

No. 716,917.

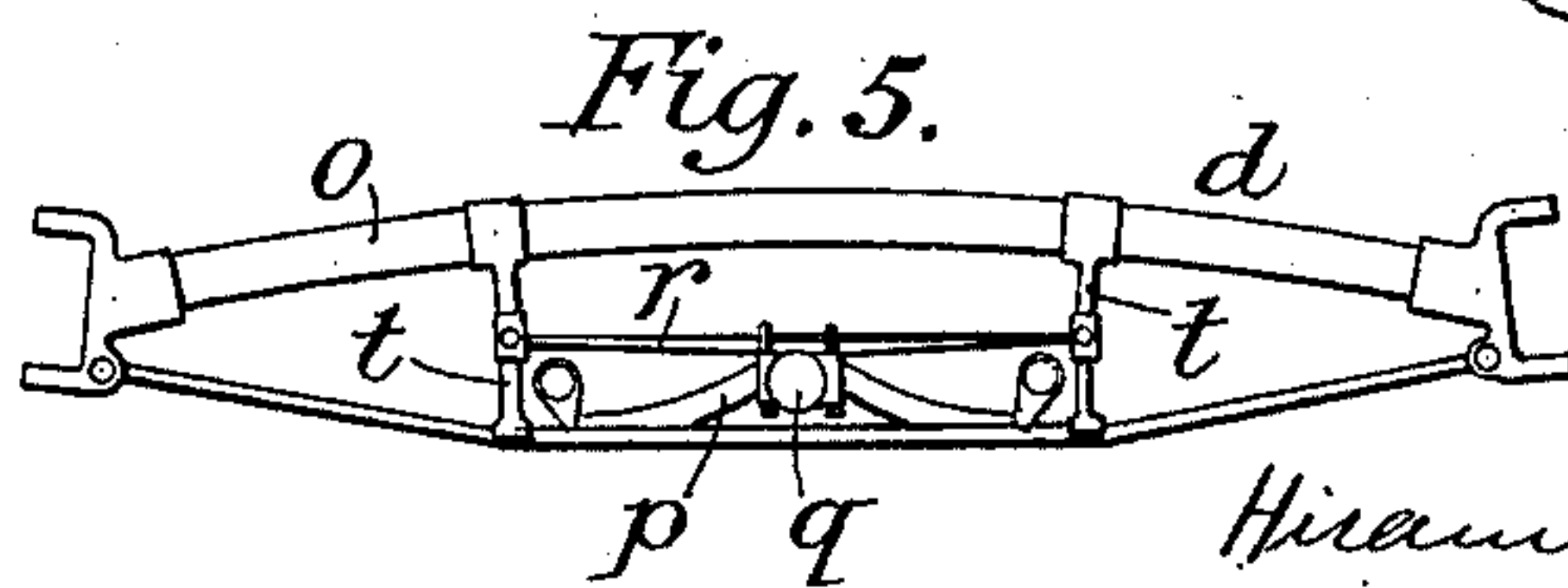
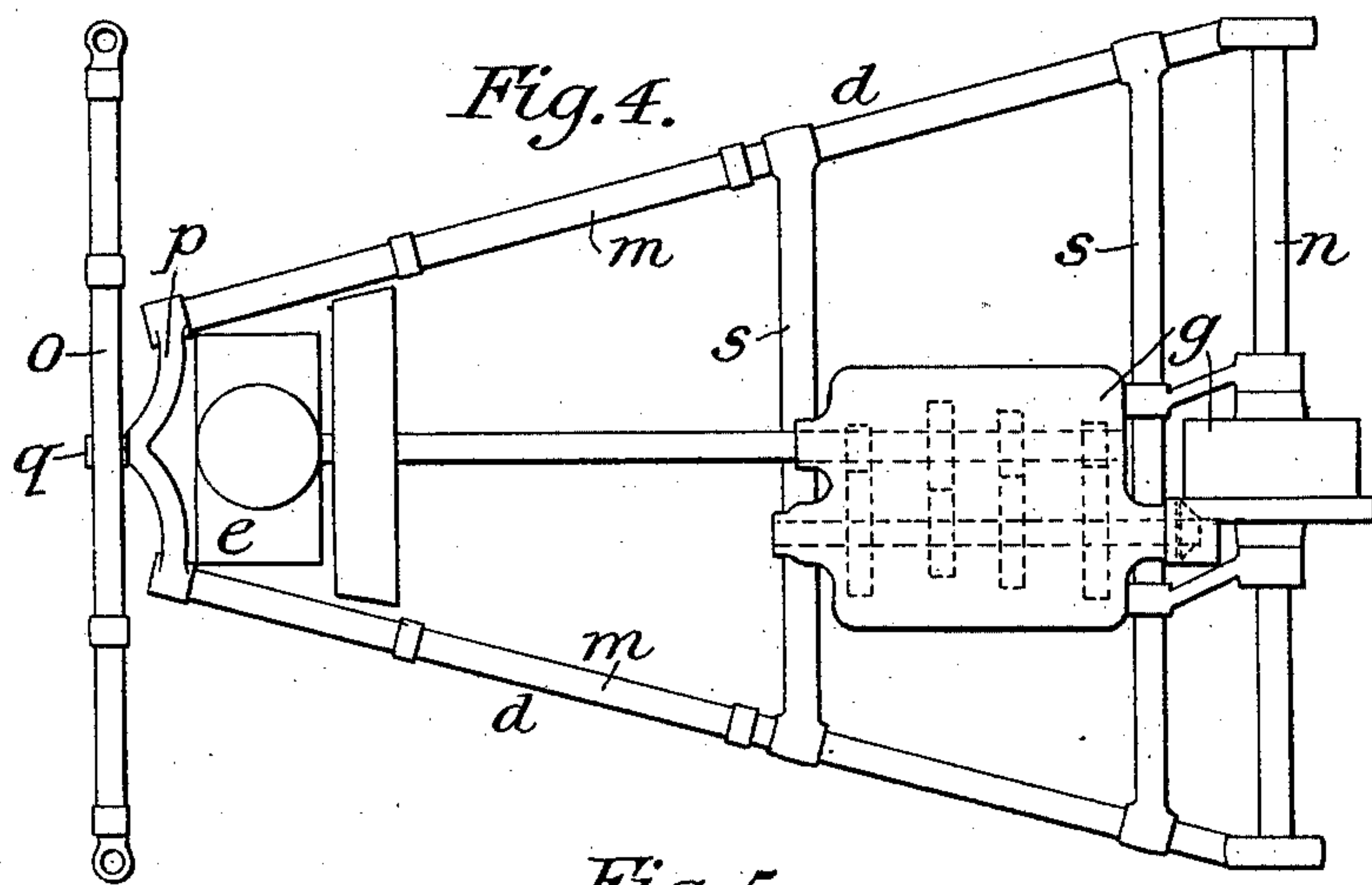
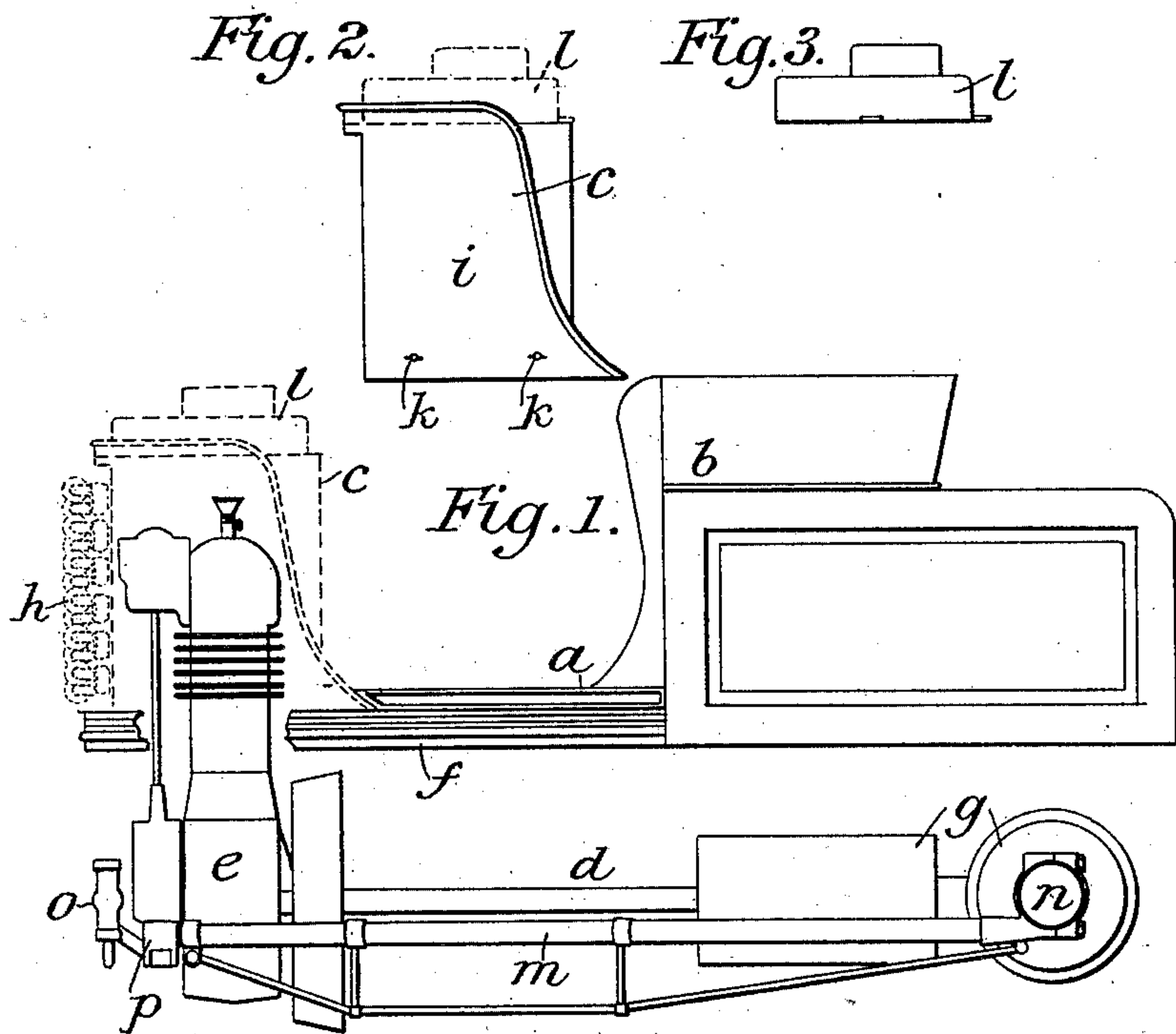
Patented Dec. 30, 1902.

H. P. MAXIM.  
MOTOR VEHICLE.

(Application filed Oct. 16, 1900. Renewed June 3, 1902.)

(No Model.)

2 Sheets—Sheet 1.



Witnesses:

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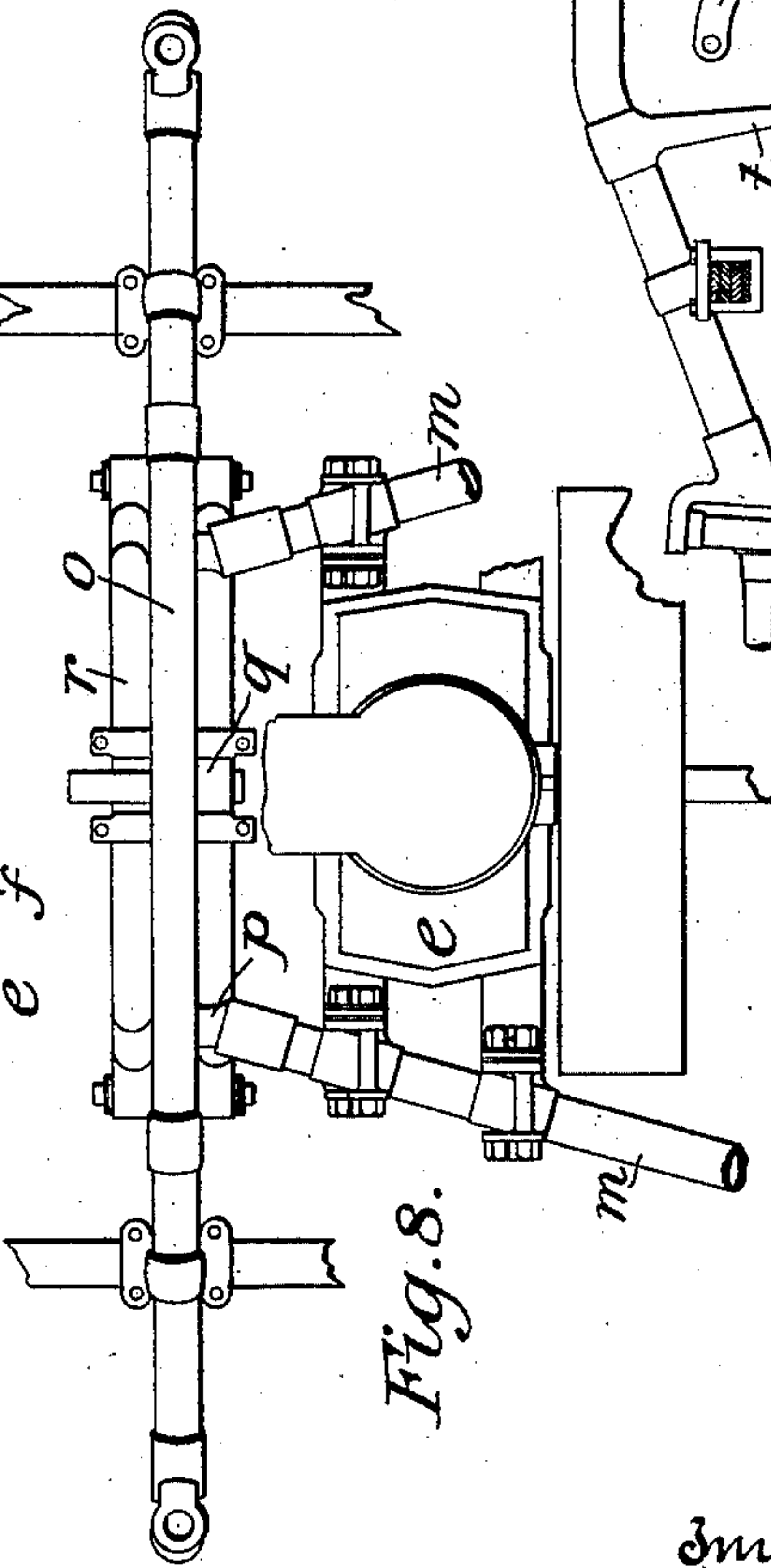
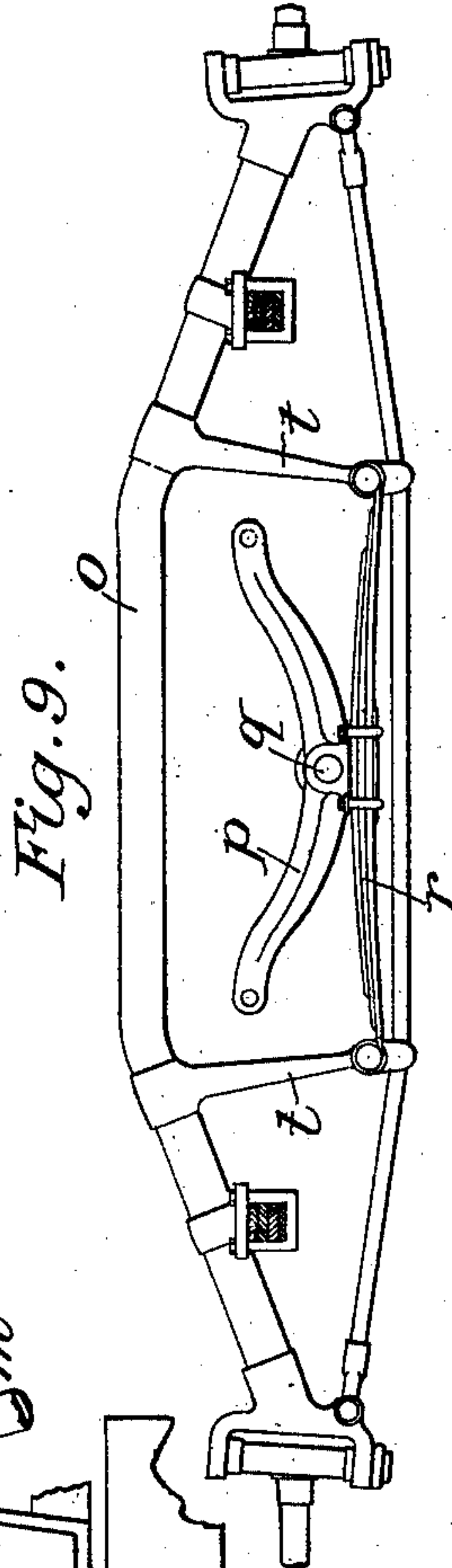
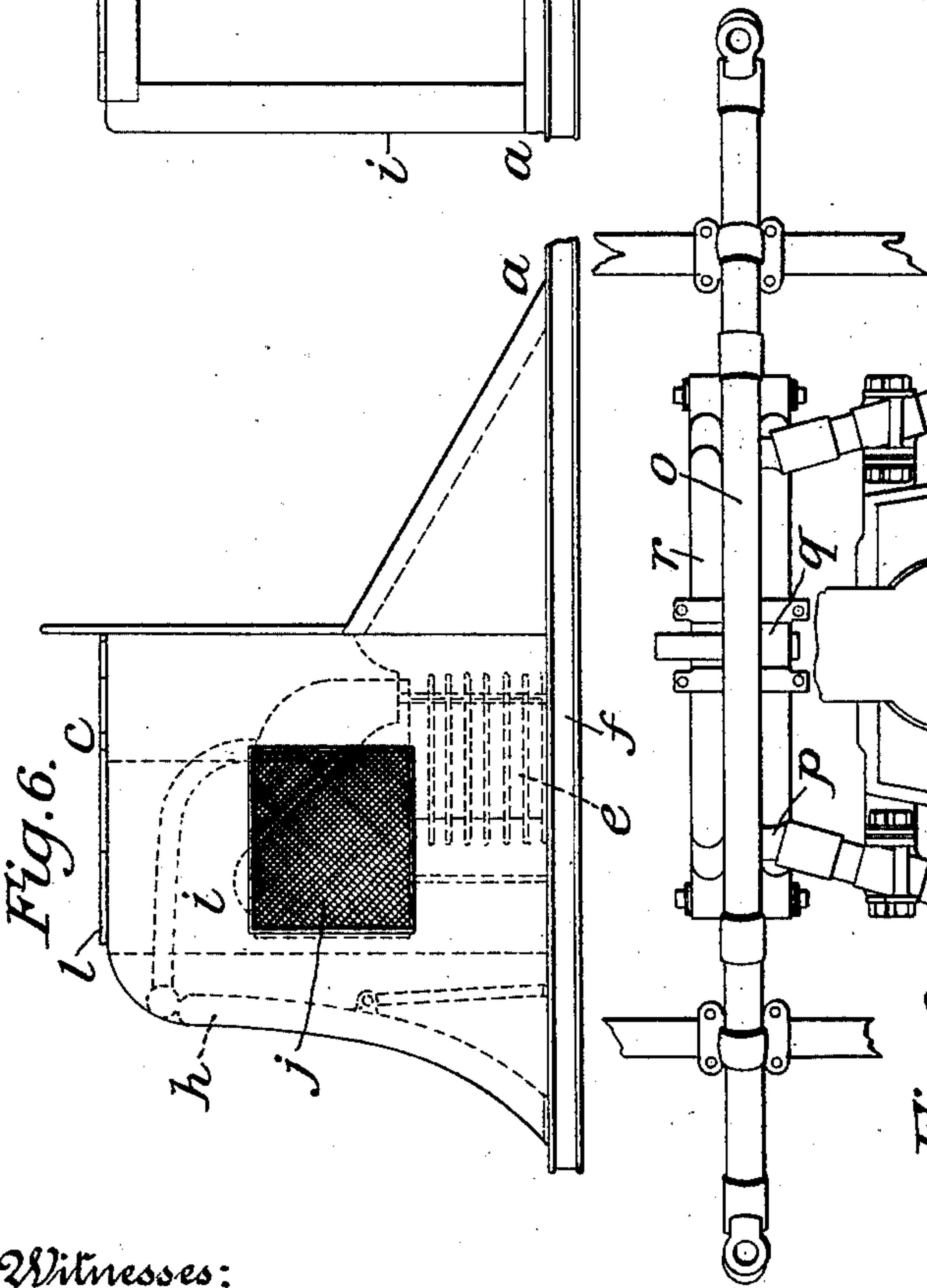
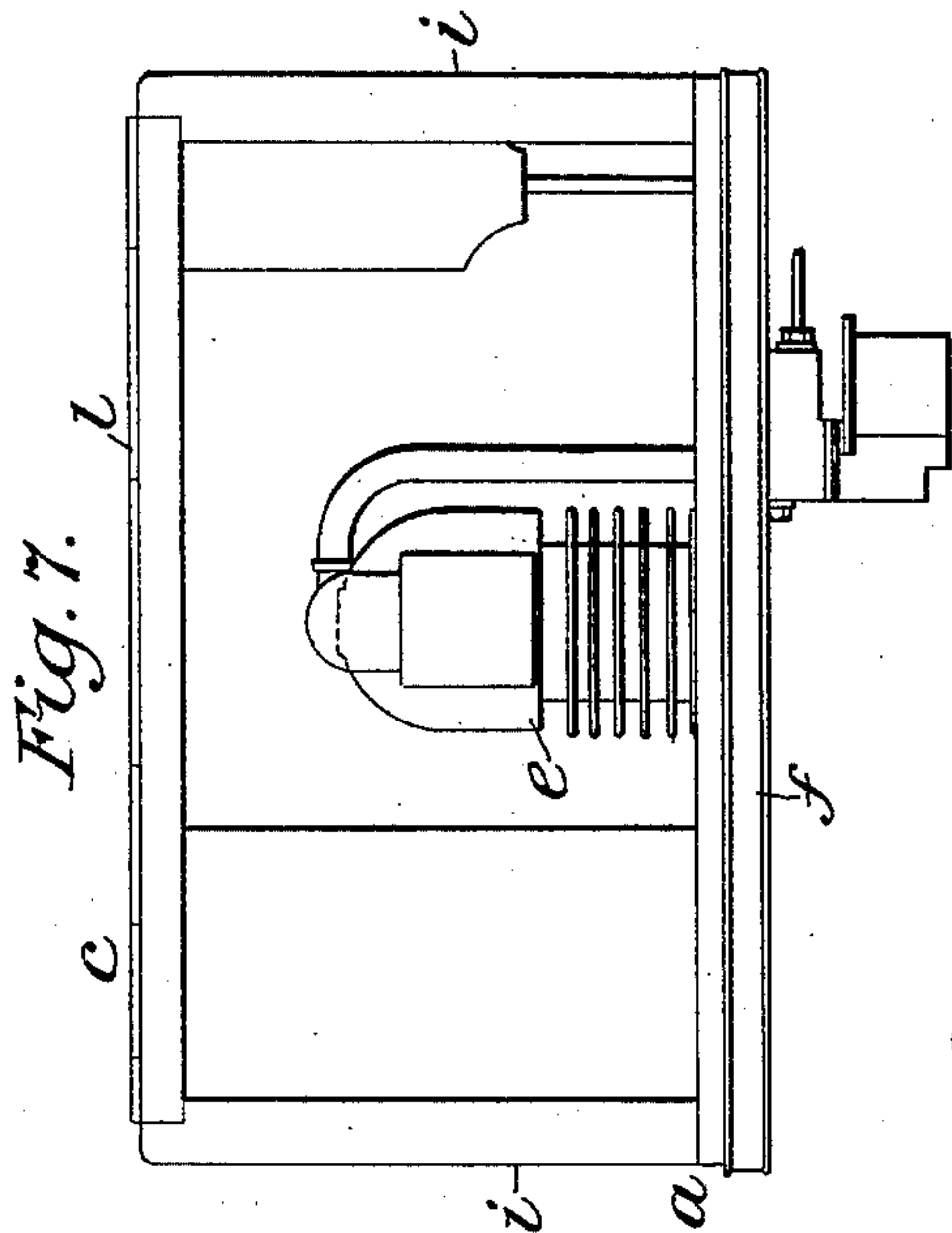
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H. P. MAXIM.  
MOTOR VEHICLE.

(Application filed Oct. 16, 1900. Renewed June 8, 1902.)

(No Model.)

2 Sheets—Sheet 2.



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# UNITED STATES PATENT OFFICE.

HIRAM PERCY MAXIM, OF HARTFORD, CONNECTICUT, ASSIGNOR, BY MESNE ASSIGNMENTS, TO MORTON TRUST COMPANY, TRUSTEE, A CORPORATION OF NEW YORK.

## MOTOR-VEHICLE.

SPECIFICATION forming part of Letters Patent No. 716,917, dated December 30, 1902.

Application filed October 16, 1900. Renewed June 3, 1902. Serial No. 110,061. (No model.)

*To all whom it may concern:*

Be it known that I, HIRAM PERCY MAXIM, a citizen of the United States, residing in Hartford, in the State of Connecticut, have invented certain new and useful Improvements in Motor-Vehicles, of which the following is a specification.

The invention relates to improvements in the construction of the bodies of motor-driven vehicles, particularly the fore part or dash of the vehicle-body, and of the running-gear frame which supports the body and which also supports the motor for propelling the vehicle.

The objects of the invention are to conceal the motor from view and at the same time arrange the parts thereof so that they will be readily accessible for inspection and repairs, also to mount the motor upon the frame so that little or no vibration will be transmitted to the body portion and so that the alinement of the motor in relation to the other parts of the mechanism will always be kept true.

In the accompanying drawings, Figure 1 is a side elevation of a vehicle-body, its running-gear, and motor, the floor of the vehicle-body being broken away in part and the casing or fore part being shown with dotted lines. Fig. 2 is a side view of the casing which forms the dash of the vehicle, a removable cover being shown in dotted lines. Fig. 3 is a detail view showing a side elevation of one of the removable covers of the casing. Fig. 4 is a plan view of the running-gear frame. Fig. 5 is an elevation of the front axle and its connections with the running-gear frame. Fig. 6 represents a side elevation of another form of the casing or dash. Fig. 7 is a front view of the casing, representing the same with the radiating-coil removed. Fig. 8 is a plan view of the front portion of the running-gear frame, showing the motor attached thereto. Fig. 9 is an elevation of the front axle represented in Fig. 8, showing the connections of the running-gear frame thereto.

The body *a* of the vehicle comprises a seat portion *b* and a casing or fore part *c*, that forms the dash of the vehicle. The body is suitably mounted in any well-known man-

ner upon the running-gear frame *d*, which also preferably supports the motor *e*, that extends through the floor *f* of the vehicle into the casing. Suitable mechanism *g* for actuating the driving-wheels of the vehicle is operatively connected with the motor, which is usually provided with a radiating-coil *h*, that is supported by the floor of the vehicle at the extreme front thereof and forms the outer wall of the casing. The coil may be perpendicular, or it may be inclined, as indicated in Fig. 6, to form a shield or cut-wind. Sufficient space is left between the turns of the radiating-coil to allow free circulation of air about the motor. The sides *i* of the casing preferably extend slightly beyond the ends of the coil, so that the coil is invisible from the sides of the vehicle, and may be provided with lattice-openings *j* to increase the circulation of air about the motor. The casing completely incloses that portion of the motor projecting above the floor of the vehicle and is detachably secured to the vehicle-body by means of suitable clamps or screws *k*, so that the same can be readily removed bodily from the vehicle. Preferably the casing is also provided with openings in its top having removable covers *l* in order that access may be had to the upper portion of the motor or other mechanism without removing the entire casing.

It will be understood by reference to Fig. 6 that the removable casing shown in that figure consists of sides, top, and open front and is separated by lifting upward or sliding forward from the rear portion, which remains undisturbed on the floor or frame of the vehicle.

The main portion of the running-gear frame that supports the engine and vehicle-body is substantially triangular in form and comprises side members *m*, that are secured to the rear axle *n* and converge slightly toward the front axle *o*, where they are secured to a yoke *p*. Said yoke is preferably secured by a suitable pivotal connection *q* to the top or bottom of a spring *r*, arranged centrally of the front axle, so as to bring the pivot in a vertical plane passing through the center of



the axle. Both the axles and the side members may be trussed for greater strength, and the side members are preferably connected by suitable transverse bars *s*. As a convenient means of construction the spring may be secured to the struts *t* of the front axle.

The use of this casing or dash not only presents a neat appearance, but it permits the motor to be located in the front part of the vehicle and mostly above the floor thereof. The casing not only performs the usual functions of the dash, but protects the occupants from the oil, dirt, and heat of the motor, and at the same time provides a housing for the more delicate parts thereof. Since the casing is detachable, access may readily be had to the motor without requiring the separation of any tight connections or requiring the driver to crawl under the vehicle or to lift same. The carbureters, igniters, and similar mechanism incidental to the use of an explosive-motor may also be placed in the casing, together with tanks for water and oil, and access to the latter may be had through the openings in the top of the casing that are provided with removable covers. The radiating-coil is placed in front of the vehicle, where the fresh air will strike directly upon it, thus producing the best possible effect. Ample space is left between the turns of the radiating-coil to permit the air to enter, which circulates about the motor and passes out under the vehicle. Since the forward portion of the frame is pivoted to springs upon the axle instead of being supported directly upon the axle, the wheels can adapt themselves to the inequalities of the roadway; also, sufficient flexibility is imparted to the frame to prevent shock and to permit the motor to be mounted in close proximity to the body of the vehicle without imparting its vibrations thereto. The stability of the vehicle is insured by arranging the pivotal connection between the spring upon the front axle and the intermediate members of the running-gear frame below the plane passing the centers of the wheels.

I claim as my invention—

1. In a motor-vehicle, a vehicle-body, a motor for propelling same, and a bodily-removable dash or casing inclosing a portion of the motor, substantially as described.

2. In a motor-vehicle, a running-gear frame, a vehicle-body, a motor supported upon said frame and projecting above the lower line of the body, and a removable casing forming the dash of the vehicle-body and inclosing the projecting portion of the motor, substantially as described.

3. In a motor-vehicle, a vehicle-body, a motor for propelling the vehicle, and a bodily-removable dash or casing inclosing a portion of the motor and provided with openings, to permit access to the interior of the casing, substantially as described.

4. In a motor-vehicle, a running-gear frame, a vehicle-body, a motor supported

upon said frame and projecting above the lower line of the body, and a removable casing forming the dash of the vehicle-body, and inclosing the projecting portion of the motor and provided with openings, to permit access to the interior of said casing, substantially as described.

5. In a motor-vehicle, a vehicle-body, a motor for propelling the vehicle, a bodily-removable dash or casing inclosing a portion of the motor and provided with an opening, and a radiating-coil connected with the motor and arranged in said opening, substantially as described.

6. In a motor-vehicle, a vehicle-body provided with a casing forming the dash and inclosing a portion of the propelling mechanism of the vehicle, and a radiating-coil arranged to form the outer wall of the casing, substantially as described.

7. In a motor-vehicle, a vehicle-body, a bodily-removable casing forming a dash and inclosing a portion of the propelling mechanism of the vehicle, and a radiating-coil arranged in and forming one side of the casing, substantially as described.

8. In a motor-vehicle, the combination with a vehicle-body, and a motor projecting above the floor of said body, of a casing forming the dash of the vehicle-body and inclosing the projecting portion of the motor, an opening in the front of said casing, and a radiating-coil in said opening, substantially as described.

9. In a motor-vehicle, a vehicle-body, a running-gear frame, a motor borne upon said frame and projecting through the floor of said vehicle-body, a removable casing carried upon the body and inclosing that portion of the motor which projects through the floor of the vehicle-body, and a cooling-coil arranged in advance of the engine and forming one wall of the casing, substantially as described.

10. In a motor-vehicle, a vehicle-body, a motor projecting above the floor of said body, a cooling-coil, secured to the vehicle-body and shielding the projecting portion of the motor on one side, and a removable casing cooperating with said coil to entirely inclose the projecting portion of the motor, substantially as described.

11. In a motor-vehicle, the combination with a vehicle-body and a motor projecting through the floor of said vehicle-body, of a combined dash and casing inclosing the projecting portion of the motor and provided with openings to permit access to the interior of said casing and allow free circulation of air therein, and a radiating-coil connected with the motor arranged in one of said openings, substantially as described.

12. In a motor-vehicle, the combination with a running-gear frame comprising axles, converging intermediate members unyieldingly supported upon the rear axle, a spring upon the front axle, and a pivotal connection between said spring and intermediate mem-



bers arranged in the vertical plane of the front axle, of a motor supported upon said frame adjacent to the front axle, substantially as described.

5 13. In a motor-vehicle, a running-gear frame having its side members converging toward the front axle and terminating in a yoke, a motor arranged between said side members adjacent to the yoke, a trussed front  
10 axle comprising an upper chord and a lower chord, struts arranged between said chords, a spring arranged centrally of the axle and secured to said struts, said yoke being pivoted to the center of the spring, substantially as  
15 described.

14. In a motor-vehicle, the combination of a running-gear frame substantially triangular in form and having its side members pivoted to a centrally-arranged spring supported by  
20 the front axle, a vehicle-body supported by the frame, a motor supported between the side members of said frame adjacent to the

pivotal connection between the side members and front axle and projecting above the floor of the vehicle-body, a removable casing form- 25 ing the dash of the vehicle-body and inclosing the projecting portion of the motor, and means in the casing permitting access to the interior thereof and free circulation of air around the motor, substantially as described. 30

15. In a motor-vehicle, a running-gear frame, comprising converging intermediate members unyieldingly supported on the rear axle, a spring borne upon the front axle, a yoke intermediate of the converging members 35 and spring, and a motor mounted upon said converging members, substantially as described.

This specification signed and witnessed this 13th day of October, A. D. 1900.

HIRAM PERCY MAXIM.

In presence of—

F. GOODWIN SMITH,  
HERMANN F. CUNTZ.