

No. 717,517.

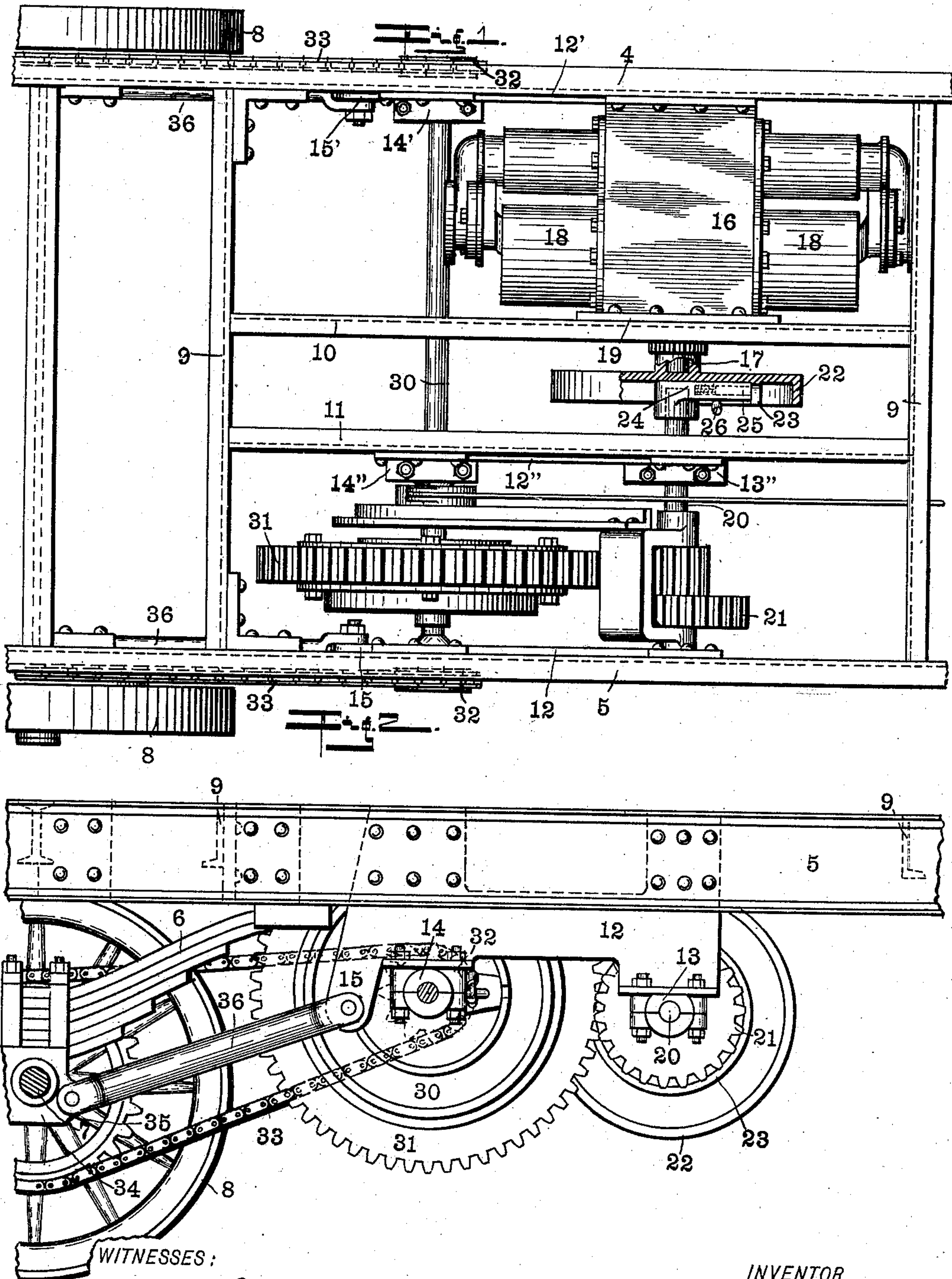
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P. H. WHITE.

ENGINE AND DRIVING GEAR SUPPORT FOR STEAM WAGONS.

(Application filed Mar. 7, 1902.)

(No Model.)



WITNESSES:

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UNITED STATES PATENT OFFICE.

PAUL H. WHITE, OF INDIANAPOLIS, INDIANA, ASSIGNOR TO WHITE STEAM WAGON COMPANY, OF INDIANAPOLIS, INDIANA, A CORPORATION OF INDIANA.

ENGINE AND DRIVING-GEAR SUPPORT FOR STEAM-WAGONS.

SPECIFICATION forming part of Letters Patent No. 717,517, dated December 30, 1902.

Application filed March 7, 1902. Serial No. 97,114. (No model.)

To all whom it may concern:

Be it known that I, PAUL H. WHITE, a citizen of the United States, residing at Indianapolis, in the county of Marion and State of Indiana, have invented certain new and useful Improvements in Engine and Driving-Gear Supports for Steam-Wagons, of which the following is a specification.

My invention relates to an improvement in the supporting means for the engine and driving-gearing in steam-wagons.

The object of my invention is to provide means by which the engine may be so supported that vibrations thereof will not affect its connection with the transmission-shaft driven thereby and so as to prevent the production of binding stresses in the engine, to provide means for holding the several gear-shafts in alinement, and to provide such improvements in details of construction as shall be hereinafter more particularly pointed out.

The accompanying drawings illustrate my invention.

Figure 1 is a plan view with portions shown in horizontal section. Fig. 2 is a side elevation of a portion of the parts shown in Fig. 1. Fig. 3 is a detail of the connection between the engine-shaft and the first transmission-shaft.

In the drawings, 4 and 5 indicate the side bars of the main frame of the wagon, said side bars being preferably channel-iron and supported at or near their rear ends each by a spring 6, carried by the rear axle 7, which rear axle is provided with suitable carrying-wheels 8.

Suitably secured to and extending between the side bars 4 and 5 are two transverse bars 9 9, and extending between said side bars 9 9, near the middles thereof, are two longitudinal bars 10 and 11, which are parallel with the side bars 4 and 5.

Riveted or otherwise secured to side bar 5 is a plate 12, provided with a pair of depending bearings 13 and 14. Plate 12 is also provided at its rear end with a depending finger 15, the purpose of which will appear.

Secured to side bar 4 is a plate 12', which is similar to plate 12, except that it carries only one bearing 14', which corresponds to and is

arranged in the line with the bearing 14. Plate 12' is also provided with a depending finger 15', corresponding to the finger 15 of plate 12.

In my steam-wagon I use a steam-engine 16, which forms the subject-matter of my pending application, Serial No. 77,376, although I have no intention of limiting myself to this particular engine in the present instance. Said engine consists of a central box-like body, through which the crank or power shaft 17 is extended, and two sets of power-cylinders 18, which are secured to the box-like body on opposite sides of the crank-shaft.

Secured to the longitudinal bar 10 of the wagon-frame is a plate 19, which is arranged opposite the forward end of plate 12', and the box-like body of the engine 16 extends between and is secured to said plate 19 and the forward end of plate 12'.

Secured to the longitudinal bar 11 is a plate 12'', which is similar to the plate 12 and is provided with bearings 13'' and 14'', corresponding to and arranged in alinement with the bearings 13 and 14 of plate 12.

Mounted in the forward bearings 13 and 13'' of the plates 12 and 12'' in alinement with the crank-shaft 17 of the engine is a transmission-shaft 20, which carries suitable transmission-gears 21. Secured to that end of the crank-shaft 17 adjacent shaft 20 is a fly-wheel 22, provided with a pair of shoulders 23. Secured to the adjacent end of shaft 20 is an arm 24, which is arranged to rotate parallel with the transverse face of the fly-wheel 22 and is of such length that its outer end may pass just within the shoulders 23.

Mounted in the arm 24 and radially movable therein is a bolt 25, which may be projected from arm 24, so as to lie between shoulders 23, and thus lock wheel 22 and arm 24 together. Bolt 25 may be retracted from between shoulders 23 and may be held in either of its positions by means of an arm 26, which extends through a slot 27, formed in arm 24 and adapted to be swung into either one of a pair of transverse pockets 28 and 29, leading from the slot 27.

Mounted in the bearing 14, 14'', and 14' of

the plates 12, 12'', and 12', respectively, thus being parallel with the shafts 17 and 20, is a shaft 30, which carries a suitable compensating gear 31, adapted to be driven by the gears 21. Shaft 30 carries suitable driving-gears 32, which are connected by chains 33 with the supporting-wheels 8.

Each spring 6 is carried by a bearing 34, in which the axle 7 is journaled, and each of said bearings is provided with an ear 35, to which is connected one end of a tie-bar 36, the opposite end of said tie-bar being connected to the adjacent depending finger 15 or 15' of the plates 12 and 12', respectively.

The support of the box-like body of the engine is above and in alinement with the crank-shaft thereof, so that vertical vibrations of the extremities of the engine will not materially affect the crank-shaft. The shaft 30 is supported by all three plates 12, 12'', and 12', and shafts 17 and 20 are held in alinement with each other, shaft 17 by reason of the support of the engine from plates 12' and 19 and shaft 20 by reason of its support in plates 12 and 12''. The three shafts of the driving-gearing are held in alinement with the main shaft or driving-axle 7 by the tie-bars 36, thus creating a rigid structure which cannot be easily distorted from operative alinement.

I claim as my invention—

1. The combination in a self-propelling wagon, of suitable carrying-wheels, a frame composed of connected side bars carried by the wheels, a pair of intermediate bars parallel with and between the side bars and supported thereon, a transmission-shaft 20 supported in suitable bearings carried by one of the side bars and the adjacent intermediate bar, an engine supported on the other side bar and the adjacent intermediate bar with its shaft in alinement with the shaft 20, driving connections between the engine-shaft and shaft 20, a transmission-shaft 30 supported in suitable bearings carried by the two side bars and the first-mentioned intermediate bar, driving connections between the two transmission-shafts, and a driving connection between the second transmission-shaft and the carrying-wheels.

2. The combination in a self-propelling wagon, of a pair of suitable carrying-wheels, an axle therefor, a frame composed of connected side bars carried by the axle, a pair of intermediate bars parallel with and between the side bars and supported thereon, a transmission-shaft 20 supported in suitable bearings carried by one of the side bars and the adjacent intermediate bar, an engine supported between the other side bar and the adjacent intermediate bar with its shaft in alinement with the shaft 20, driving connections between the engine-shaft and shaft 20, a second transmission-shaft supported in suitable bearings carried by the two side bars and the

first-mentioned intermediate bar, driving connections between the two transmission-shafts, a driving connection between the second transmission-shaft and the carrying-wheels, and a pair of struts or tie-bars connecting the side bars and axle.

3. The combination in a self-propelling wagon, of suitable carrying-wheels, a pair of connected side bars forming part of the wagon-frame and supported by the carrying-wheels, bearing-plates 12, 12' and 12'' carried by or supported upon the side bars, a transmission-shaft 20 rotatably supported in suitable bearings carried by plates 12 and 12'', a transmission-shaft 30 rotatably supported in bearings carried by plates 12, 12'' and 12', driving connections between the shafts 20 and 30, an engine supported in part by the plate 12' with its shaft in alinement with shaft 20, driving connections between the shaft of the engine and the transmission-shaft 20, and driving connections between the transmission-shaft 30 and the carrying-wheels.

4. The combination in a self-propelling wagon, of a pair of suitable carrying-wheels, an axle therefor, a pair of connected side bars forming a part of the wagon-frame and supported upon the axle, bearing-plates 12, 12' and 12'' carried by or supported upon the side bars, a transmission-shaft 20 rotatably supported in bearings carried in plates 12 and 12'', a transmission-shaft 30 rotatably supported in bearings carried by plates 12, 12'' and 12', driving connections between the shafts 20 and 30, and an engine supported in part by the plate 12' with its shaft in alinement with shaft 20, driving connections between the transmission-shaft 30 and the carrying-wheels, and a pair of struts connecting the axle and the plates 12, 12' substantially as and for the purpose set forth.

5. A frame for self-propelling wagons, consisting of a pair of metallic side bars connected by transverse bars, a pair of intermediate bars between the side bars and supported on the transverse bars, a plate 12 secured to one of the side bars and carrying a pair of shaft-bearings, a plate 12' secured to the other side bar and carrying a shaft-bearing in alinement with one of the bearings of the plate 12, a plate 12'' carried by one of the intermediate bars and carrying a pair of shaft-bearings in alinement with the bearings of plate 12, and a plate 19 carried by the other intermediate bar in alinement with a portion of plate 12', substantially as described.

6. A frame for self-propelling wagons, consisting of a pair of metallic side bars connected by transverse bars, a pair of intermediate bars between the side bars and supported on the transverse bars, a plate 12 secured to one of the side bars and carrying a pair of shaft-bearings and a finger 15, a plate 12' secured to the other side bar and carrying a shaft-bearing and a finger 15' in alinement with

corresponding parts of the plate 12, a plate
12" carried by one of the intermediate bars
and carrying a pair of shaft-bearings in a line-
ment with the bearings of plate 12, and a plate
5 19 carried by the other intermediate bar in
alignment with a portion of plate 12', sub-
stantially as described.

In witness whereof I have hereunto set my
hand and seal, at Indianapolis, Indiana, this
14th day of February, A. D. 1902.

PAUL H. WHITE. [L. S.]

Witnesses:

ALBERT F. ZEARING,
ARTHUR M. HOOD.