

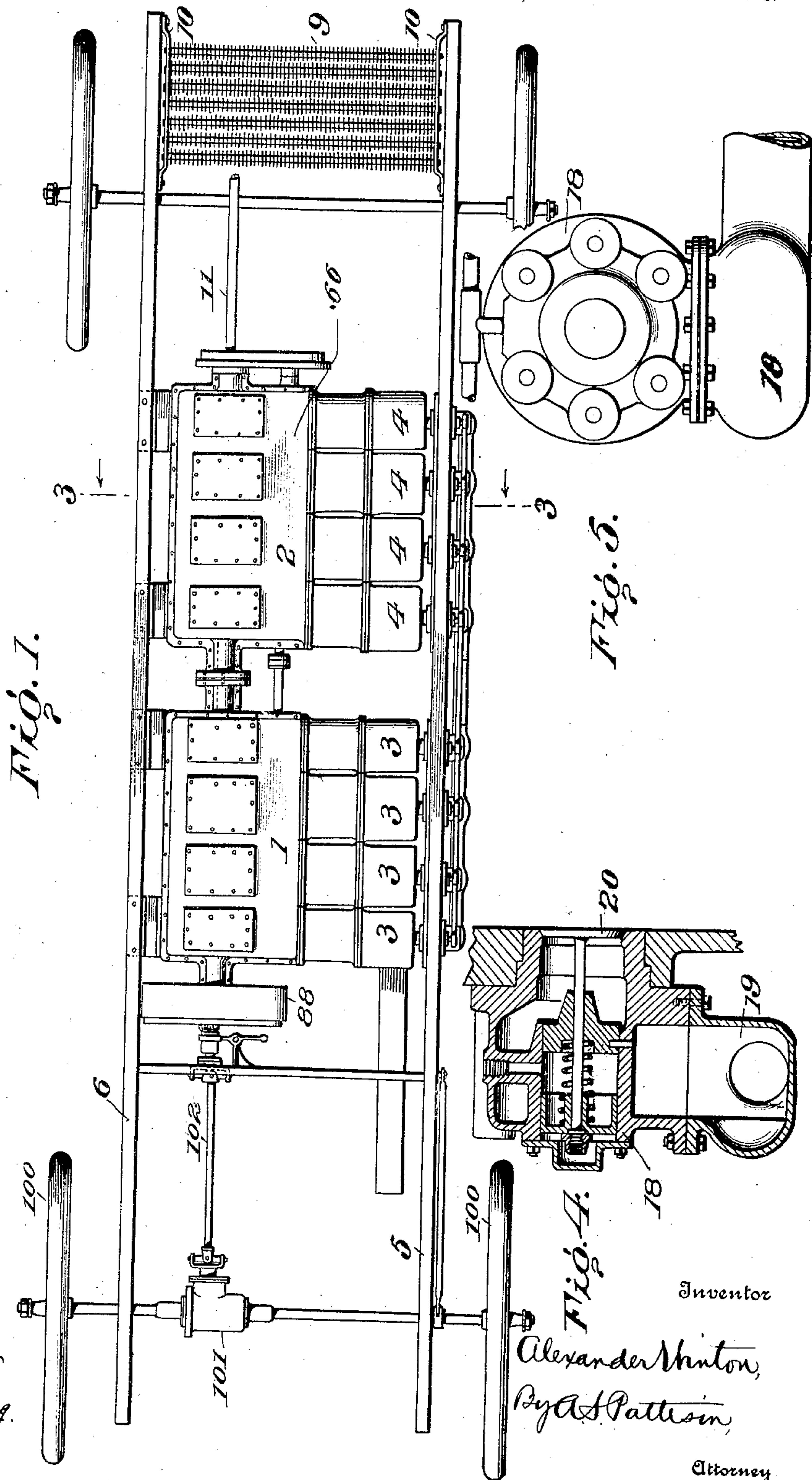
No. 884,117.

PATENTED APR. 7, 1908.

A. WINTON.
MOTOR VEHICLE.

APPLICATION FILED MAY 25, 1903. RENEWED OCT. 1, 1907.

2 SHEETS—SHEET 1.



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Fig. 2.

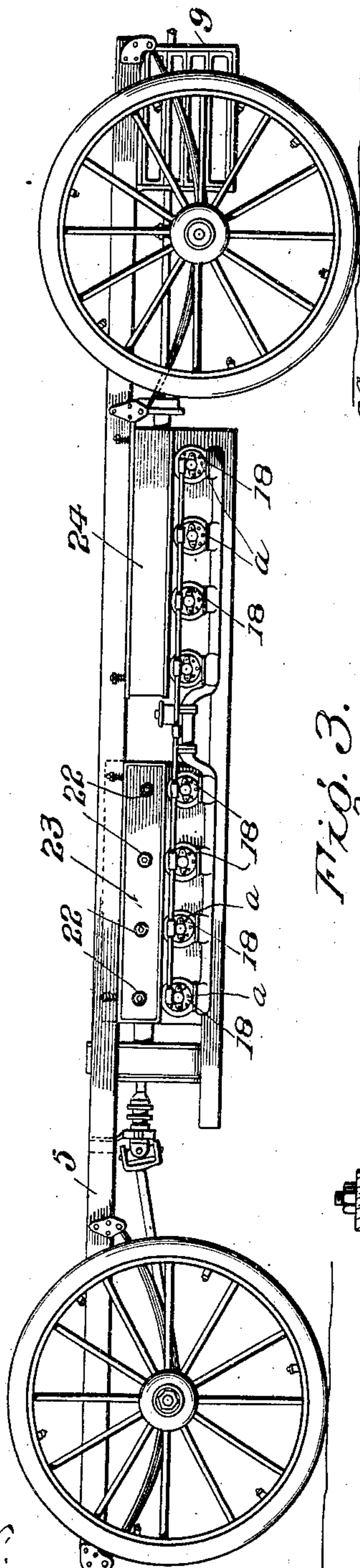
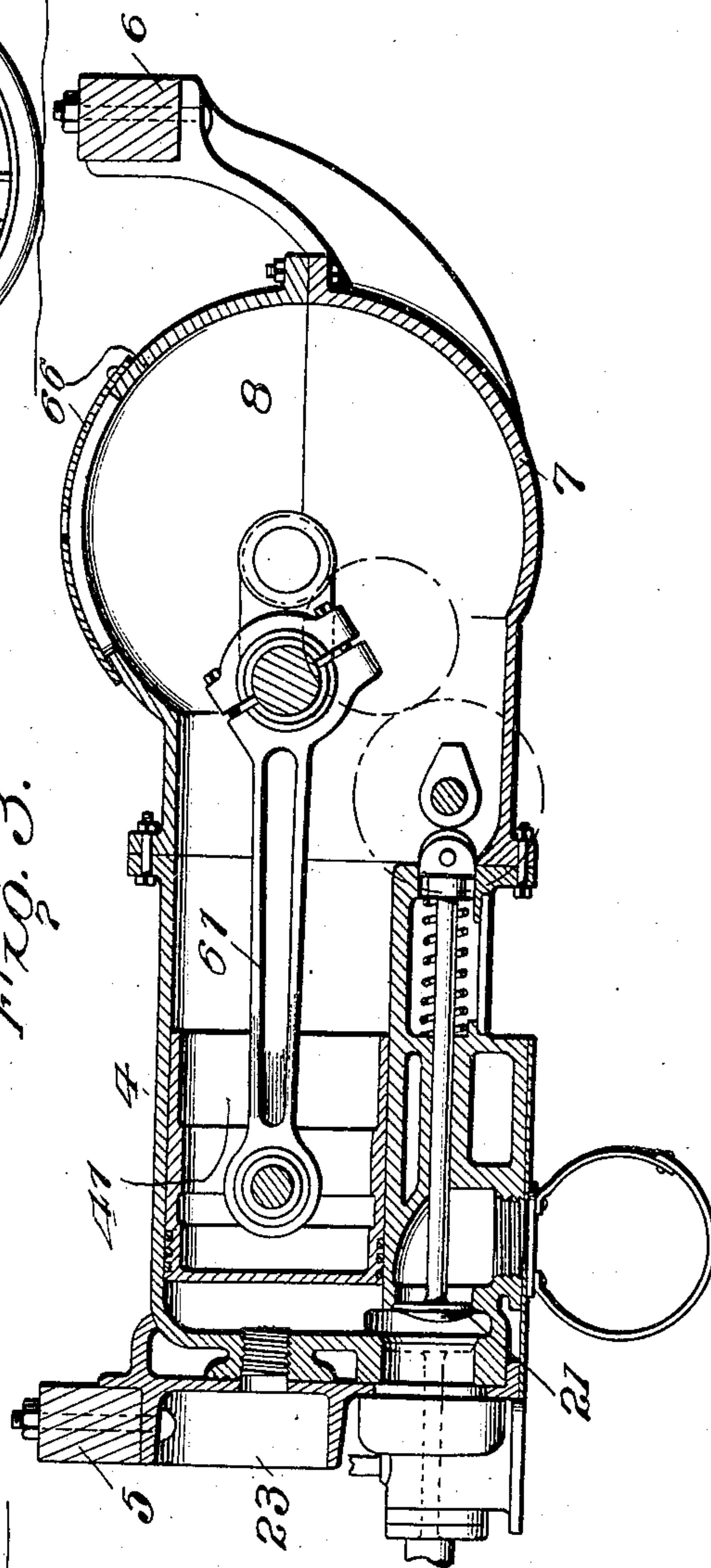


Fig. 3.



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UNITED STATES PATENT OFFICE.

ALEXANDER WINTON, OF CLEVELAND, OHIO.

MOTOR-VEHICLE.

No. 884,117.

Specification of Letters Patent.

Patented April 7, 1908.

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To all whom it may concern:

Be it known that I, ALEXANDER WINTON, a citizen of the United States, residing at Cleveland, in the county of Cuyahoga and State of Ohio, have invented new and useful Improvements in Motor-Vehicles, of which the following is a specification.

My invention relates to improvements in motor vehicles, and pertains to that class in which explosive engines are the motive power.

The improvements forming the subject of my present invention, and the objects and advantages obtained thereby, will be explained hereinafter.

In the accompanying drawings, Figure 1, is a top plan view of a motor vehicle embodying my invention, the body of the vehicle being removed, a portion of the balance wheel being shown in section to illustrate the clutch coacting therewith, and the top of the water cooler tank shown in section or broken away. Fig. 2, is a side elevation of a motor vehicle embodying my invention, the body of the vehicle being removed. Fig. 3, is a cross-sectional view of Fig. 1, taken on the dotted line 3—3, and looking in the direction indicated by arrow, the explosive inlet chamber being shown in side elevation. Fig. 4, is a longitudinal sectional view of the explosive inlet valve for one of the engine cylinders, together with its cooperating parts and the inlet passage for the explosive mixture. Fig. 5, is an end elevation of Fig. 4.

In my improved vehicle, the frame-work is made up in part of the engine cylinders, crank-case and water cooler and which form a composite part of the frame, whereby I am enabled to materially increase the strength and rigidity of the frame, and to materially cheapen the cost in construction of the vehicle thereby. Furthermore, as will hereinafter more fully appear, the working parts of the engine cannot be thrown out of line or caused to bind owing to the springing of the longitudinal sills of the frame.

Referring now to the drawings, and more particularly to Fig. 1, I show two engines which I designate as 1 and 2, and as here illustrated, each engine is composed of a series or plurality of cylinders. In the present instance, each engine consists of four cylinders. While I here show two engines, many features of my present invention can be carried out in connection with a single engine, as will appear hereinafter.

Referring to Fig. 3, in connection with Figs. 1 and 2, it will be observed that the side sill 5 of the frame is connected to the power ends of the cylinders of the engines, and that the side sill 6 is connected to the lower half 7 of the crank case 8. From this, it will be noted that the engine cylinders and the crank case form rigid cross-sills of the vehicle frame, and avoid the necessity of building up a frame in the usual manner and connecting the engine to the built up and completed frame. This construction is very strong, and prevents any binding of the cooperating parts of each engine caused by the twisting of the frame. The front ends of the side sills 5 and 6 are connected and braced by the water cooler 9, the end plates 10 of which are directly connected to the said sills.

The engine crank-shaft 11 extends longitudinal the carriage or vehicle, and by reference to Fig. 3 it will be seen that the upper portion 66 of the crank case is removable. This is very convenient in an engine constructed and arranged as here shown, because it enables the pitman 67 and piston 47 to be removed without disturbing the crank-shaft or other parts of the engine, and also enables the crank-shaft to be removed by disconnecting the pitman therefrom without disturbing any other part of the engine.

The rear end of the engine crank-shaft 11 may be connected with the front end of a driving-shaft 102 by any desired form of transmission mechanism which may be contained in a case 88, and the rear end of the shaft 102 is suitably connected with a differential gearing located in a case 101, and this latter gearing is connected with the driving wheels 100. Differential and transmission gearings are well known and understood by those skilled in the art, and need not therefore be here shown, as any desired form may be used so far as the invention herein claimed is concerned.

In this construction, the engine cylinders are placed transverse the vehicle, and the power ends of the cylinders or cylinder of the engines or engine which contain the valve mechanism are located at the side of the vehicle where they are readily accessible without removing any portion of the vehicle and the crank-shaft 11 at the other side, as shown in Fig. 3, and there are numerous other advantages in this cross-horizontal position of the engine cylinders, which will be referred to hereinafter.

As shown in Fig. 4, the explosive inlet chambers 18 are separate from and adapted to be detached from the engine cylinders, the said chambers 18 being connected with the cylinders by means of bolts or screws *a*, as indicated in Fig. 2, and these chambers 18 are also detachably connected with the explosive inlet pipe or passage-way 19 which extends in a direction cross-wise the engine cylinders and longitudinal the vehicle, and is common to and communicates with all of the said inlet explosive chambers. By this construction the said chambers 18 are readily accessible from the outside of the carriage or vehicle, and are readily removable for purposes of repair or substitution. The said chamber carries with it the inlet valve 20 and its coöperating mechanism, so that when the chamber 18 is removed, all of the explosive inlet mechanism is readily accessible. The advantages and convenience of a carriage having an engine so placed therein that the valve mechanism is so readily accessible, is considered in the art of the explosive type of vehicles, as a marked achievement, and will be quickly appreciated by those having experience in operating vehicles of this type. Furthermore, by reference to Fig. 3 it will be observed that when the inlet chamber 18 is removed, the exhaust valve 21 is also accessible.

The arrangement here shown also so locates the sparking plugs 22 that they are likewise readily accessible from the side of the vehicle, and independent of any portion of the vehicle body. This enables any one or more of the sparking plugs 22 to be readily removable and instantly accessible for the purpose of cleaning them. In order to protect the sparking plugs from dirt, dust oil or water they are inclosed within a sparking plug box or chamber 23 having a removable cover 24.

The great advantage of having an explosive engine so located in the vehicle that the valve mechanism and the sparking plugs are readily and quickly accessible from the outside of the vehicle, cannot be overestimated, for the reason that it places practically all those parts of the mechanism which experience teaches gives the operator trouble, readily and quickly accessible, and so simple that the operator can find the difficulty readily on the road and remedy it, and so simple that a skilled mechanic to get at these parts is not necessary. It will also be noted by reference to Fig. 1 that the valve mechanism and the sparking plugs are located in a plane below the side sills and body of the vehicle, owing to the fact that the engines are suspended below the side sills, as illustrated in Fig. 3.

Having thus described my invention, what I claim and desire to secure by Letters Patent, is:—

1. In a motor vehicle, the combination of a horizontally and transversely arranged engine frame, side sills longitudinally arranged and intermediately connected to opposite ends of the engine frame, a water cooler connecting and constituting a cross-beam or sill for the forward projecting ends of the side sills, and supporting driving and steering axles connected with the oppositely projecting ends of the said side sills.

2. In a motor vehicle, the combination of a transversely arranged engine located wholly at one side thereof, a longitudinally-arranged crank-shaft, driving wheels, and a driving mechanism connecting the end of the engine shaft with the said driving wheels.

3. In a motor vehicle, the combination of a plurality of explosive engines transversely arranged, the power ends of the cylinders located at one side of the vehicle, and a longitudinally arranged crank-shaft located at the opposite side of the center of the vehicle from the said cylinders.

4. In a motor vehicle, the combination of a transversely arranged explosive engine frame, the said frame composed of a power cylinder, and a crank-case, and side sills connected respectively with the power end of the cylinder and the outer end of the crank case.

5. In a motor vehicle, the combination of a transversely arranged explosive engine frame, the frame consisting of a power cylinder and a crank case, the upper side of the crank case formed detachable and removable, and parallel longitudinally extending side sills, one of said sills connected to the power end of the cylinder and the other sill connected to the lower portion of the crank case.

6. In a motor vehicle, the combination of a transversely arranged explosive engine having its power end located at one side of the vehicle, and practically below the body line of the vehicle, the power end of the cylinder provided with an inlet valve, and a removable casing for the inlet valve carried thereby and removable from the outside of the vehicle and located at a point practically below the body line of the vehicle.

7. In a motor vehicle, the combination of a transversely arranged explosive engine frame, the power end of the cylinder located at one side of the vehicle, a removable inlet valve casing and an ignition member carried by the power end of the cylinder and located at the outer side of the vehicle, a side sill connected to the power end of the cylinder at a point above the said inlet valve casing and ignition member, and a side sill connected to the opposite and crank-shaft end of the engine frame, whereby the ignition member and the valve casing are readily accessible from the outside of the vehicle.

8. In a motor vehicle, the combination of a transversely arranged explosive engine, the

power end of the cylinder located at one side of the vehicle, an inlet valve casing carried by the power end of the cylinder located at and accessible from the side of the vehicle,
5 an exhaust valve arranged in a line with the inlet valve casing, the inlet valve casing with the inlet valve being removable, whereby the exhaust is also accessible from the side of the vehicle.

10 9. In a motor vehicle, the combination of a plurality of transversely arranged explosive engine cylinders having their explosion

ends located at one side of the vehicle, the explosion ends of the cylinders having outwardly projecting ignition members, and a 15 box-like chamber inclosing said projecting ignition members.

In testimony whereof I have hereunto set my hand in the presence of two subscribing witnesses.

ALEXANDER WINTON.

Witnesses:

GEO. H. BROWN,
F. W. FOX.