No. 792,704. PATENTED JUNE 20. 1905.

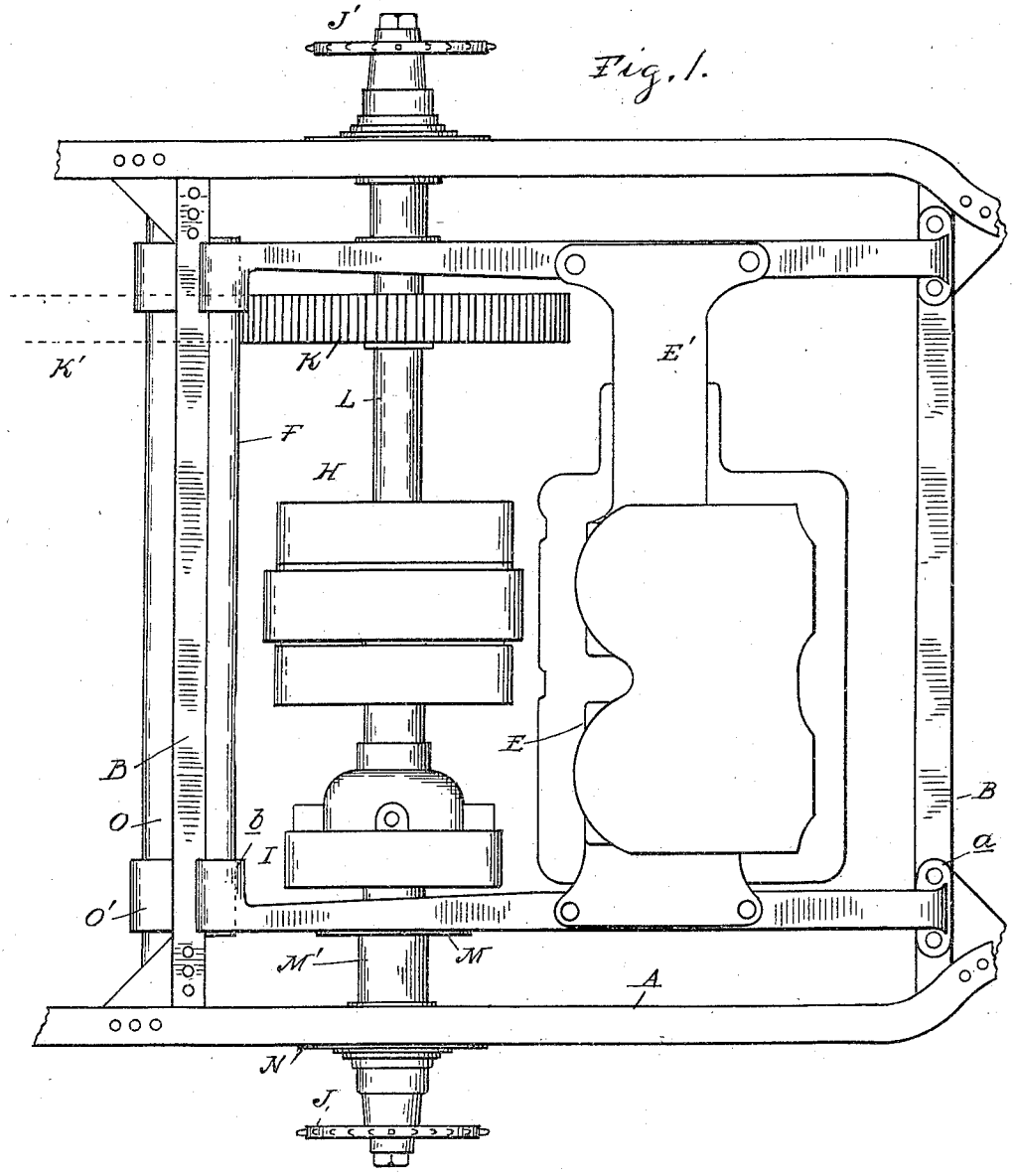
N. T. HARRINGTON.

MOTOR VEHICLE.

APPLICATION FILED OCT. 29, 1904.

3 SHEETS—SHEET 1.

Fig. 1.



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3 SHEETS—SHEET 2.

Fig. 3.

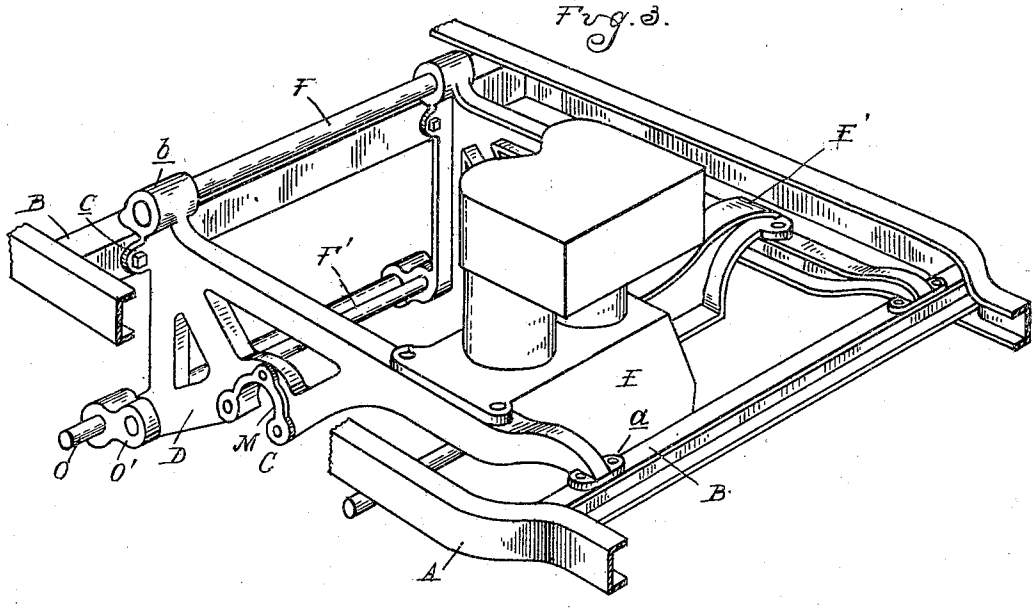
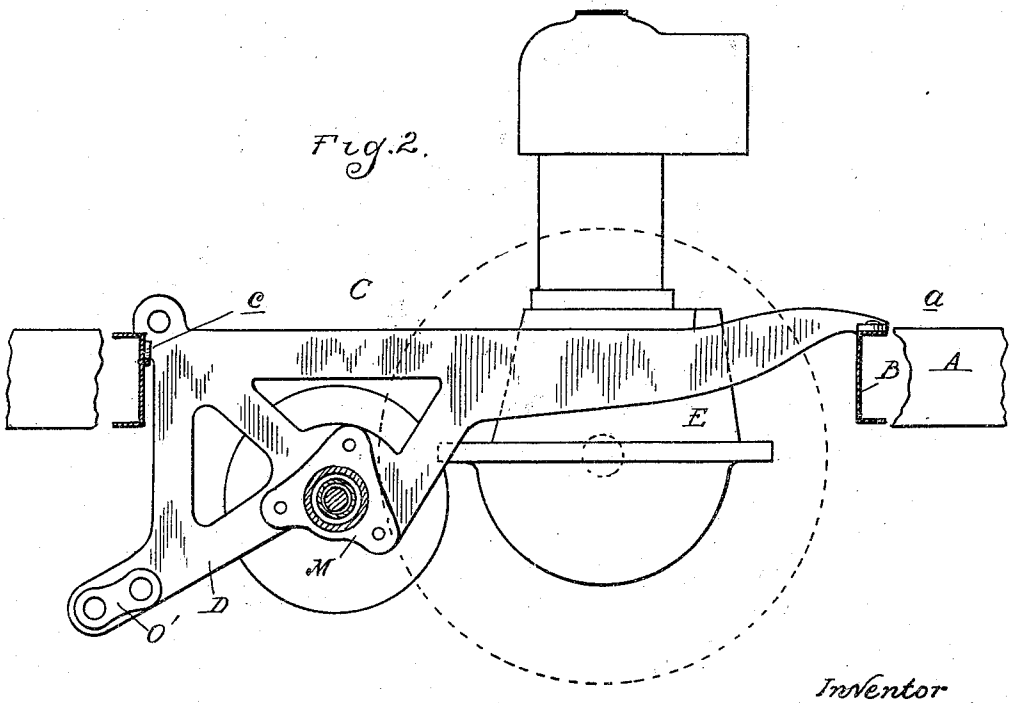


Fig. 2.



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3 SHEETS—SHEET 3.

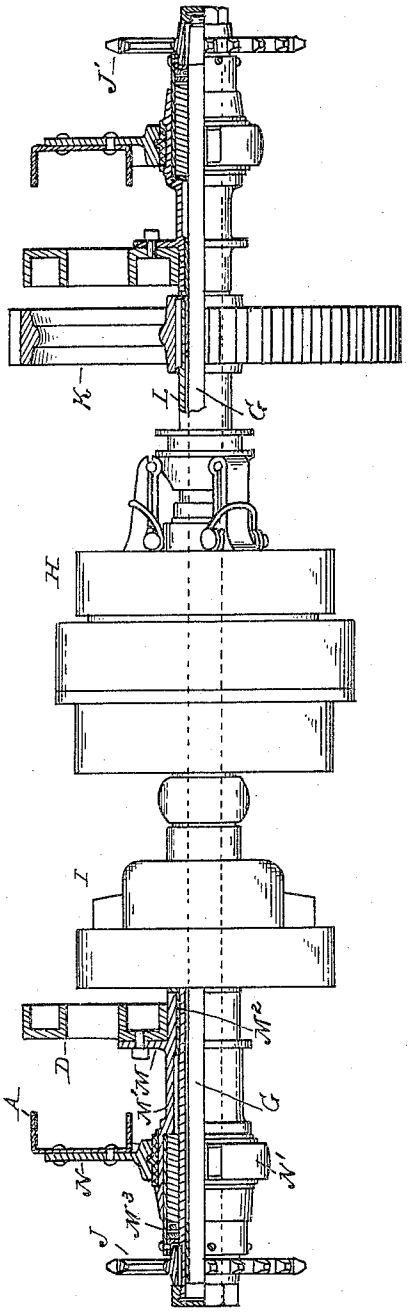


Fig. 4.

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No. 792,704. Patented June 20, 1905.

UNITED STATES PATENT OFFICE.

NORMAN T. HARRINGTON, OF DETROIT, MICHIGAN, ASSIGNOR TO OLDS MOTOR WORKS, OF DETROIT, MICHIGAN, A CORPORATION OF MICHIGAN.

MOTOR-VEHICLE.

SPECIFICATION forming part of Letters Patent No. 792,704, dated June 20, 1905.

Application filed October 29, 1904. Serial No. 230,599.

To all whom it may concern:

Be it known that I, NORMAN T. HARRINGTON, a citizen of the United States, residing at Detroit, in the county of Wayne and State of Michigan, have invented certain new and useful Improvements in Motor-Vehicles, of which the following is a specification, reference being had therein to the accompanying drawings.

The invention relates to motor-vehicles, and has particular reference to the construction of the frame and manner of mounting the motor and transmission mechanism thereon.

The invention consists in the novel construction of said parts and, further, in the peculiar construction, arrangement, and combination of parts, as hereinafter set forth.

In the drawings, Figure 1 is a plan view of a portion of the vehicle-frame and mechanism mounted thereon. Fig. 2 is a side elevation thereof. Fig. 3 is a perspective view. Fig. 4 is a cross-section in the vertical plane of the transmission-shaft.

It is the object of the invention to obtain a construction of supporting-frame for the motor and transmission mechanism which is capable of being detached and removed from the main vehicle-frame without dismounting the mechanism supported thereon.

It is a further object to obtain a compact arrangement of the mechanism and a construction in which all of the operating parts are accessible and are closely associated with the motor, being removable therewith when the supporting-frame is detached.

The main vehicle-frame comprises side sills A, cross-connected to each other by bars B, said sills and bars being preferably formed of channel-bars. Between the sills A and the central pair of cross-bars B is a space in which is located a detachable frame C, which supports the motor and transmission mechanism. This frame C preferably comprises a pair of side frames or brackets D, which extend longitudinally of the vehicle adjacent to the sills A and are supported at opposite ends upon the cross-bars B. Between the forward portions of these frames is arranged the motor, which, as shown, is a double-cylinder explosion-engine, the crank-case E of which is supported at one end upon one of the frames D and has an extension E′, which is attached to the opposite frame. The attachment is formed by rigidly bolting the casing to the frames D, so that it forms a cross-strut, strengthening said frame and rendering it more rigid. The frame C is also cross-connected by suitable cross-bars at its rear end, such as F and F′.

In rear of the motor E is arranged a transmission-shaft G, extending across the frame C parallel to the motor-shaft. Upon this transmission-shaft G is mounted a variable-speed transmission H of any suitable construction, being preferably of the planetary type; also a compensating gearing I and two supported driven wheels J and J′ at opposite ends of the shaft, said wheels being independently but equally driven through the medium of said compensating gear and variable-speed gearing. The drive-wheel K is also mounted upon the shaft, being directly connected to the motor-shaft, as by a sprocket-chain K′, and being fixedly secured to the tubular shaft L, which surrounds the shaft G and is connected to the drive-wheel of the transmission H.

The shaft G is detachably mounted upon the frame C through the medium of hangers M, bolted to the side frames D, and is also preferably connected with the side sills A of the main vehicle-frame by means of hangers N. The hangers M have formed, preferably, integral therewith the sleeves M′, surrounding the shaft G and extending outward into engagement with the hangers N, which latter are provided with detachable caps N′. These sleeves M′ are preferably provided with bushings M^2 and M^3 at their opposite ends, which form supporting-bearings for the shaft.

With the construction above described the shaft G, together with the various devices mounted thereon, is removable with the frame C from the main vehicle-frame by merely detaching the caps N′, which permit of disengagement from the hangers N. At the same time the shaft G may, if desired, be detached without removing the frame C by merely disconnecting the hangers M from the frames D, which will permit of dropping down the shaft

together with the gearings mounted thereon. In order that the shaft may be rigidly connected to the frame C, the side frames D are preferably formed with downwardly-opening slots, into which the ends of the sleeves M′ are engaged, the hangers M being flanged to bolt to the frames D upon opposite sides of these slotted bearings.

The variable-speed-transmission gearing H is controlled through the medium of the shaft O, which slidingly engages with bearings O′ at the rear end of the frame D. Suitable connections (not shown) are provided between this shaft O and the parts of the transmission H, so that by the longitudinal movement of the shaft into different positions of adjustment the transmission will be correspondingly adjusted for its different speeds.

The frame C is preferably secured to the main frame by bearings resting upon the cross-bars B and, as shown, the bearings *a* at the forward end of the frame are bolted to the top of the bar B, while the bearings *b* at the rear end merely rest upon the cross-bar and are secured thereto by ears *c*, bolted to the vertical web portion of the bar B. Thus by merely removing these bolts the frame C can be readily detached from the vehicle.

What I claim as my invention is—

1. The combination with the body-supporting frame and motor, of a frame detachably supported upon said body-supporting frame and having said motor mounted thereon, and a transmission-shaft provided with a variable-speed-transmission gearing and a compensating gearing also mounted upon said detachable frame.

2. The combination with the body-supporting frame, the motor and variable-speed-transmission gearing, of a frame detachably supported on said body-supporting frame, upon which said motor and transmission-gearing are mounted and a controlling mechanism for said variable-speed gearing also mounted upon said detachable frame and compensating gearing also mounted upon said detachable frame.

3. The combination with a body-supporting frame, of a frame detachably supported thereon, and a motor mounted upon said detachable frame, the motor-casing being extended transversely thereto and forming a rigid cross-strut therefor longitudinally of the motor-shaft.

4. The combination with the body-supporting frame, comprising longitudinal sills and separated cross-bars, of a detachable frame consisting of side frames extending longitudinally of said main frame and supported at opposite ends upon said cross-bars and a motor having its casing extending across between and rigidly attached to said side frames and forming a rigid cross-strut therefor.

5. The combination with the body-supporting frame, comprising side sills and cross-bars, of a detachable frame consisting of side frames extending between and supported upon the top of said cross-bars, a motor extending between and supported upon and having its casing extended to form a rigid cross-strut for said side frames, and a transmission-shaft mounted in depending portions of said side frames.

6. The combination with the body-supporting frame, comprising side sills and cross-bars, of a detachable frame consisting of side frames extending longitudinally between and supported upon said cross-bars, a motor extending between and supported upon and forming a rigid cross-strut for said side frames and a transmission-gearing and controlling mechanism, therefor, mounted in depending portions of said side frames.

7. The combination with a frame and a motor supported thereon, of a transmission-shaft mounted in depending portions of said frame and variable-speed gearing, the compensating gearing and a pair of independent driven wheels mounted upon said shaft.

8. The combination with a detachable frame, of a motor mounted thereon, a variable-speed gearing, a compensating gearing, and a pair of independent driven wheels, a transmission-shaft on which said gearings and transmission-wheels are all mounted, said shaft being supported by and downwardly removable from said frame.

9. The combination with a detachable frame, of a motor-shaft mounted thereon, a variable-speed-transmission gearing, a compensating gearing and a pair of independent driven wheels, a common shaft upon which all of said gearings and driven wheels are mounted and hangers in which said shaft is journaled, detachably connected to said frame.

10. The combination with a supporting-frame, of a motor-supporting frame detachably mounted thereon, a variable-speed-transmission gearing, a compensating gearing and a pair of driven wheels, a common shaft upon which said gearings and wheels are mounted and bearings in which said shaft is journaled, detachably connected to both said motor-supporting frame and said body-supporting frame.

11. The combination with a detachable frame, a motor supported thereon, a variable-speed-transmission gearing, a compensating gearing, a shaft upon which said gearings are mounted, independent driven wheels at opposite ends of said shaft, connected through the medium of said gearings with said motor and bearings intermediate said transmission-wheels and said gearings, depending from said frame.

In testimony whereof I affix my signature in presence of two witnesses.

NORMAN T. HARRINGTON.

Witnesses:

EDWARD D. AULT,

H. C. SMITH.