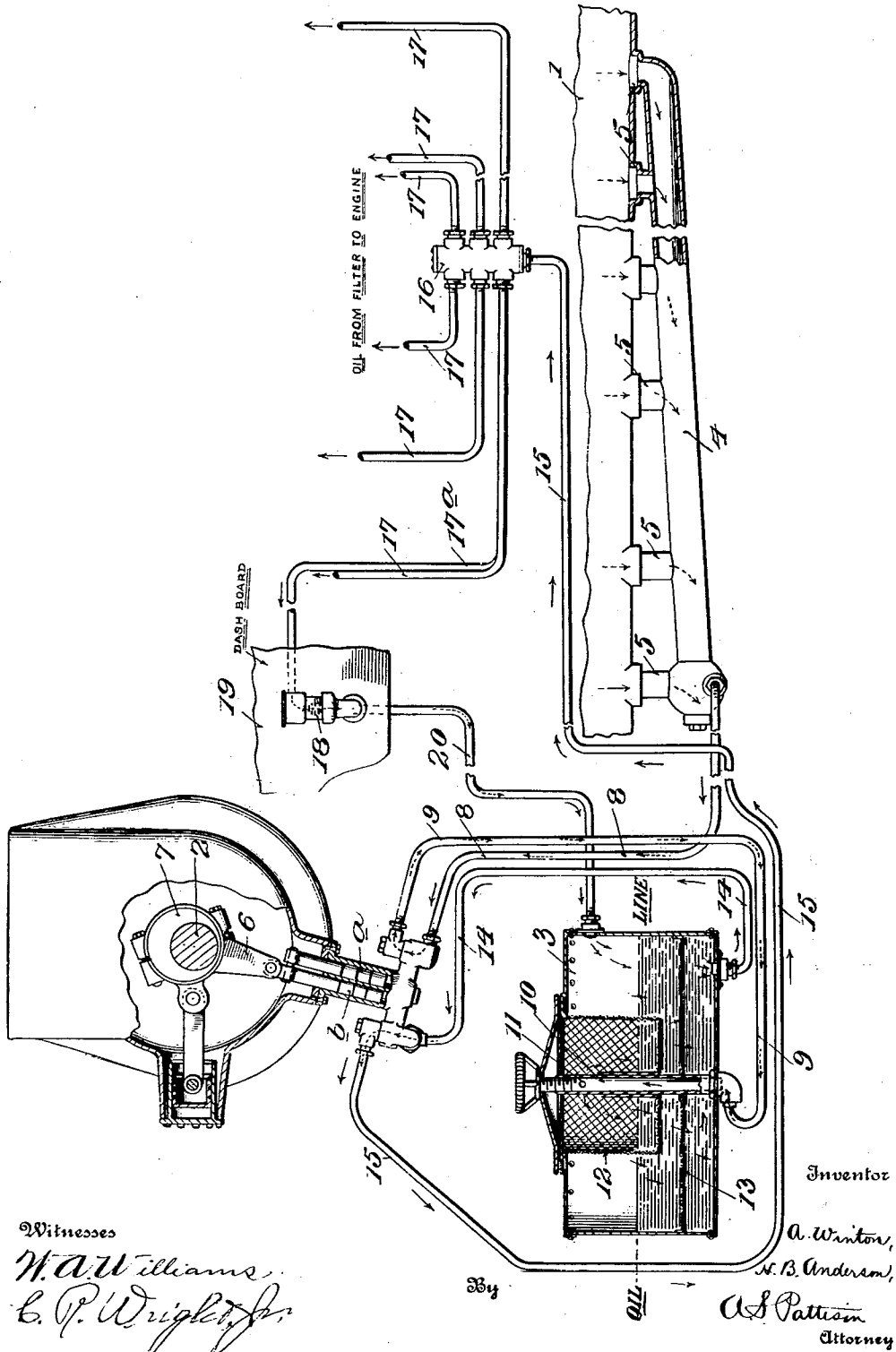


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LUBRICATING SYSTEM FOR AUTOMOBILES.
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Witnesses

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LUBRICATING SYSTEM FOR AUTOMOBILES.

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Specification of Letters Patent.

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To all whom it may concern:

Be it known that we, ALEXANDER WINTON and HAROLD B. ANDERSON, citizens of the United States, residing at Cleveland, in the county of Cuyahoga and State of Ohio, have invented certain new and useful Improvements in Lubricating Systems for Automobiles, of which the following is a specification, reference being had therein to the accompanying drawing.

This invention relates to improvements in lubricating systems for automobiles, and pertains to some improvements in that type of lubricating system in which the lubricating oil is used over and over again by a continuous circulation thereof.

The object of the present improvement is to simplify the construction of the above mentioned type of lubricating systems for automobiles, and to at the same time prevent any accumulation of the lubricating oil in the crank-case, which prevents over-lubrication of the cylinders by the splashing of an accumulation of oil in the crank case, and thereby working through the cylinders to the spark-plug, and also preventing the issuing of disagreeable smoky products of combustion through the exhaust, and as a consequence, also effecting a saving in the quantity of lubricating oil used by preventing its being wasted by burning up in the engine cylinder.

The accompanying drawing is a view of the present improvement, the positions of the parts being diagrammatically shown.

Referring now to the drawings, 1 is the bottom of the crank-case of a multiple cylinder explosion engine, 2 the crank-shaft, and 3 a suitable oil-filter. Located at the bottom of the crank case, is an inclined pipe, passage-way or channel 4 which is in communication with the crank case, as here shown, by means of branch passage-ways 5, into which the oil from the crank-case flows by gravity. Two oil pumps *a* and *b* are connected together and are operated by an eccentric strap 6 which passes around an eccentric 7 which is fastened to the crank-shaft 2. The pump *a* is larger than the pump *b* for the purpose hereinafter described. In practice, the diameter of the pump *a* is a

half-inch and the diameter of the pump *b* seven-sixteenths. The two pumps being driven by a single element 6 they have a uniform reciprocation, and the pump *a* being of greater capacity by reason of its larger diameter than the pump *b*, the former is capable of pumping more oil than the latter. This pump *a* draws the oil from the lower end of the inclined passage 4 through a pipe 8 and forces it through a pipe 9 to the center of the bottom of the filter 3 into a vertically-arranged pipe 10 which is located within the filter and the oil then flows through suitable openings 11 in the upper end of the pipe and falls through the filtering or screening surfaces 12 and 13 to the bottom of the reservoir. The oil is drawn from the bottom of this reservoir after it has passed through the screening or filtering surfaces by the pump *b* through a pipe 14 and is forced through a pipe 15 to a suitable distributing head 16. Communicating with this distributing head 16 are a suitable number of distributing pipes 17, which pipes are respectively connected to the points of the engine to be lubricated thereby. The pipe 17^a is a branch pipe which leads to a sight-feed 18 located upon the dash-board 19 by means of which the operator or driver can always tell whether the oil distributing pump is working, since a portion of the oil forced by the distributing pump *b* is carried through this pipe 17^a and through the sight-feed, from which it passes through the pipe 20 into the filter. By means of this arrangement a constant and positive circulation of the oil is insured to the bearings of the engine in large quantities, which falls to the bottom of the crank-case and into the passage 4, from which it is immediately removed by the pump *a*, and carried to the filter, from which it is removed and again circulated to the points to be lubricated.

For convenience in the further description and the claims, the pump *a* will be termed a feed-pump and the pump *b* a distributing pump. This arrangement furthermore enables the distributing pump to be made of a capacity sufficient to feed what might be termed a flushing quantity of oil to the bearings, a portion of which will run on the crank-

shaft and cranks and be splashed sufficiently to insure a proper lubrication of the cylinders, and over-lubrication by splash is prevented by reason of the fact that the feed pump is of greater capacity than the distributing pump, which absolutely prevents any accumulation of oil in the crank-case, and prevents excessive splash-lubrication by reason of the maintenance of a body of oil in the crank-case. That is to say, ample lubrication is insured without any possible danger of excessive lubrication with its undesirable features. Excessive lubrication to the cylinders causes a loss of oil by burning it and exhausting the disagreeable products of combustion through the exhaust of the engine; this invention prevents excessive lubrication to the cylinders thereby effecting an economy and preventing a nuisance, and also preventing the working of the oil through the cylinders and onto the spark-plug, causing them to short circuit, and also preventing the sooting of the spark-plugs by reason of the burning in the cylinders of the excessive oil fed thereto.

The present improvement also avoids the use of expensive forced-feed lubricators in which there is a separate pump for each distributing line, which mechanisms are delicate and liable to get out of order and fail to properly perform their function.

Having thus described the invention, what is claimed and desired to be secured by Letters Patent, is:—

1. A lubricating system for automobiles comprising a filter, a crank-case, a feed-pump in communication with the crank-case and with the filter and adapted to deliver oil from the crank-case to the filter, a distributing pump in communication with the filter, a distributing head in communication with the distributing pump, and a plurality of distributing pipes in communication with the distributing head, the distributing pump adapted to take oil from the filter and force it to the distributing head and through the said distributing pipes.

2. A lubricating system for automobiles comprising a crank-case, a filter, a distributing head, a feed-pump in communication with the bottom of the crank-case and with the filter and adapted to convey oil from the crank case to the filter, a distributing pump in communication with the filter and with the distributing head, the pump adapted to take oil from the filter and deliver it to the distributing head, a series of distributing pipes communicating with the distributing head, and a sight-feed also in communication with the distributing head and with the filter, whereby a portion of the oil is forced from the distributing head through the sight-feed to the filter for the purpose described.

3. A lubricating system for automobiles comprising a crank-case, an oil-receiving reservoir, a distributing head, a feed-pump in communication with the crank-case and with the reservoir and adapted to convey oil from the crank-case to the reservoir, a distributing pump in communication with the reservoir and with the distributing head and adapted to take oil from the reservoir and force it into the distributing head, a plurality of distributing pipes in communication with the distributing head, and a sight-feed in communication with the distributing head and with the reservoir for the purpose described.

4. A lubricating system for automobiles comprising a crank-case, an oil-receiving reservoir, a distributing head, a feed-pump in communication with the crank-case and with the reservoir and adapted to convey oil from the crank-case to the reservoir, a distributing pump in communication with the reservoir and with the distributing head, the two pumps connected and moving together, actuating means common to and connected with the said pumps for operating them, and distributing pipes in communication with the distributing head.

5. A lubricating system for automobiles comprising a crank-case, an oil-receiving reservoir, a distributing head, a feed-pump in communication with the crank-case and with the reservoir, a distributing pump in communication with the reservoir and with the distributing head, and a plurality of distributing pipes in communication with the said head and with the crank-case, the said pumps connected and moving in unison together, the feed-pump having greater pumping capacity than the distributing pump, for the purpose described.

6. A lubricating system for automobiles comprising a crank-case, an oil reservoir in communication with and receiving oil from said crank-case, an oil distributing head, a plurality of distributing pipes in communication with the distributing head and with the points to be lubricated, a sight-feed receiving oil from said distributing head and having an outlet in communication with said reservoir, and an oil distributing pump taking oil from the reservoir and forcing it through the distributing head and the distributing pipes to the points to be lubricated and through the sight-feed to determine whether oil is being forced to the distributing head.

7. A lubricating system for automobiles comprising a crank-case, an oil-receiving reservoir, a distributing head, a feed-pump in communication with the crank-case and with the reservoir, a distributing pump in communication with the reservoir and with

the distributing head, and a plurality of distributing pipes in communication with said distributing head and with the crank-case, the feed pump adapted to take the oil from
5 the crank-case faster than the distributing pump feeds it thereto through the head and distributing pipes.

In testimony whereof we affix our signatures in presence of two witnesses.

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Witnesses:

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