

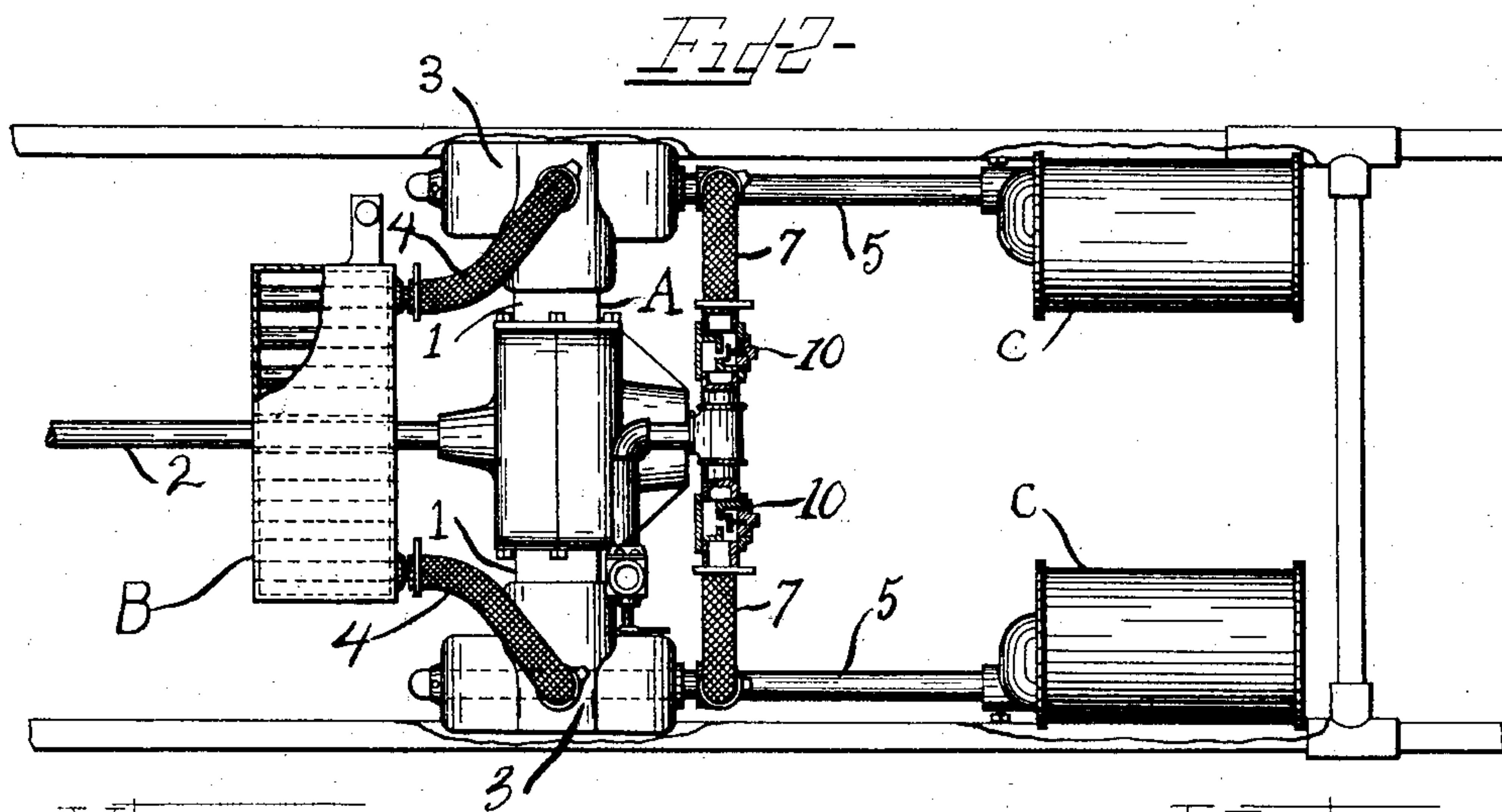
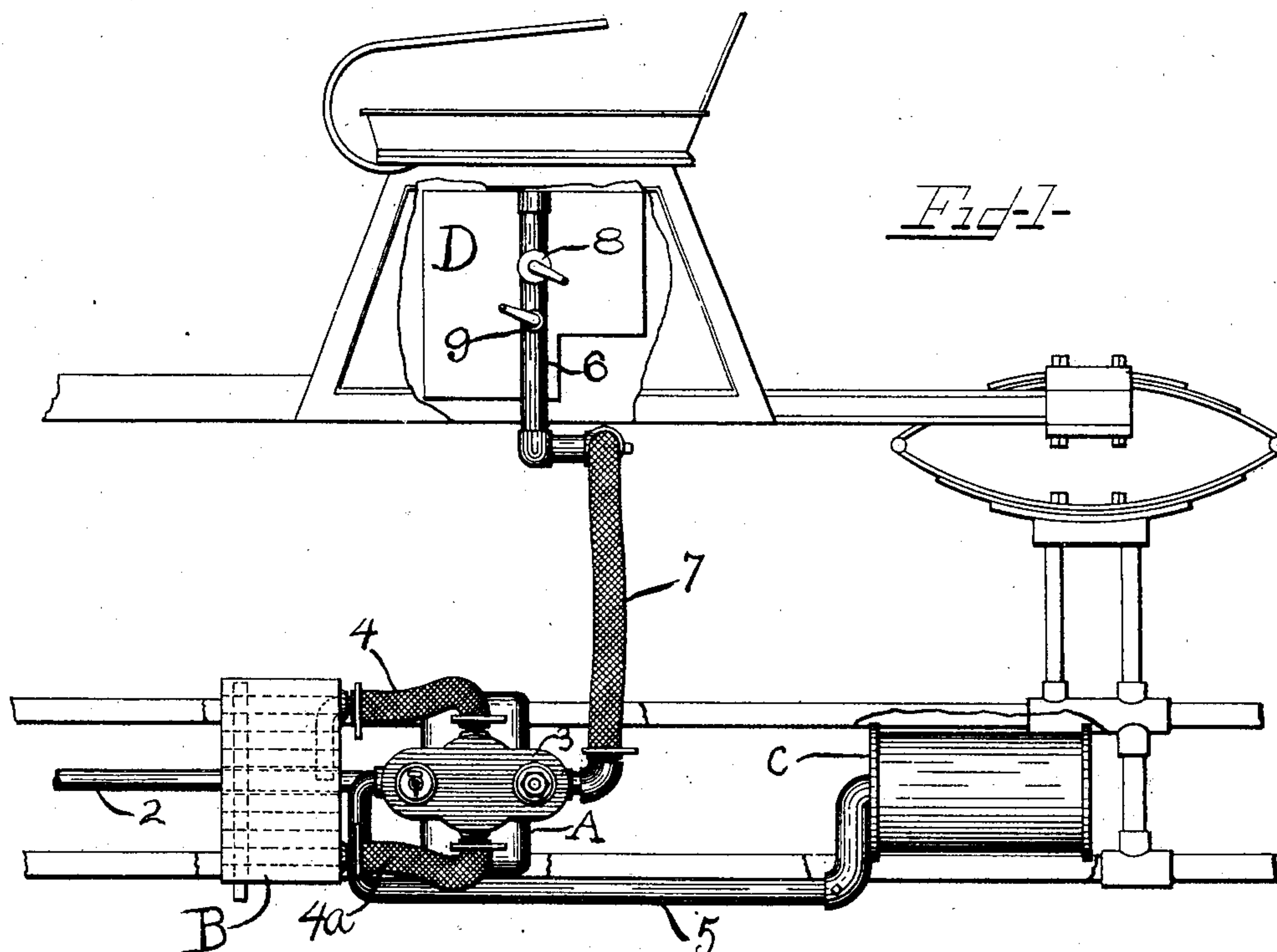
No. 765,254.

PATENTED JULY 19, 1904.

W. W. ROBINSON.
MOTOR VEHICLE.

APPLICATION FILED DEC. 7, 1900.

NO MODEL.



Witnesses —

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UNITED STATES PATENT OFFICE.

WALTER W. ROBINSON, OF CHICAGO, ILLINOIS, ASSIGNOR, BY MESNE ASSIGNMENTS, TO FRIEDMAN AUTOMOBILE COMPANY, OF CHICAGO, ILLINOIS, A CORPORATION OF ILLINOIS:

MOTOR-VEHICLE.

SPECIFICATION forming part of Letters Patent No. 765,254, dated July 19, 1904.

Original application filed January 10, 1900, Serial No. 930. Divided and this application filed December 7, 1900. Serial No. 38,999. (No model.)

To all whom it may concern:

Be it known that I, WALTER W. ROBINSON, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented a certain new and useful Improvement in Motor-Vehicles, (Case No. 11,) of which the following is a full, clear, concise, and exact description, reference being had to the accompanying drawings, forming a part of this specification.

My invention relates to motor-vehicles, and in particular to the propelling mechanism of such vehicles.

In an application filed by me January 10, 1900, Serial No. 930, for a gas-engine I have illustrated and described a gas-engine particularly fitted for use upon motor-vehicles. In this application also I have shown certain attachments for the engine by which certain desirable results in connection with the operation of a gas-engine could be secured. Among these attachments is an arrangement for supplying the engine with the explosive compound for cooling the cylinders of the engine in which the explosion occurs and for receiving the exhaust from the engine in such a way that no undesirable noise is produced. In the present application I have shown and described these engine attachments and arrangements, having divided out this subject-matter from my said other application.

In the accompanying drawings, Figure 1 is an elevation, and Fig. 2 is a plan, of a portion of a motor-vehicle and a gas-engine thereon and attachments therefor for supplying the explosive mixture, cooling the cylinders of the engine, and receiving the exhaust therefrom, a part of the vehicle structure and operating mechanism shown in Fig. 1 being omitted in Fig. 2 for convenience of illustration.

In the drawings, A represents the gas-engine, which may be of any suitable or desired type, the type shown being that of my said other application. This engine A has a couple of oppositely-disposed cylinders 1 1, which act alternately in opposite directions upon a centrally-arranged shaft 2. This

shaft 2 is understood to be connected in some suitable way for driving the vehicle. The engine A is understood to be mounted upon the vehicle in such a way that the shaft 2 runs lengthwise of the vehicle, the body of the engine therefore extending across the same. The cylinders 1 1 are each provided with water-jackets 3 3, which are understood to be properly supplied with water or other cooling fluid for maintaining the temperature of the cylinders at a properly low level. These water-jackets can be of any suitable or preferred construction, and hence no particular construction has been shown.

A tank or reservoir B for cooling fluid for the water-jackets 3 3 is provided, this tank or reservoir B being conveniently disposed in advance of the engine A and being so constructed that it surrounds the engine-shaft 2. This tank or reservoir B is constructed with tubes which extend in it from side to side, the direction of the tubes being, it will be seen, lengthwise of the vehicle, or, in other words, being extended in the direction of movement of the vehicle. By this arrangement the air can circulate freely through the tubes of the tank, and this circulation will be so great when the vehicle is moving that the cooling effect upon the contents of the tank will be exceedingly large. The tank B is connected with the jackets 3 3 of the engine A by tubes or pipes 4 4 and 4^a 4^a, which are desirably made of hose or like material in order to permit a relative movement between the jackets and the tank without injury to either or to the connection. Each of the jackets 3 has one pair of flexible tubes 4 and 4^a extending between it and the tank B. The tube 4 is to convey the cooling fluid from the jacket to the tank, and the tube 4^a is to convey the same from the tank to the jacket. The tube 4 is desirably connected with the tank near the top thereof, and the tube 4^a connected therewith near the bottom thereof, and these tubes are respectively attached to their respective jackets at the top and bottom thereof. In this way a continual circulation is induced, the heated fluid rising in the jack-

ets and passing through the tubes 4 4 into the tank B, whence it becomes cooled and descends and then passes out of the tank into the jackets by way of the tubes 4^a 4^a. The exhaust from the cylinders 1 1 is discharged into pipes 5 5, which extend rearwardly from the rear sides of the cylinders and are connected with mufflers or detonators C C. These mufflers or detonators C C are of any suitable or desired construction adapted to receive the exhaust, and thus prevent the discharge of steam from the engine from producing an undesirable noise.

Fluid, such as gasolene, from which the explosive compound is produced, is confined in and carried by a tank D, which is understood to be arranged and supported above the engine A. From the tank D the fluid is conveyed to the engine A by a suitable connection, conveniently consisting of a pipe 6, attached to the tank D, and flexible tubes or hose 7 7, extending between the pipe 6 and the cylinders of the engine A. The pipe 6 is provided with two valves 8 and 9, the former of which is to control a supply of liquid passing from the tank and the other of which is to control the amount of air permitted to flow into the pipe and mix with the liquid.

The T forming the connection between the pipe 6 and the flexible tubes or hose 7 7 is provided with check-valves 10 10, adapted to permit the flow of gas into the tubes 7 7, but to prevent the explosion of the gas in the cylinders from extending into the reservoir D.

The portions of the vehicle upon which the various parts are mounted are shown in outline in the drawings, it being understood that the particular construction of the vehicle for the accommodation of the various parts is largely one of choice and that shown herein is merely shown as an example. In the vehicle in which I have mounted the engine and

attachments herein shown I desirably arrange the tank D in a box forming the seat of the vehicle. In such case the handles for the valves 8 and 9 project from the side of the box forming the seat, so that they can easily be reached and operated by a person sitting upon the seat. In this way I arrange for the easy control of the explosive mixture, and at the same time I locate the tank in a position where it will occupy otherwise waste space and will at the same time be elevated above the engine, so that the compound or mixture can readily descend to the engine-cylinders.

While I have herein shown and described the preferred embodiment of my invention, I do not wish to be limited to the precise construction herein set forth; but,

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

In a motor-vehicle, the combination with the frame, of a jacketed explosive-engine mounted thereupon, a reservoir for the liquid fuel of the engine, located beneath the seat, suitable connections extending from the reservoir to the engine and provided with valves part of said connection being flexible, a tank for the jacket-water, said tank being supported by the frame in advance of the engine, and having passages extending lengthwise of the vehicle, and having also a passage for the engine-shaft, flexible tubes connecting the engine with said tank, and mufflers also supported by the vehicle-frame and arranged in the rear of the engine and connected therewith, substantially as described.

In witness whereof I hereunto subscribe my name this 26th day of November, A. D. 1900.

WALTER W. ROBINSON.

Witnesses:

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