

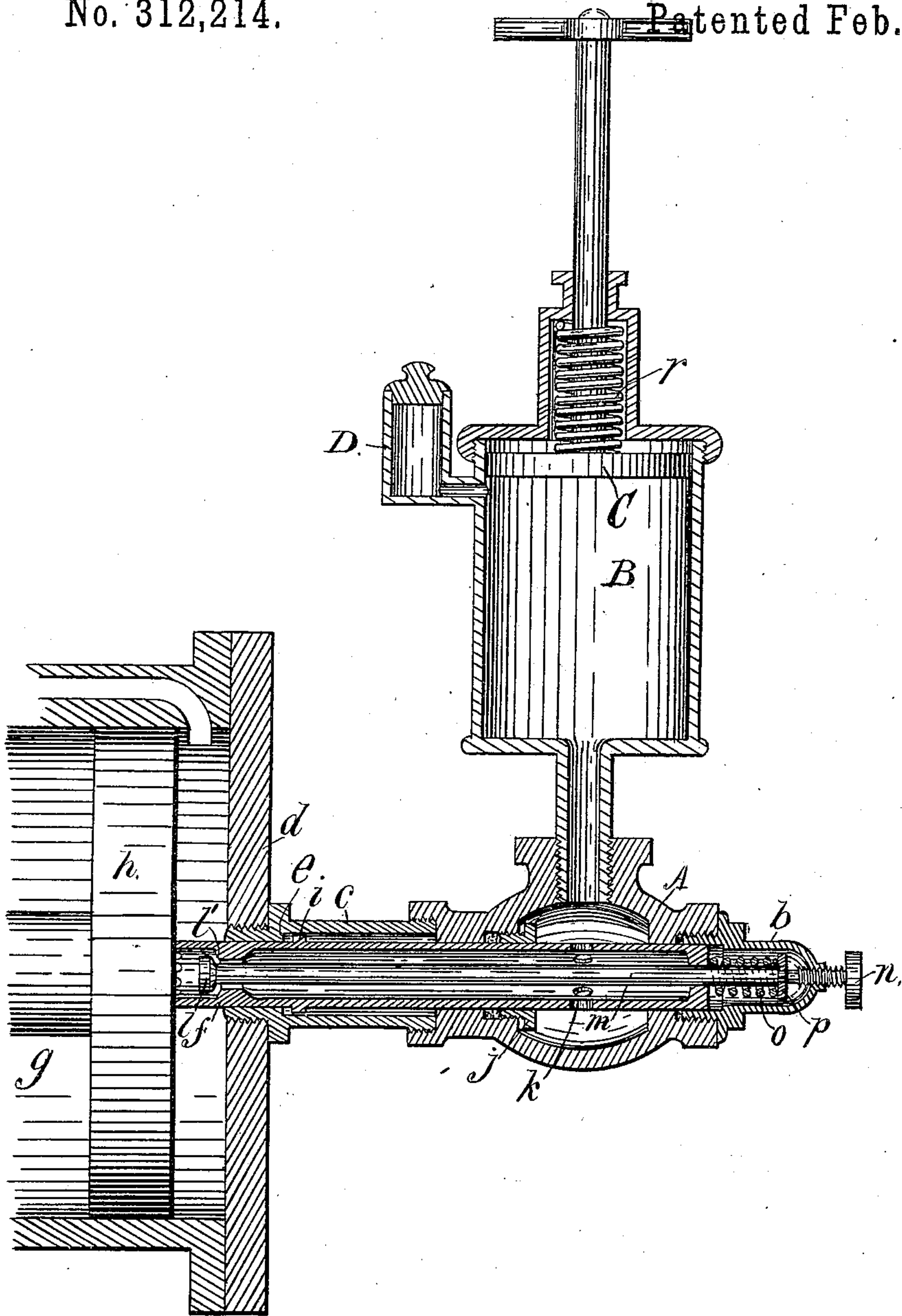
(No Model.)

F. L. MCGAHAN.

LUBRICATOR.

No. 312,214.

Patented Feb. 10, 1885.



WITNESSES:

H. P. Hood.  
A. M. Hood.

INVENTOR:

Fred L. McGahan

# UNITED STATES PATENT OFFICE.

FRED L. MCGAHAN, OF INDIANAPOLIS, INDIANA, ASSIGNOR OF ONE-HALF  
TO GILBERT W. WARREN, OF SAME PLACE.

## LUBRICATOR.

SPECIFICATION forming part of Letters Patent No. 312,214, dated February 10, 1885.

Application filed June 23, 1884. (No model.)

*To all whom it may concern:*

Be it known that I, FRED L. MCGAHAN, a citizen of the United States, residing at Indianapolis, in the county of Marion and State of Indiana, have invented a new and useful Improvement in Lubricators, of which the following is a specification.

My invention relates to that class of lubricators in which the lubricant is automatically delivered to a machine from a reservoir at intervals dependent on the movements of said machine.

The object of my improvement is to provide a lubricator which may be connected directly to mechanisms having interior moving parts—as the cylinder or steam-chest of a steam-engine—so that the oil or other fluid lubricant contained in the reservoir will be discharged at intervals directly upon said moving part, the discharge being effected by contact of the said moving part with the valve mechanism of the lubricator, as hereinafter fully explained.

The accompanying drawing illustrates my invention as applied to the cylinder of a steam-engine.

The figure represents a central longitudinal section of the entire device.

A is a chambered casting having at one end a closed extension, *b*, and at the other end a tubular extension, *c*, which is adapted to be screwed into the cylinder-head *d*. The interior of *c* is provided with an annular shoulder, *e*.

*f* is a tube extending through chamber A and its extension *c* into the interior of the steam-cylinder *g* a sufficient distance to come in contact with the piston *h* a little before the piston has completed its movement toward head *d*. The end of tube *f* is notched, or of irregular form, so as to allow the oil to escape when the end of the tube is in contact with the piston. Tube *f* is adapted to slide longitudinally in chamber A and extension *c*, its outward movement being limited by a collar, *i*, which comes in contact with shoulder *e*. A stuffing-box at *j* cuts off communication between the interior of chamber A and the interior of the steam-cylinder, except through tube *f*, which is perforated at *k*. Near the outer end of tube *f* is a valve-seat, *l*, and a valve, *l*, closing the tube.

A rod, *m*, smaller in diameter than the interior

of tube *f*, extends from valve *l* through tube *f* into the closed extension *b*, in the end of which is a set-screw, *n*, for regulating the opening of the valve.

For the purpose of holding valve *f* to its seat a strong spiral spring, *o*, is placed on rod *m* between the end of tube *f* and a washer, *p*, secured to the end of the rod.

B is an oil-reservoir mounted on and communicating with chamber A. A piston, C, closely fits the interior of reservoir B. Said piston is for the purpose of forcing the oil from the reservoir into chamber A by means of a spiral spring, *r*, or other suitable force applied above said piston.

D is a spout through which the reservoir is filled.

The operation of my device is as follows: Piston C is drawn upward to the top of the reservoir by means of the rod and handle E, and the reservoir filled through spout D. The oil fills chamber A and tube *f*, being prevented from passing into the cylinder by valve *l*, piston *h* being at the farther end of the cylinder, and the valve held tightly closed by spring *o*. As the piston *h* moves toward head *d* it comes in contact with the end of tube *f* and carries the tube forward with it. The valve-rod *m* being held stationary by screw *n*, valve *l* is thus opened and the oil, being under pressure from spring *r* and piston C, is forcibly expelled between the end of tube *f* and the piston *h*, spreading radially over the piston to the cylinder. At the same time spring *o* is compressed, and by its recoil, as piston *h* leaves tube *f*, serves to restore the tube and valve to their normal positions. By turning screw *n* tube *f* will be more or less projected into the cylinder, and valve *l* consequently more or less opened at each stroke of the piston, thereby regulating the flow of oil. When the piston is at rest and not in contact with tube *f*, valve *l* may be opened by turning screw *n* inward. Tube *f* will then move forward till stopped by shoulder *e*, and the valve will then open by the further movement of the screw.

I claim as my invention—

1. The combination of the following elements, namely: a machine consisting of two parts, one of which parts is stationary, and the



other part has a reciprocating movement within or upon said stationary part, an oil-chamber secured to said stationary part by a tubular connection, a tube having an interior valve-seat, and adapted to slide within said tubular connection and to come in contact with said reciprocating part, a valve fitted to said valve-seat, a valve-rod, a spring on said rod, and means for supplying oil under pressure to said oil-chamber, all combined and arranged to cooperate substantially as and for the purpose specified.

2. In a lubricator, the combination of oil-chamber A, extensions *b* and *c*, tube *f*, valve

*l*, rod *m*, washer *p*, and spring *o*, all substantially as and for the purpose specified. 15

3. In a lubricator, the combination, with oil-chamber A, extensions *b* and *c*, tube *f*, valve *l*, rod *m*, washer *p*, and spring *o*, of regulating-screw *n*, for the purpose specified. 20

4. The combination, with oil-chamber A, extensions *b* and *c*, tube *f*, valve *l*, rod *m*, washer *p*, and spring *o*, of oil-reservoir B, piston C, and spring *r*, for the purpose specified.

FRED L. MCGAHAN.

Witnesses:

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A. M. HOOD.