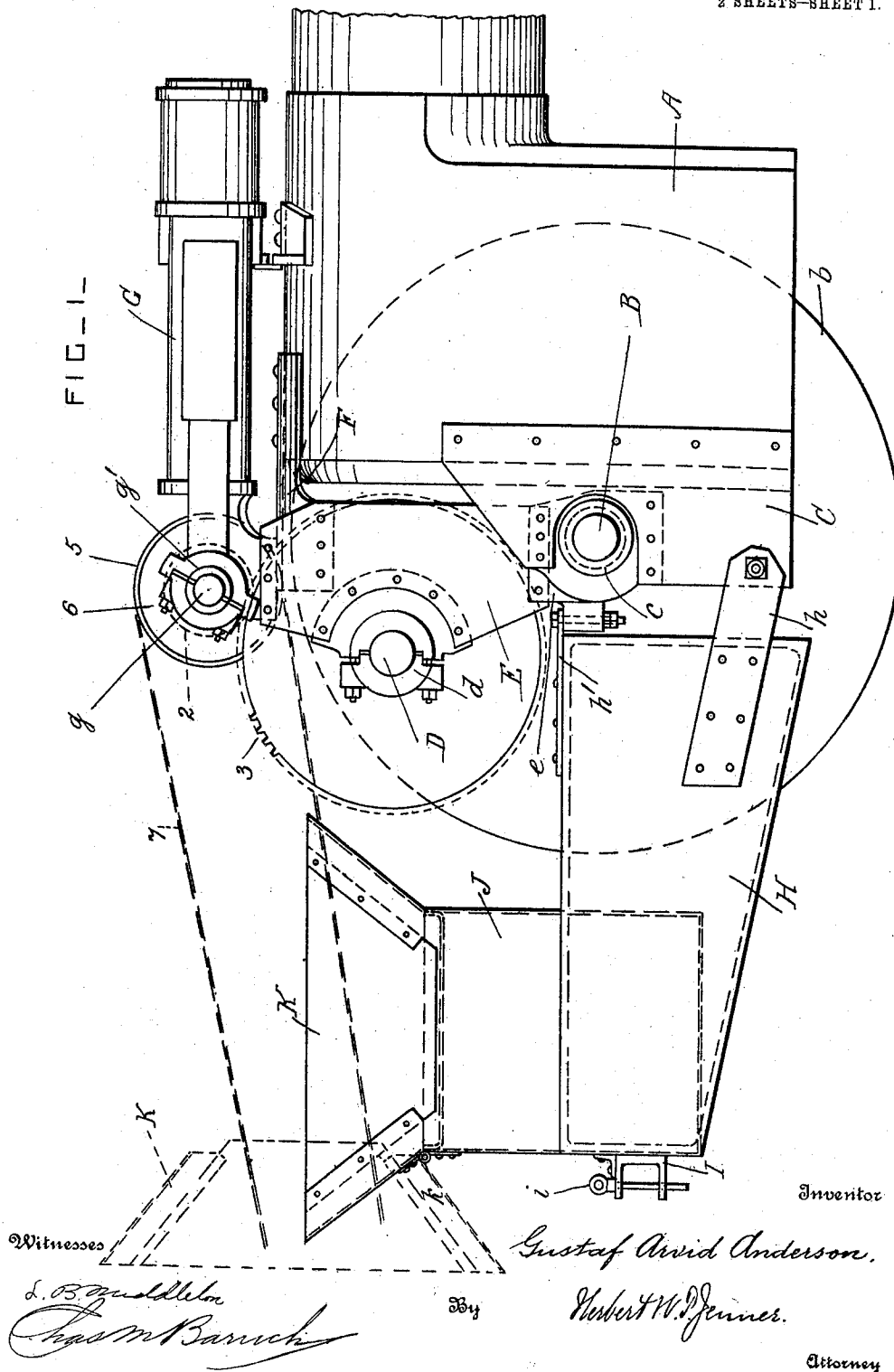


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ROAD ENGINE.  
APPLICATION FILED DEC. 20, 1909.

980,393.

Patented Jan. 3, 1911.  
2 SHEETS—SHEET 1.



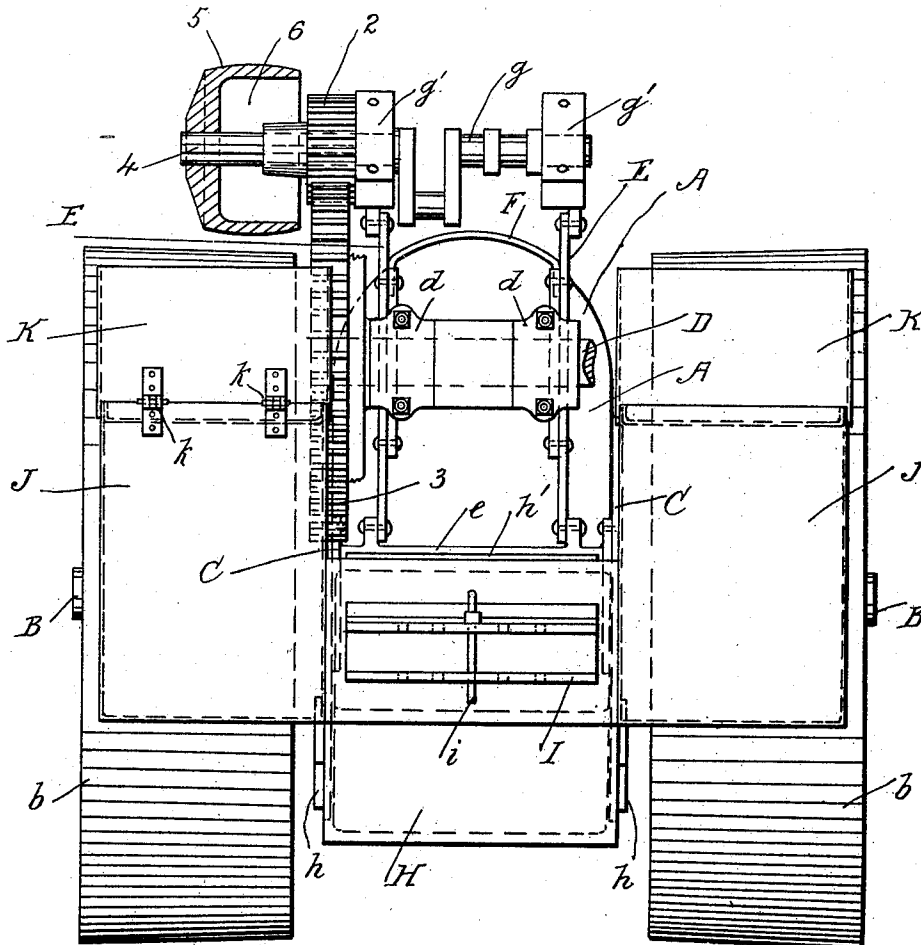
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3 SHEETS-SHEET 2.

FIG. 2.



Inventor

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Witnesses

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# UNITED STATES PATENT OFFICE.

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## ROAD-ENGINE.

980,393.

Specification of Letters Patent.

Patented Jan. 3, 1911.

Application filed December 20, 1909. Serial No. 534,043.

*To all whom it may concern:*

Be it known that I, GUSTAF ARVID ANDERSON, a citizen of the United States, residing at Waynesboro, in the county of Franklin and State of Pennsylvania, have invented certain new and useful Improvements in Road-Engines; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to steam road-engines or road-rollers; and it consists in the novel construction and combination of the parts hereinafter fully described and claimed whereby the driving-gearing, water-tanks and other parts are supported at the rear end of the boiler, and which also permit the roller to be used as a stationary engine and as a traction-engine.

In the drawings, Figure 1 is a side view of portions of the road-engine embodying this invention with one road-wheel, one of the tanks J and other parts removed for clearness. Fig. 2 is a rear end view of the principal parts shown in Fig. 1.

A is the firebox end portion of the boiler of a road-roller.

B is the main axle on which the road-wheels *b* are mounted. This axle is journaled in bearings *c* which are secured to two lower frame-plates C. These plates C are rigidly secured against the sides of the firebox and they extend from its bottom edge to about the level of the center line of its barrel. These plates C are flat, and they are arranged parallel to each other.

D is the countershaft which is journaled in bearings *d* secured to two upper frame-plates E. The frame-plates E are secured beyond the rear end of the firebox, and they also are flat and are arranged parallel to each other like the plates C. The plates E, however, are arranged nearer together than the lower frame-plates C and wholly beyond the rear end of the boiler. The lower end portions of the upper frame-plates E are secured to a saddle *e* which extends between the bearings *c* of the axle. The upper end portions of the plates E are secured to a curved plate F which is arranged in a substantially horizontal position, and which has its front end portion rigidly secured to the top of the boiler.

G is the frame of the steam-engine, and *g*

is its crankshaft which is journaled in bearings *g'*. The engine frame is secured to the top portions of the plates E above the level of the curved plate F. The crankshaft *g* has a toothed driving pinion 2 keyed to it and gearing into a toothed wheel 3 secured on the countershaft D, and the principal advantage of forming the frame of separate plates C and E is that this construction permits the countershaft wheel 3 to be arranged wholly beyond the end of the boiler, instead of at its side, and it permits the engine to be made of less width over its road-wheels. This is important in a road-roller as the road-wheels must be of considerable width to roll the road, and it is desirable that they should not be arranged any farther apart than necessary. The countershaft is operatively connected with the road-wheels by suitable driving-wheels and compensating-gearing, which are not shown as they are of any approved construction.

The crankshaft *g* is provided with a feather-key or spline 4 at one end portion, and the pinion 2 is slidable on this key so that it may be slid into and out of engagement with the wheel 3, and it can be secured to the shaft in each position by any approved fastening device. A belt-pulley 5 is secured to the shaft *g* by the key 4 beyond the pinion 2, and its hub is arranged to one side of it, leaving a hollow space 6 at the other side of it into which the pinion 2 is thrust. When the pinion is slid into the space 6, the engine can be used as a stationary-engine to drive machinery, a belt 7 being placed on the belt-pulley 5 and led to the rear, as when led in that direction it will not strike the road-wheel which is underneath the pulley 5. The center of the axle is a little in front of the center of the crankshaft, and the driving-belt cannot be led forwardly and downwardly as it would rub against the periphery of the road-wheel.

H is the main water-tank for the boiler which is supported from the frame-plates C. Two side-bars *h* are secured to the sides of the tank and to the lower part of the plates C, and a top-bar or plate *h'* is secured to the top of the tank and to the axle saddle *e*.

I is a draft-bar secured to the rear end of the tank H, and provided with a coupling-pin *i*, so that the engine may be used as a traction-engine as well as for a road-roller and stationary-engine.

Two similar auxiliary water-tanks J are secured at the rear part of the main tank, and are arranged one on each side of it so that they will clear the peripheries of the road-wheels. Boxes or bunkers K for coal are secured on top of the tanks J, and in order that space for the driving-belt 7 may be provided, the box behind the driving-pulley 5 is removable. The removable box K is only a frame as its bottom is formed by the top of the tank, and it may be lifted bodily from the tank. In order to prevent its loss, however, the box is preferably connected to the rear end of the tank by a hinge  $h$ , so that it can be tilted up to afford a passage for the belt without being wholly removed. The main water-tank also forms a platform for the engineer to stand on when driving the road-roller.

20 What I claim is:

1. In a road engine, the combination, with a boiler, of two lower frame plates secured to the sides of the boiler and projecting rearwardly thereof in the same planes as its sides, two upper frame plates arranged wholly behind the rear end of the boiler parallel to and between the said planes, means for securing the said upper frame plates in position, an axle and road wheels mounted in the lower frame plates, a countershaft mounted in the upper frame plates, and a toothed countershaft wheel secured on the countershaft and arranged wholly behind the rear end of the boiler and not at one side thereof.

2. In a road-engine, the combination, with a boiler, of two lower frame-plates secured to the sides of the boiler at its rear end, a saddle extending crosswise between the lower frame-plates, two upper frame-plates having their lower parts connected with the saddle, said upper frame-plates being arranged behind the boiler and nearer together than the lower frame-plates, a longitudinal plate secured to the top of the boiler and to the upper end portions of the upper frame-plates, an axle and road-wheels mounted in the lower frame-plates, and a countershaft and driving mechanism mounted in the upper frame-plates.

3. In a road-engine, the combination, with a boiler, of two lower frame-plates secured to the sides of the boiler at its rear end, a saddle extending crosswise between the lower frame-plates, two upper frame plates secured to the saddle and connected with the boiler and arranged behind its rear end and nearer together than the lower frame-plates, an engine-frame secured to the top of the

boiler and to the upper end portions of the upper frame-plates, an axle and road-wheels mounted in the lower frame plates, a countershaft mounted in the upper frame-plates, an engine-shaft mounted in the engine-frame, and driving mechanism connecting the said shafts.

4. In a road engine, the combination, with a boiler, of two lower frame plates secured to the sides of the boiler and projecting rearwardly thereof in the same planes as its sides, a saddle secured between the lower frame plates, two parallel upper frame plates arranged wholly behind the rear end of the boiler and having their lower parts secured to the saddle and arranged between the lower frame plates, means for connecting the upper parts of the upper frame plates to the upper part of the boiler, an axle and road wheels mounted in the lower frame plates, a countershaft mounted in the upper frame plates, and a toothed countershaft wheel secured on the countershaft and arranged wholly behind the rear end of the boiler and not at one side thereof.

5. In a road engine, the combination, with a boiler, of two frame plates secured to the sides of the boiler and projecting rearwardly thereof in the same planes as its sides, a saddle secured between the upper parts of the said frame plates, a rectangular water-tank arranged behind the said boiler and frame plates, two side-bars secured to the sides of the water-tank and to the lower parts of the said frame plates, and fastening devices connecting the upper part of the water-tank with the said saddle.

6. In a road engine, the combination, with a boiler, of two frame plates secured to the sides of the boiler and projecting rearwardly thereof in the same planes as its sides, a saddle secured between the upper parts of the said frame plates, a rectangular water-tank arranged behind the said boiler and frame plates, two side-bars secured to the sides of the water-tank and to the lower parts of the said frame plates, fastening devices connecting the upper part of the water-tank with the saddle, and two auxiliary water tanks secured one on each side of the said water tank at the rear part thereof and projecting above the level of its top.

In testimony whereof I have affixed my signature in the presence of two witnesses.

GUSTAF ARVID ANDERSON.

Witnesses:

DANIEL S. BEARD,  
H. E. KUHNER.