEAN COFFINEAU,
EDWARD P. MACLEAN.