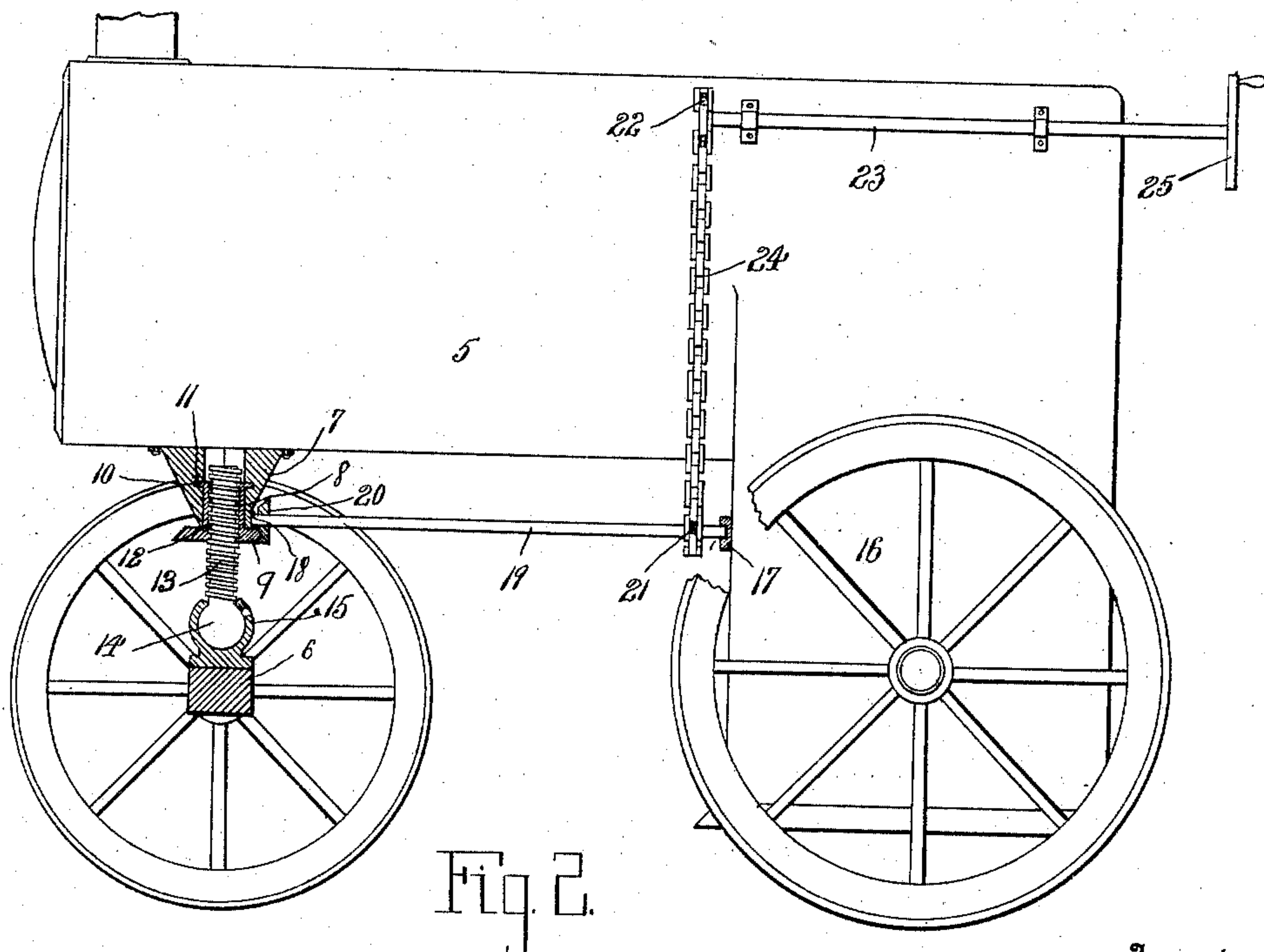
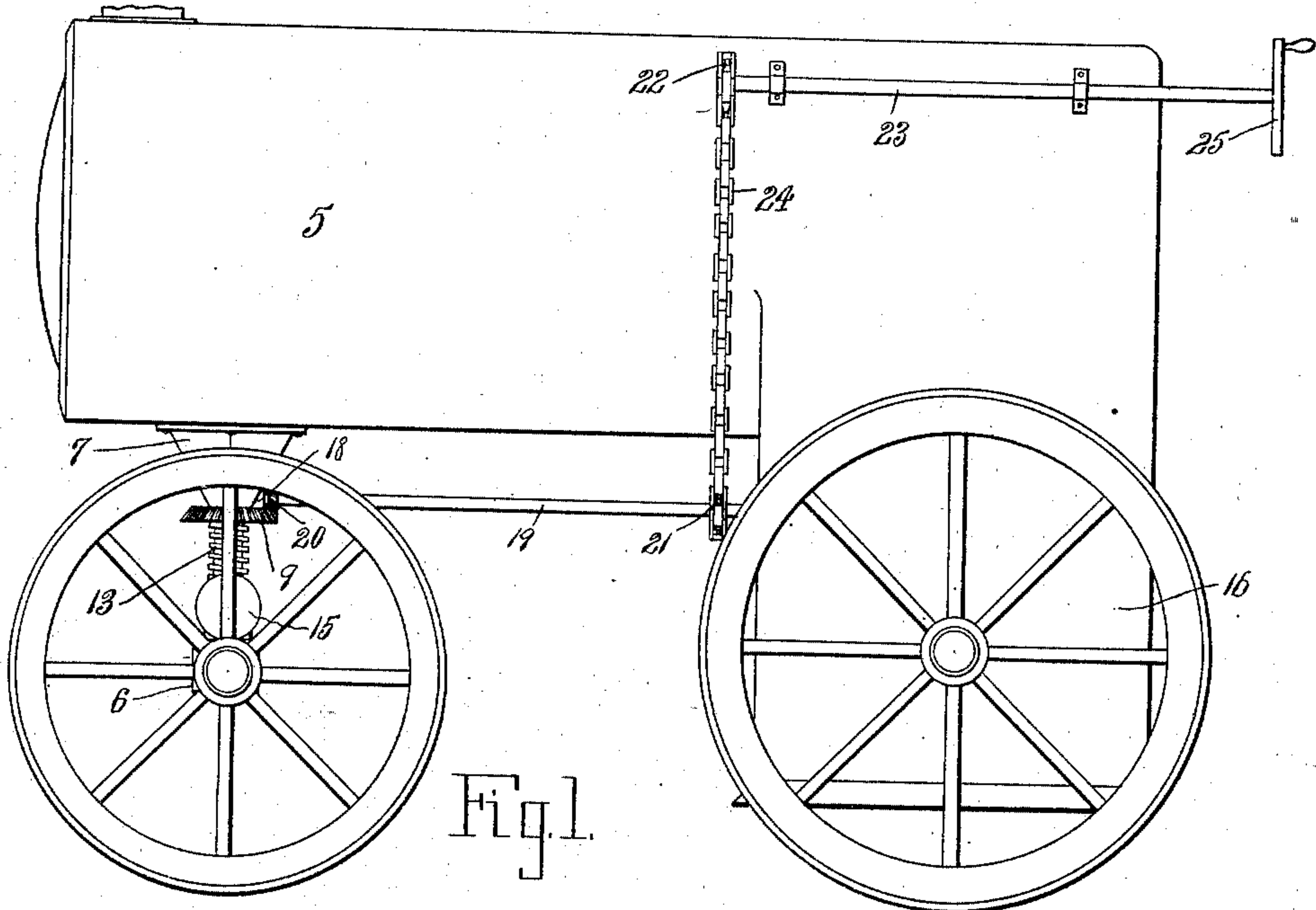


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LEVELING MECHANISM FOR TRACTION ENGINES.  
APPLICATION FILED FEB. 14, 1908.

928,380.

Patented July 20, 1909.



Witnesses  
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# UNITED STATES PATENT OFFICE.

RAYMOND C. GORHAM, OF DUNLAP, IOWA.

## LEVELING MECHANISM FOR TRACTION-ENGINES.

No. 928,380.

Specification of Letters Patent.

Patented July 20, 1909.

Application filed February 14, 1908. Serial No. 415,969.

*To all whom it may concern:*

Be it known that I, RAYMOND C. GORHAM, a citizen of the United States, residing at Dunlap, in the county of Harrison, State of Iowa, have invented certain new and useful Improvements in Leveling Mechanisms for Traction-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 leveling mechanisms for traction engines and is designed to provide means whereby the forward end of the engine may be raised or lowered in traveling, respectively, down and up grade, so as to maintain the boiler in horizontal or level position. Without the provision of such means, the water in the boiler will accumulate in one end or the other in going up or down grade and the boiler flues will, owing to this accumulation in one end only, soon become burned out; but, in the provision of such means this deterioration of the flues is obviated.

In the accompanying drawings, Figure 1 is a side elevation of a traction engine showing the application of the principle of my invention, and, Fig. 2 is a similar view but showing the fore part of the engine in vertical longitudinal section.

In the drawings, there is illustrated a traction engine of the ordinary type, the boiler of which is indicated by the numeral 5 and the bolster of the front axle by the numeral 6. A halved or two-part casting 7 is riveted or otherwise secured upon the under side of the shell of the boiler 5 adjacent the forward end thereof and received between the two members of this casting is a sleeve 8 formed integral with the upper face of a beveled gear 9, the sleeve being formed at its upper end with a flange 10 which is received in registering grooves 11 formed in the said members of the casting, the sleeve and the gear carried thereby being in this manner rotatably supported by the casting. The bore of the sleeve is threaded as at 12 and threaded into the bore is a screw 13 the lower end of which is formed with a spherical enlargement 14 which is received in a suitable cup bearing 15 fixed upon the bolster 6 at the middle thereof, it being

understood that the bolster may have a turning movement independently of the screw.

The fire-box of the engine is indicated by the numeral 16 and formed at its front wall is a thrust bearing 17 there being a similar bearing 18 formed upon the rear member of the casting 7. A shaft 19 is journaled at its ends in these bearings and has fixed upon it a beveled gear 20 which meshes with the gear 9. The shaft 19 has also fixed upon it a sprocket gear 21 over which and a similar gear 22 fixed upon a shaft 23 journaled in bearings upon the sides of the rear portion of the boiler is trained a sprocket chain 24. To the rear end of this shaft 23 is fixed a crank wheel 25 and it will be readily understood that by rotating this shaft 23 manually through the instrumentality of the crank wheel 25, a rotary motion will be imparted to the shaft 19 and finally to the sleeve 8. This rotation of the sleeve 8 will result in the screw 13 being fed in an up or down direction and in a corresponding movement, namely an elevation or lowering, of the front end of the boiler 5 of the engine.

What is claimed, is:—

In a device of the kind described, the combination of a wheeled body and a bolster for supporting one end thereof, of a two-part casting, each part being provided with a groove therein to form an annular channel when the parts are assembled and one of the parts having a bearing formed in the rear thereof, a bevel gear formed with a sleeve extending into the casting and having an annular flange at its upper end adapted to be received in the said channel, said gear and sleeve being further provided with a screw threaded bore, a screw held in said sleeve, a connection between said screw and bolster, a second bearing mounted on the body, a shaft held in said bearings, a pinion on said shaft meshing with the gear, and means to rotate said shaft.

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

RAYMOND C. GORHAM.

Witnesses:

GUS DANENBAUM,  
J. C. GORHAM.