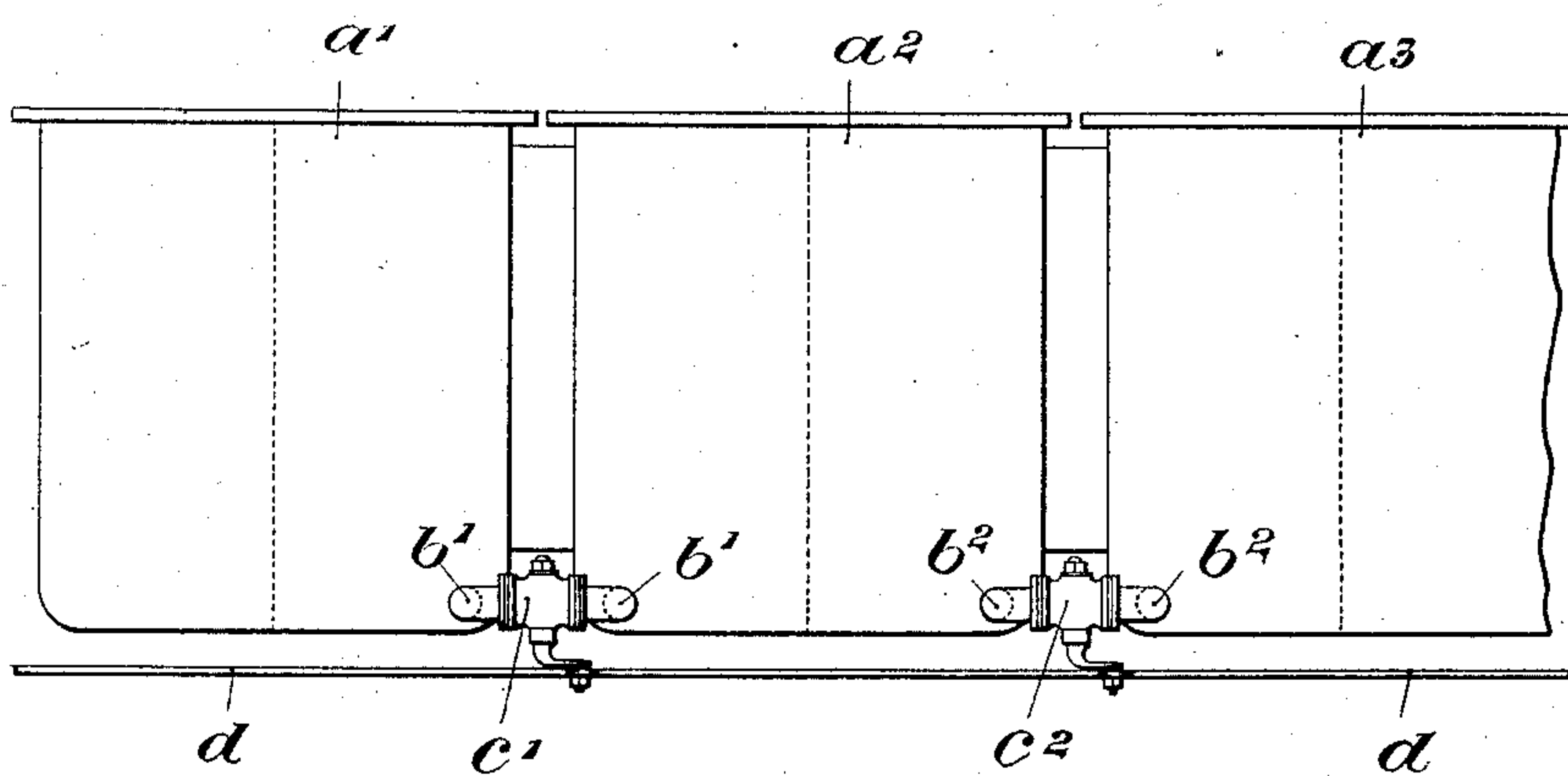


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LUBRICATING DEVICE FOR GAS ENGINE CYLINDERS.
APPLICATION FILED APR. 30, 1908.

907,039.

Patented Dec. 15, 1908.



Witnesses:

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UNITED STATES PATENT OFFICE.

OSKAR GRIMM, OF OLBERSLEBEN, GERMANY.

LUBRICATING DEVICE FOR GAS-ENGINE CYLINDERS.

No. 907,039.

Specification of Letters Patent.

Patented Dec. 15, 1908.

Application filed April 30, 1908. Serial No. 430,140.

To all whom it may concern:

Be it known that I, OSKAR GRIMM, a subject of the German Emperor, residing at Olbersleben, Grand Duchy of Saxe-Weimar-Eisenach, Germany, have invented certain new and useful Improvements in Lubricating Devices for Gas-Engine Cylinders, of which the following is a specification.

My invention relates to a device for regulating the level of oil in the crank casings of explosion engines for motor vehicles, which is characterized by the single chambers of a sub-divided crank casing being connected to each other by means of communicating conduits which can be closed.

The arrangement of pipes the communication of which can be closed, for connecting the chambers of the crank casing divided by partitions makes it possible to maintain a uniform level of oil in the separate compartments, and to maintain the said uniform level within given limits. This results in an important advantage in that the lubrication of the single cylinders and of the corresponding parts is constant and perfect.

As is well known, if there were no partitions in the crank casing of explosion engines for motor vehicles, the level of the oil in the case of engines with several cylinders would be, when the car is in the horizontal position, always such that one cylinder would be lubricated always in the same way as another. In order to prevent during the driving on uneven ground or in going up-hill, the back cylinders from getting too much or the whole of the oil, and during down-hill travel, the front cylinders from getting too much or the whole of the oil, it is necessary to divide the crank casing into several chambers separated from each other. The most uniform lubrication, independent of hills, would be accordingly obtained by dividing the crank casing into as many chambers as there are cylinders in the engine.

In order to remedy the difficulty of control as far as possible the crank casing of an engine is commonly divided in such manner that two cylinders receive lubrication from one chamber. This arrangement is also attended with difficulties, for in the case of a four-cylinder engine, it is necessary to have two, and in the case of a six-cylinder engine, three lubricating chambers, inde-

pendent of each other. This difficulty is completely obviated by the arrangement according to this invention, in which the single chambers of the sub-divided crank casing are connected together by conduits which can be closed.

A construction according to this invention is illustrated in the accompanying drawing. As will be seen from the same, each chamber a^1 , a^2 , a^3 , is connected to the adjoining one by a pipe, of a sufficiently large inside diameter, arranged almost at the bottom of the chamber. Each pipe b^1 , b^2 can be closed by a cock c^1 c^2 . All the cocks c^1 c^2 are connected by a rod d , so that it is possible to open or close simultaneously all the cocks, if desired, from the driver's seat.

The arrangement is used in such manner that the cocks c^1 c^2 are always closed during driving, and when driving on a level ground, they are initially opened for a second, in order to get the same level and consequently an equal quantity of oil in all the chambers. The condition of the lubricant in the crank case can be readily determined by a driver of ordinary skill from the fumes escaping at the exhaust, such fumes being decidedly marked and unpleasant when the parts are not properly lubricated. Should it happen that more oil is consumed in one chamber than in another, the character of the fumes will indicate such condition and the difficulty is remedied by opening the cocks momentarily as soon as the vehicle reaches level ground.

As the lubricating of all the cylinders is the same, whether the car is traveling on level ground or going up or down-hill, the working of the engine is uniform.

The invention consists, therefore, in combining the advantages of a single crank case chamber during traveling on level ground, with the advantages of a sub-divided casing in traveling on gradients, by establishing communication between the several crank case chambers in such manner that it can be closed, whereby all drawbacks are avoided.

What I claim is:

1. In a device of the type set forth, the combination with a crank case formed of a plurality of independent lubricating chambers, of pipes connecting the chambers, and a valve in each pipe.

2. In a device of the type set forth, the combination with a crank case formed of a plurality of independent lubricating chambers, of pipes connecting the chambers, a
5 valve in each pipe, and means for operating the valves in unison.

In testimony whereof I have hereunto set

my hand in presence of two subscribing witnesses.

OSKAR GRIMM.

Witnesses:

K. WALTER,

WILHELM DAHLE.