APPENDIX D

No. 714,878. Patented Dec. 2, 1902.

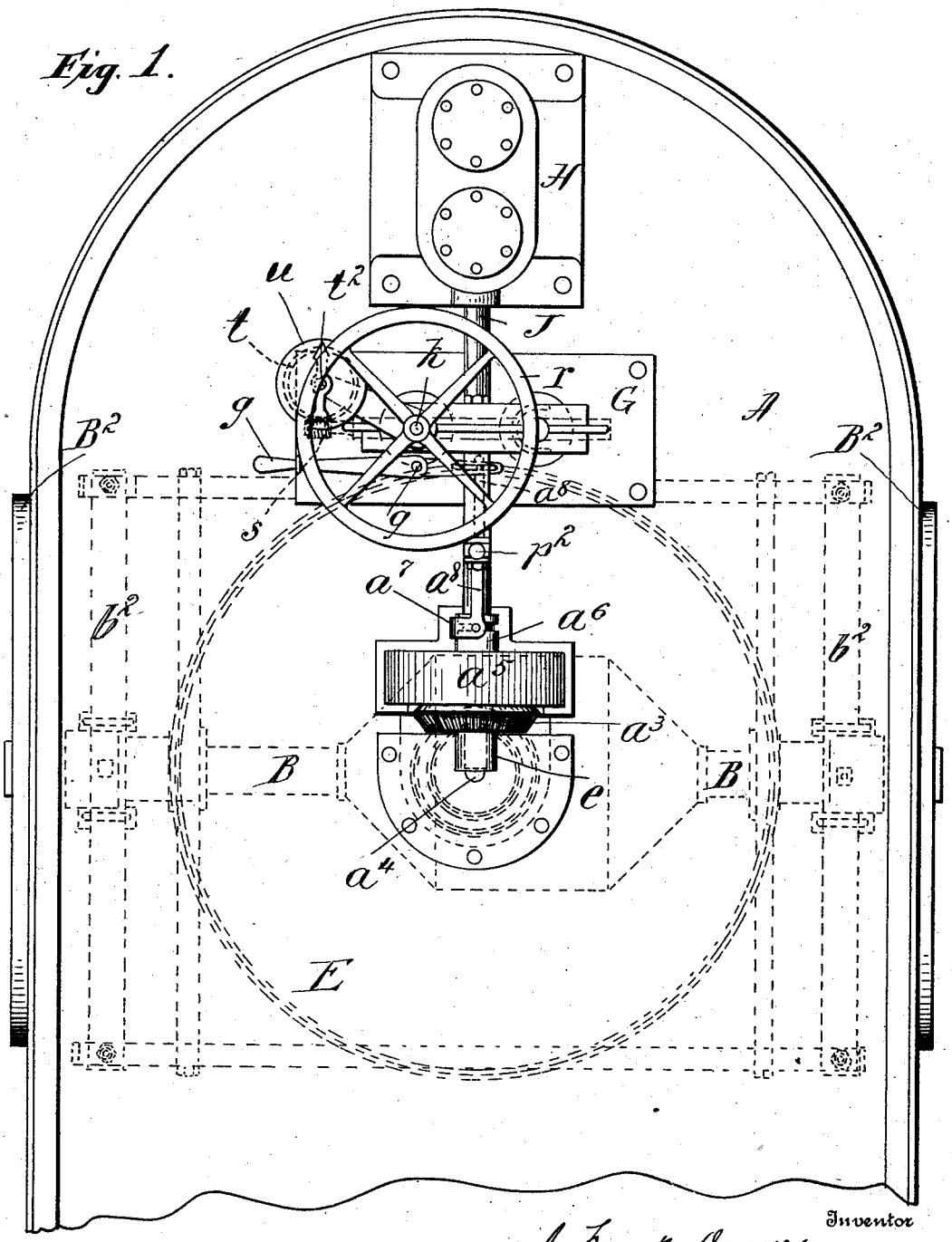
J. F. DURYEA.

STEERING MECHANISM FOR VEHICLES.

(Application filed May 10, 1900.)

(No Model.) 3 Sheets—Sheet 1.

Fig. 1.



Witnesses
Geo. E. Frech.
A. W. Allen

Inventor
J. Frank Duryea,
by Wm. J. Allen
Attorney

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

No. 714,878. Patented Dec. 2, 1902.

J. F. DURYEA.

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(No Model.) 3 Sheets—Sheet 2.

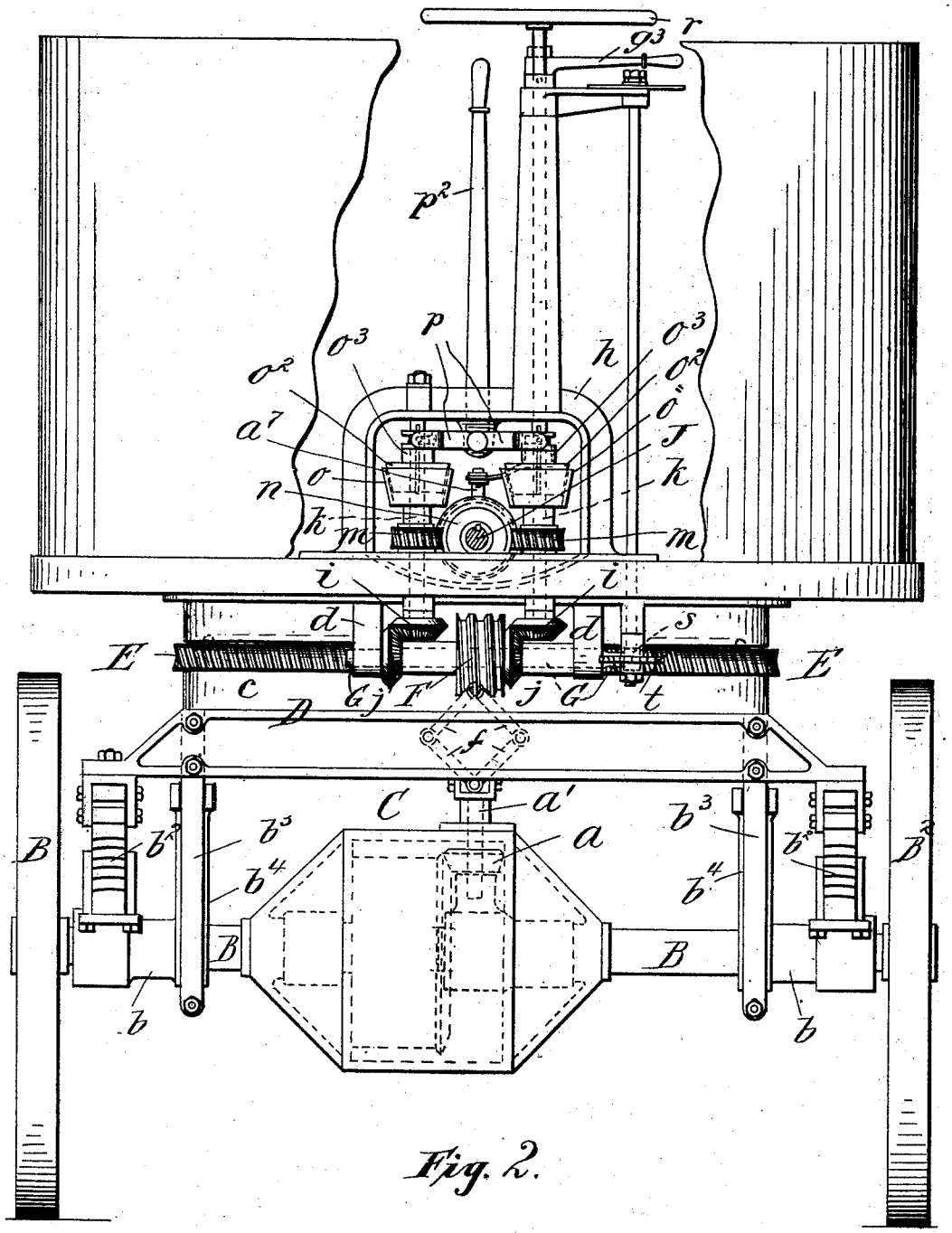

Fig. 2.

Witnesses
Geo. E. Frech.
A. W. Allen

Inventor
J. Frank Duryea,
by Wm. F. Bellows,
Attorney

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J. F. DURYEA.

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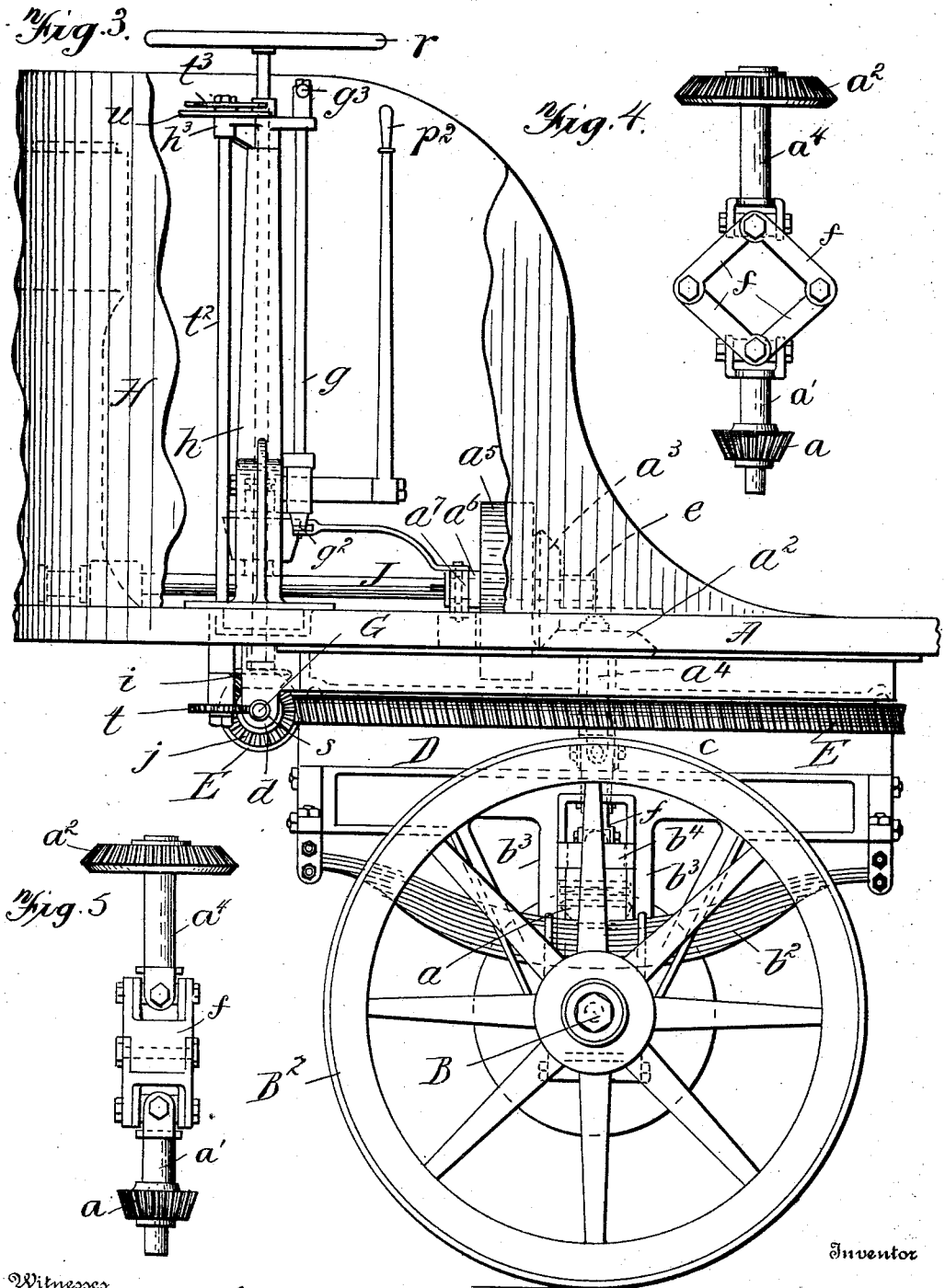

Witnesses
Geo. E. Fitch.
A. W. Allen

Inventor
J. Frank Duryea
by Wm. J. Allen Attorney

UNITED STATES PATENT OFFICE.

JAMES FRANK DURYEA, OF SPRINGFIELD, MASSACHUSETTS.

STEERING MECHANISM FOR VEHICLES.

SPECIFICATION forming part of Letters Patent No. 714,878, dated December 2, 1902.

Application filed May 10, 1900. Serial No. 16,241. (No model.)

To all whom it may concern:

Be it known that I, JAMES FRANK DURYEA, a citizen of the United States of America, and a resident of Springfield, in the county of Hampden and State of Massachusetts, have invented certain new and useful Improvements in Steering Mechanism for Vehicles, of which the following is a full, clear, and exact description.

This invention relates to improvements in motor-vehicles or automobiles, and more particularly to the class of such vehicles wherein the front wheels are both the driven and the steering wheels; and the invention more especially pertains to the mechanisms and controlling appliances whereby the motor may be made available for the propulsion of the vehicle through the front steering-wheels, whereby the motor may be employed to swing the steering-wheels to steer, whereby the motor may be simultaneously caused to both drive and steer, and whereby the motor may only drive the steering-wheels, the steering being operated manually.

The improved mechanism is especially useful on large and heavy motor wagons or trucks in which, especially at the time of starting the same, considerable power is necessary to change the relative position of the wheels under the body.

Another object of the invention is to insure that in the operation of the steering mechanism when the connections for changing the positions of the wheels toward one side are in engagement the connections for reversely changing the positions of the wheels must be necessarily out of engagement.

Another object of the invention is to provide an indicator observable at the place occupied by the rider or person in control of the motor-wagon for enabling him to know whether the steering-wheels range straight with the length of the vehicle or are turned to either side, this being especially advantageous at the time of starting the vehicle, which may have been left with the front wheels considerably deflected toward either side of the wagon.

The invention consists in combinations and arrangements of mechanisms and appliances and in constructions and combinations of parts, all substantially as hereinafter fully described, and set forth in the claims.

Reference is to be had to the accompanying drawings, in which the views show the forward portion of the motor-vehicle having an engine or motor mounted thereon and showing the forward driving and steering wheels and the means for controlling the driving and steering, and in said drawings—

Figure 1 is a plan view. Fig. 2 is a front view with parts broken away and the engine-shaft being seen in cross-section as taken next to the rear of the engine. Fig. 3 is a side elevation. Figs. 4 and 5 are views in detail at right angles to each other of articulated driving connections hereinafter particularly referred to.

In the drawings, A represents the forward portion of the body of the motor-wagon or automobile vehicle, beneath which is the divided axle B for the forward wheels B^2 B^2, which are in this mechanism both the driving and the steering wheels, and, as common in the divided axles for the driving-wheels of motor-vehicles, the two adjacent parts of the axle are equipped with the compensating gearing indicated within the casing C, and comprised in which compensating gearing is the bevel gear-wheel A, to which continuous rotary motion may be imparted through driving connections from the engine thereto to secure the propulsion of the vehicle.

Above the divided axle is a truck-frame D, there being interposed between the truck-frame and the journals b b for the axles the spring b^2, and the truck-frame has the depending pedestals b^3, in which guide-blocks or parts b^4 of the axle-journals have relatively thereto a vertical play. The platform-like upper part c of the truck-frame supports thereon the large worm-wheel E, meshing with which is the worm F, the same being carried as a fixed part on a shaft G, which is horizontally and transversely mounted in the hangers or brackets d d, which are secured to and depend below the bottom of the wagon-body A.

H indicates the engine or motor, supported at extreme forward part of the wagon, the main or driving shaft J of the engine extending longitudinally along about the central line

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