

No. 744,011.

PATENTED NOV. 10, 1903.

A. G. RONAN.
MOTOR VEHICLE CONSTRUCTION.
APPLICATION FILED DEC. 28, 1902.

NO MODEL.

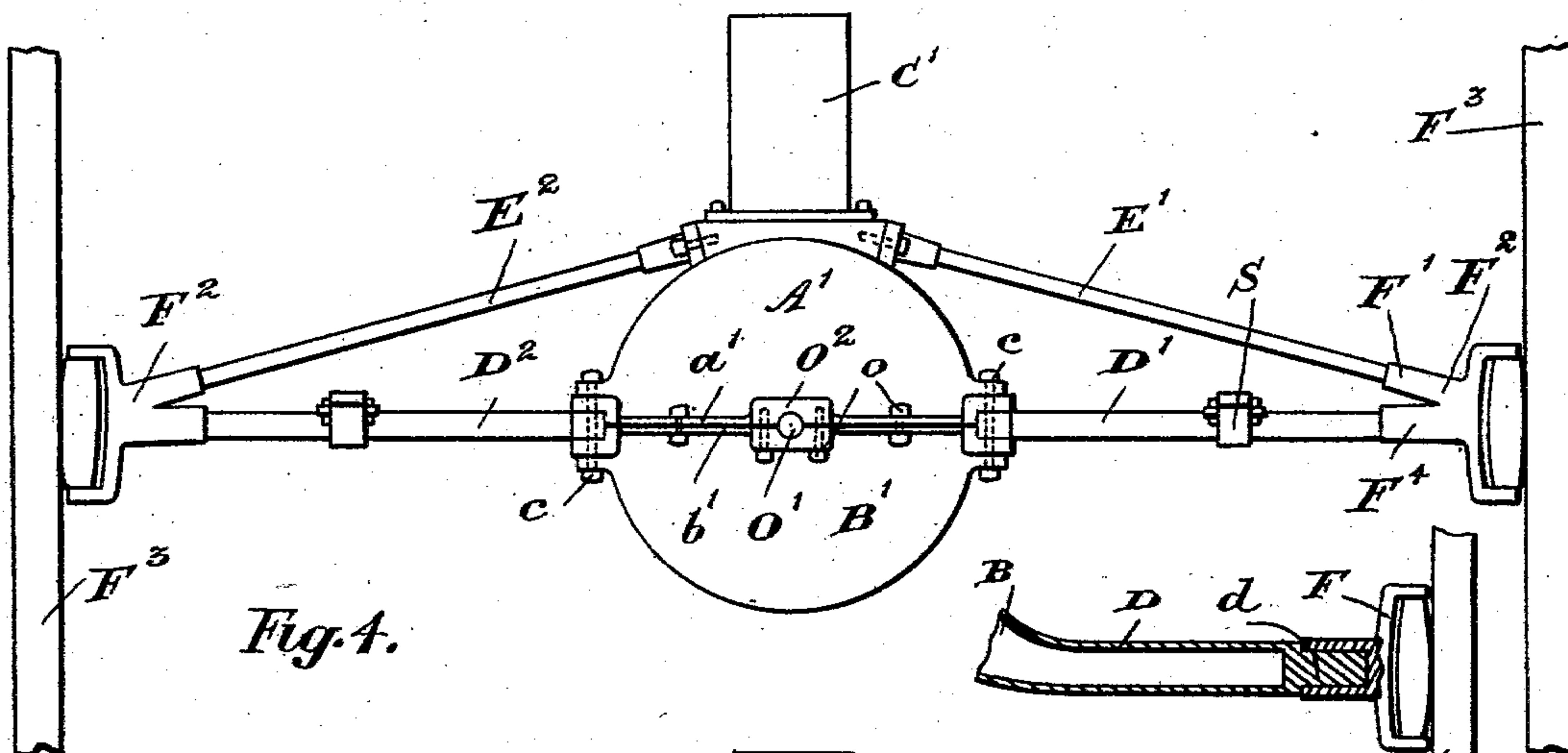


Fig. 4.

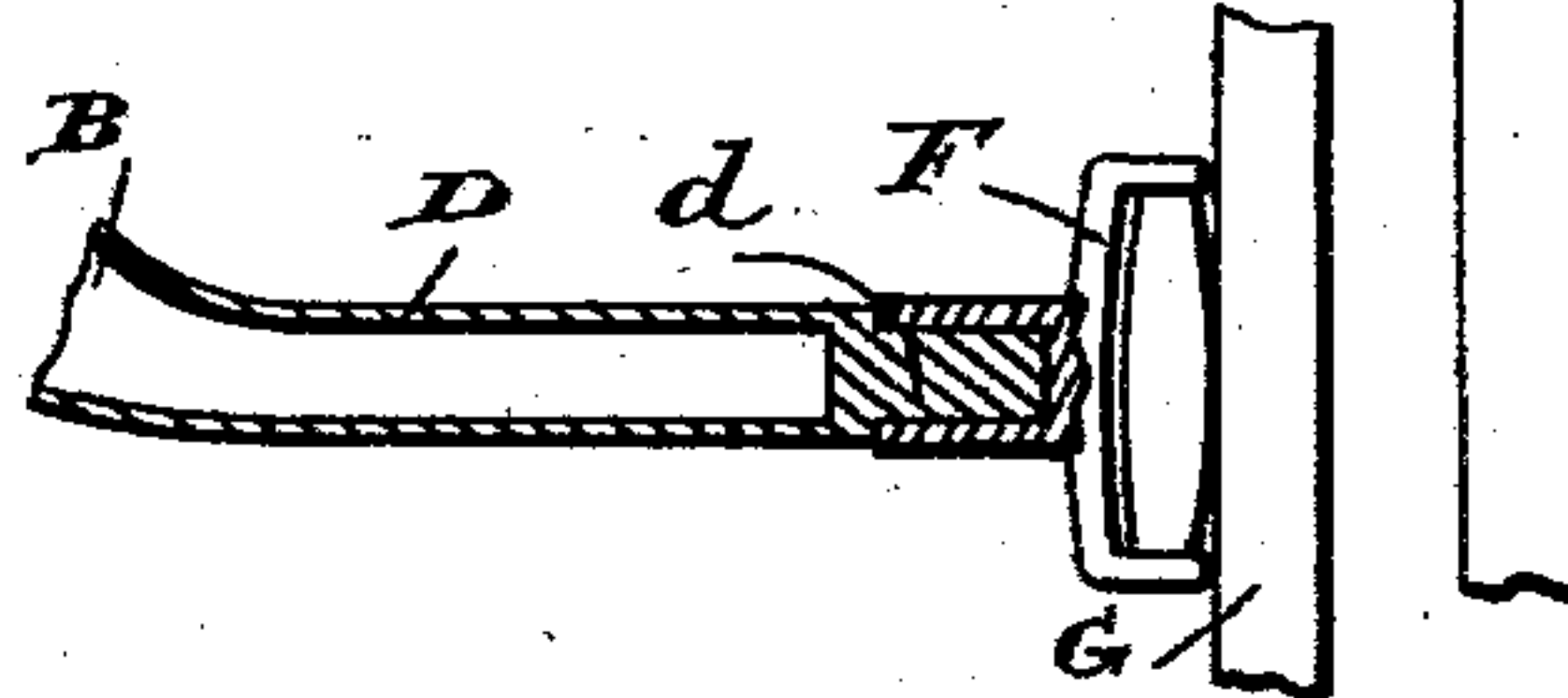


Fig. 5.

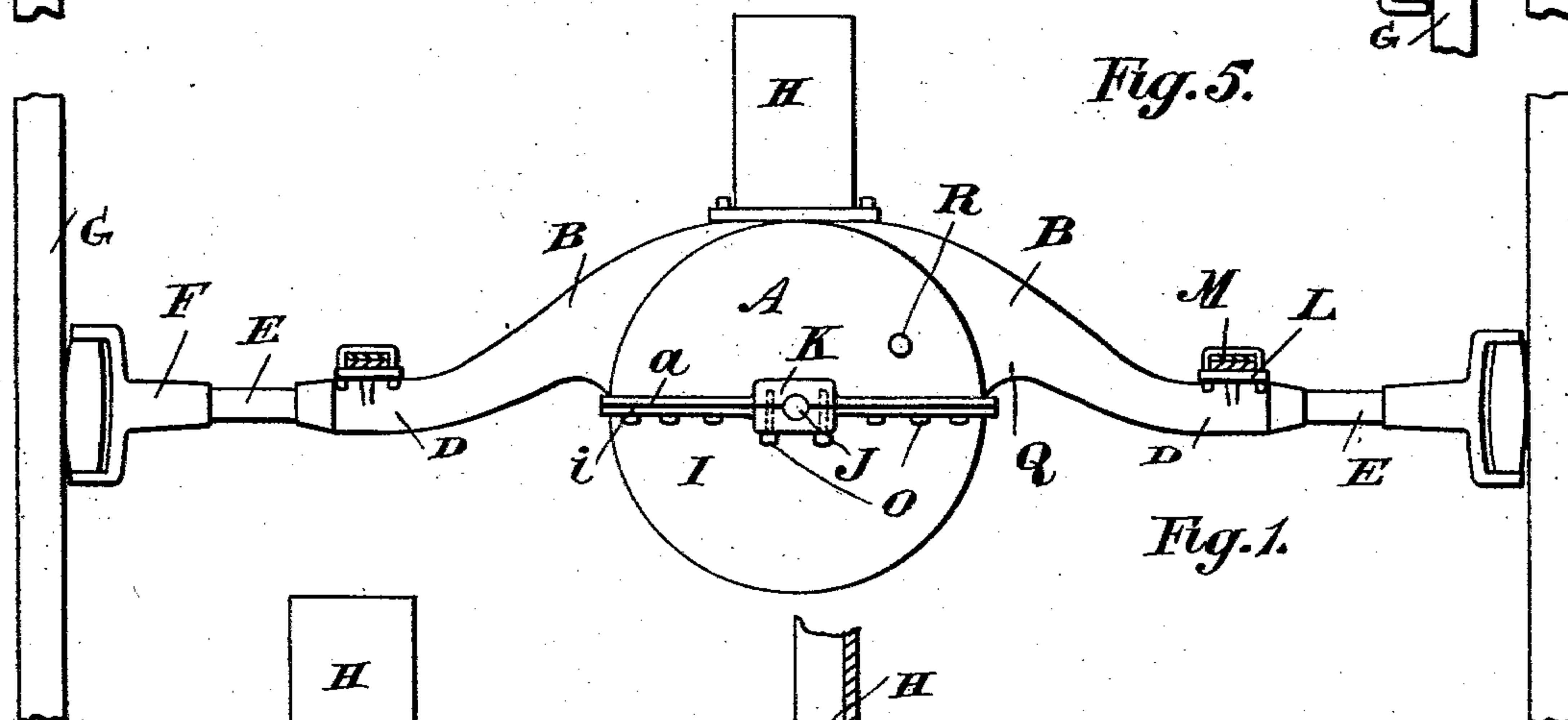


Fig. 1.

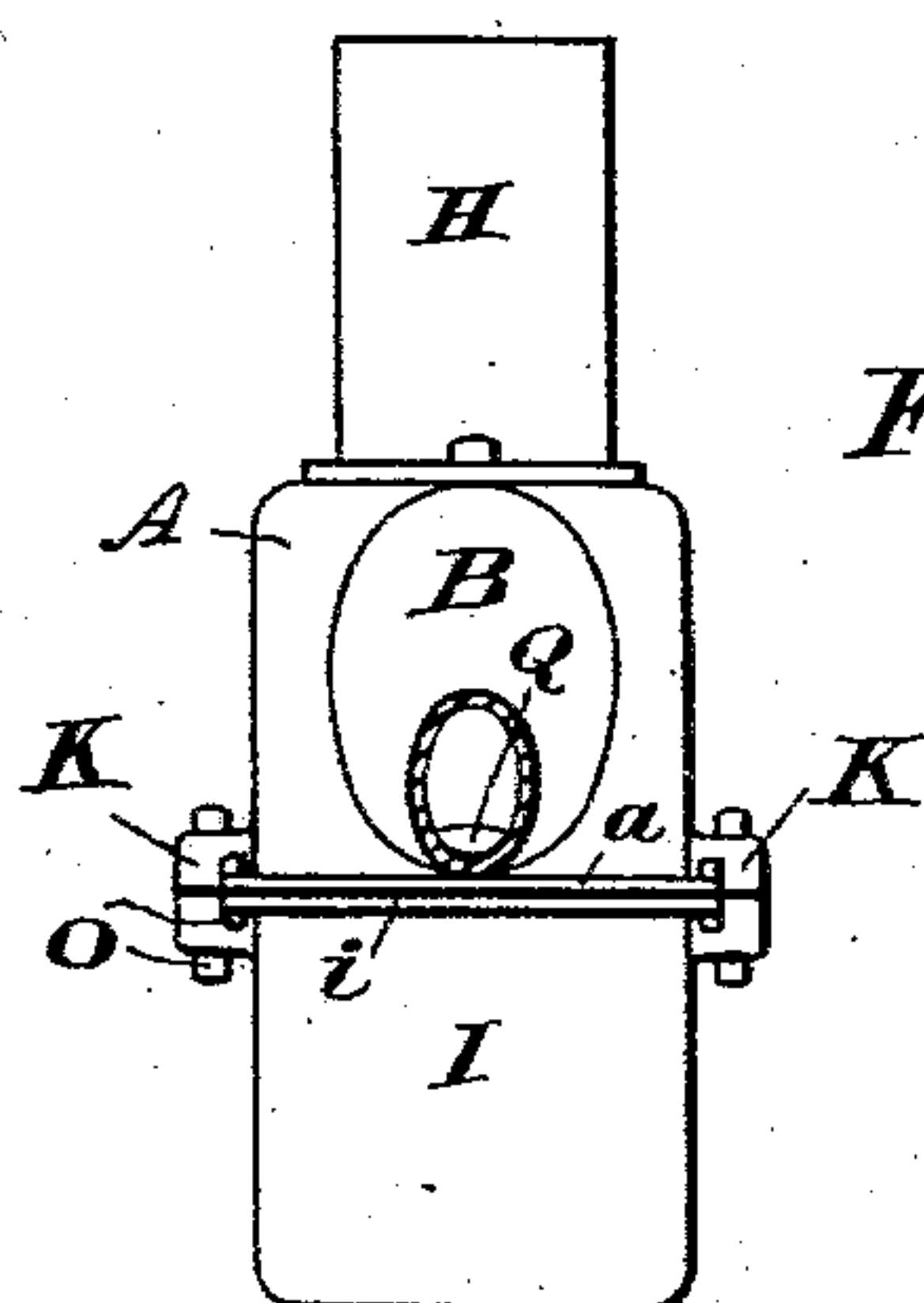


Fig. 3.

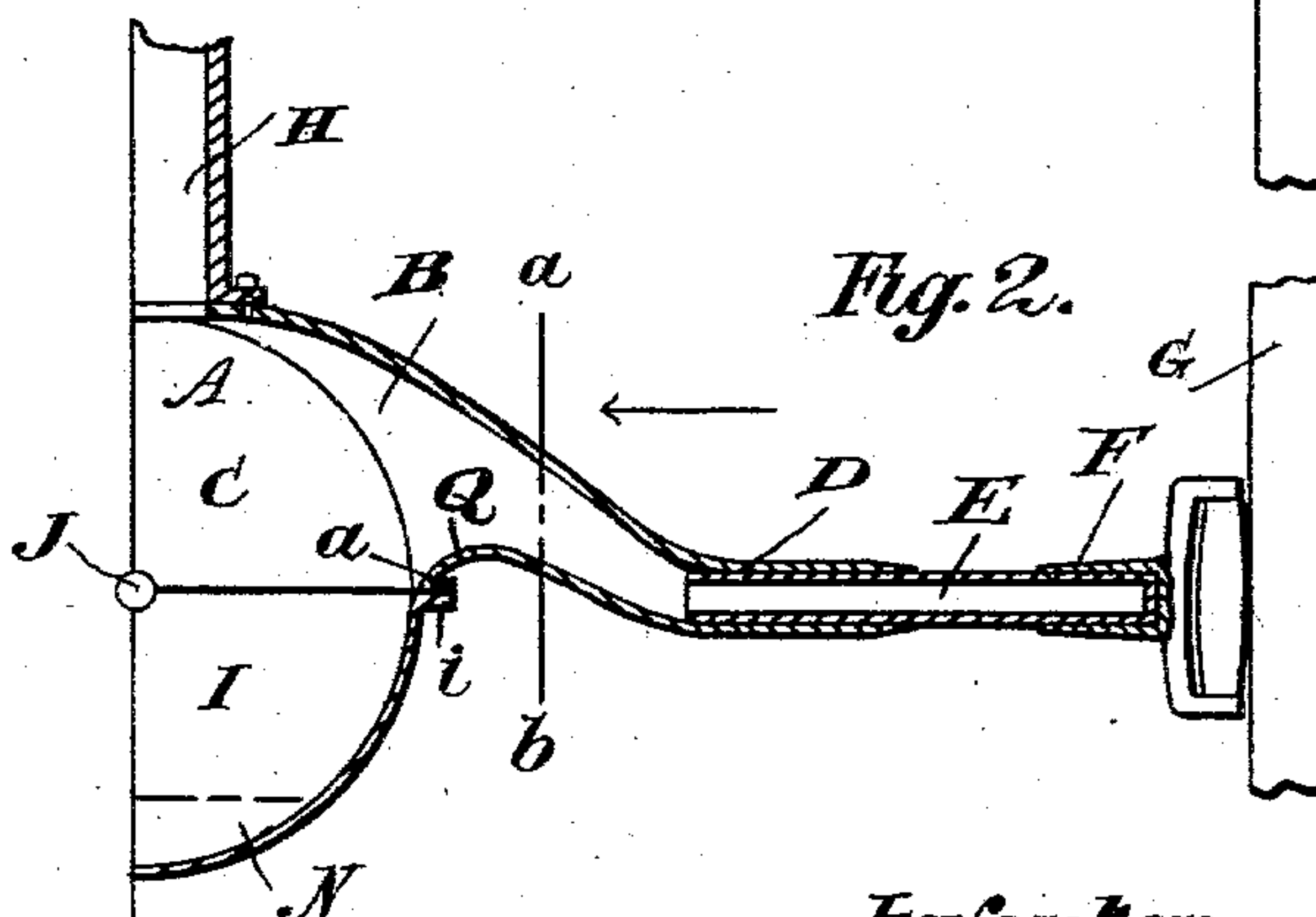


Fig. 2.

Witnesses.

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UNITED STATES PATENT OFFICE.

ANSON GROVES RONAN, OF TORONTO, CANADA.

MOTOR-VEHICLE CONSTRUCTION.

SPECIFICATION forming part of Letters Patent No. 744,011, dated November 10, 1903.

Application filed December 26, 1902. Serial No. 136,620. (No model.)

To all whom it may concern:

Be it known that I, ANSON GROVES RONAN, a subject of the King of Great Britain, residing in the city of Toronto, in the county of York, in the Province of Ontario, Canada, have invented certain new and useful Improvements in Motor-Vehicle Construction, of which the following is a specification.

My invention relates to improvements in motor-vehicle construction; and the objects of my invention are, first, to form or construct a vertically-held suitably-divided engine-casing an integral part of a non-rotatable axle of a motor-vehicle, so as to reduce to a minimum the vibration of the engine on the vehicle-body; secondly, to preferably incorporate the divided engine-casing in the front non-rotatable axle of a motor-vehicle and place same as above described, so that same will be air-cooled, thus dispensing with the use of a water-jacket; thirdly, to suitably divide the engine-casing, so that the operating parts of the engine can be removed therefrom without disconnecting the non-rotatable vehicle-axle, and, fourthly, to construct the axle so that same may carry part of the oil required for splash lubrication; and it consists, essentially, of an engine-casing suitably divided, so that the operating parts of the engine may be removed therefrom without disconnecting the non-rotatable vehicle-axle, non-rotatable axle members extending from each side of said engine-casing, the same forming an integral part of said axle members and is unyieldingly held at right angles thereto, so that the engine-piston will operate at right angles to said vehicle-axle, as hereinafter more particularly explained.

As will be seen from the drawings, my engine is supported vertically. I do not confine myself to any particular construction of axle nor of engine.

Figure 1 is a front side elevation of my preferred form of axle and engine-casing. Fig. 2 is a vertical central longitudinal section through one-half of Fig. 1. Fig. 3 is a vertical section on the line *a b*, Fig. 2, looking in the direction indicated by arrow. Fig. 4 is a front elevation of an alternative form of axle and engine-casing. Fig. 5 is an alternative form of my preferred form of axle.

In the drawings like letters of reference indicate corresponding parts in each figure.

A is the upper portion of the engine-casing, of which the side extensions B preferably form an integral part thereof or may be suitably secured thereto. On referring to Figs. 2 and 3 it will be noticed that these side extensions are hollow and open directly into the crank-chamber *c*. These said side extensions are constructed with hollow extensions D, in which will preferably be suitably secured a tube E, communicating therewith. Over the closed or outer ends of the tubes E are suitably secured the forgings F, in which the wheels G are suitably held. The wheels G may of course be secured to my axle in many ways without departing from the spirit of my invention, and I do not confine myself to the construction shown for that purpose. Although not shown, it will of course be understood that the wheels are provided with any suitable steering-gear for same.

H is the cylinder, which is suitably secured to the upper portion A of the engine-casing.

I is the lower portion of the engine-casing, which is suitably secured to the upper portion A.

J is the shaft of the engine, held in a bearing K, formed by the portions A and I. It will be noticed that I form the said portions A and I with flanges *a* and *i*, respectively, and secure the said portions together by any suitable bolts O. From this construction of engine-casing it will be understood that by removing the bolts O the lower portion I may be quickly and easily removed from the upper portion, so that the working parts of the engine may be removed from said casing.

L represents any suitable spring-blocks secured to or forming part of the axle, in which the springs M are suitably held. As is quite common, in the lower portion I of the engine-casing I will have a suitable quantity of oil N for the purpose of splash lubrication.

When the working parts of the engine, which are not shown, operate within the engine-casing, the oil is of course splashed around, and by reason of the hollow construction of the side extensions B and the tubes E oil will be lodged therein, which will be, when the motor-vehicle is passing over un-

even roadways, splashed back again into the said engine-casing, thus contributing to a more thorough lubrication of the parts. By preferably constructing the side extensions

5 B with an upwardly-curved portion Q, I enable the said axle to always retain a certain amount of oil, for the purpose set forth.

R is any suitable plug by means of which oil is introduced into the engine-casing.

10 I shall now describe an alternative form of invention. A' is the upper portion of the casing, and B' the lower portion thereof. C' is the cylinder, which is suitably secured to the upper portion A'. The said portions are provided with suitable flanges a' and b', respectively, and are secured together by suitable bolts c. O' is the shaft, held in a suitable bearing O², formed by the said upper and lower portions. In this construction of my
20 invention it will be noticed that I have divided the axle into two portions D' and D² and secured same to the engine-casing in any suitable manner, preferably by means of bolts c. E' and E² are suitable braces, which
25 are suitably secured at their upper ends to the upper portion A' and at their lower ends are suitably secured in the sockets F' of the forgings F², to which the wheels F³ are suitably secured. The outer ends of the portions
30 D' and D² are suitably secured in the sockets F⁴. From this form of my invention it will be understood that the lower portion B' of the engine-casing may be readily removed, so that the working parts may be easily gotten
35 at. It will be further seen from this alternative form that if the engine-casing were removed the front axle of the motor-vehicle would be divided into two parts. The said alternative form is also provided with any
40 suitable spring-blocks S.

I may, if I find it convenient, construct the extensions D of the side extensions B long enough, so that they may of themselves form the axle, as shown in Fig. 5. In the alternative
45 form of axle shown in Fig. 5 the extensions D are provided with closed outer ends d.

From this specification it will be understood that I may divide the engine-casing horizontally, vertically, or otherwise without departing from the spirit of my invention.
50

What I claim as my invention is—

1. An improved motor-vehicle construction comprising an engine-casing suitably divided so that the operating parts of the engine may
55 be removed therefrom without disconnecting the non-rotatable vehicle-axle, and non-rotatable axle members extending from each side of said engine-casing, the said engine-casing forming an integral part of said axle members

and is unyieldingly held at right angles thereto so that the engine-piston will operate at right angles to said vehicle-axle. 60

2. An improved motor-vehicle construction comprising an engine-casing suitably divided so that the operating parts of the engine may
65 be removed therefrom without disconnecting the non-rotatable vehicle-axle, and non-rotatable hollow axle members, designed to contain oil, extending from each side of said engine-casing and communicating with the
70 crank-chamber of same, the said engine-casing forming an integral part of said axle members and is unyieldingly held at right angles thereto so that the engine-piston will operate at right angles to said vehicle-axle. 75

3. An improved motor-vehicle construction comprising an engine-casing horizontally divided to form upper and lower portions, and non-rotatable axle members extending from
80 each side of the upper portion of said engine-casing, the said engine-casing forming an integral part of said axle members and is unyieldingly held at right angles thereto so that the engine-piston will operate at right angles to said vehicle-axle. 85

4. An improved motor-vehicle construction comprising an engine-casing horizontally divided to form upper and lower portions, and non-rotatable hollow axle members extending
90 from each side of the upper portion of said engine-casing, and communicating with the crank-chamber of said engine-casing, the said engine-casing forming an integral part of said axle members and is unyieldingly held at right angles thereto so that the engine-piston
95 will operate at right angles to said vehicle-axle.

5. An improved motor-vehicle construction comprising an engine-casing horizontally divided to form upper and lower portions, and non-rotatable hollow axle members, formed
100 with an upwardly-curved portion which prevents the too free discharge of oil therefrom into the crank-chamber, extending from each side of the upper portion of said engine-casing, and communicating with the crank-chamber
105 of said engine-casing, the said engine-casing forming an integral part of said axle members and is unyieldingly held at right angles thereto so that the engine-piston will operate at right angles to said vehicle-axle. 110

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

ANSON GROVES RONAN.

Witnesses:

EGERTON R. CASE,
W. H. SMITH.