Construction of Portable Locomotive and Traction Engines

Thomas Aveling

No. 120,611.

Patented Nov. 7, 1871.

2 Sheets--Sheet 1.

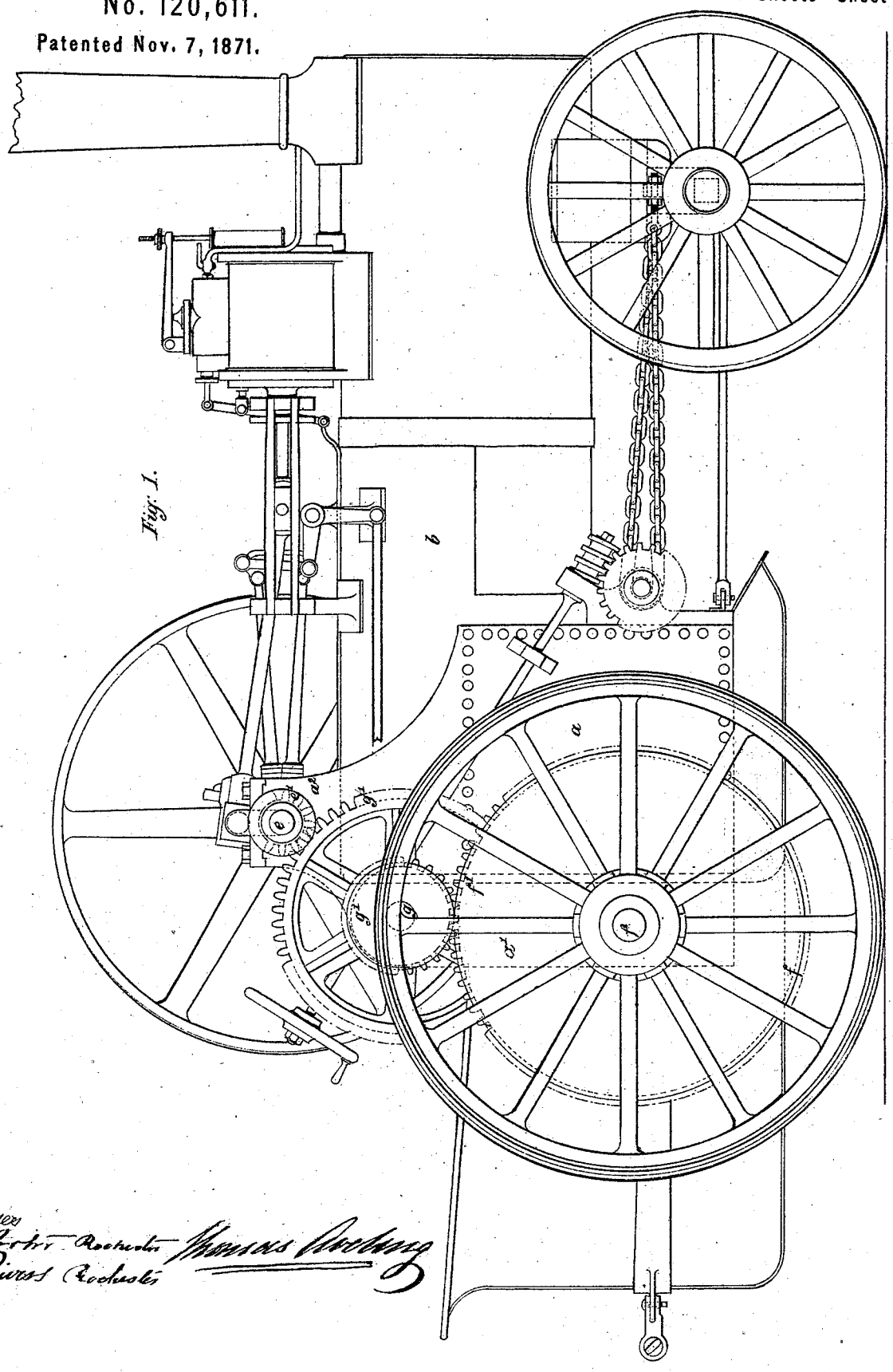

Fig. 1.

Witnesses
R. F. Porter Rochester
John Rivers Rochester

Thomas Aveling

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2 Sheets--Sheet 2.

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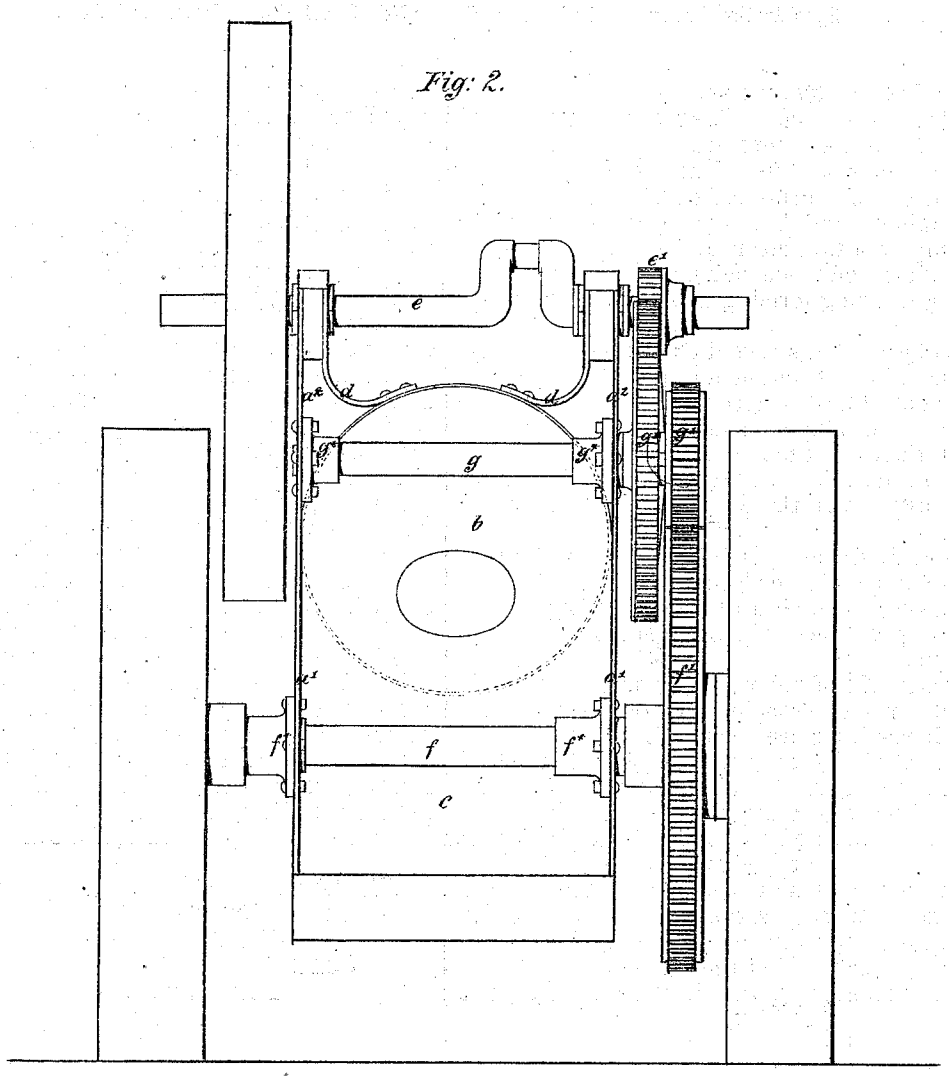
Fig. 2.



Witnesses

W. F. Brooks Rochester

John Rivers Rochester

Thomas Aveling

UNITED STATES PATENT OFFICE.

THOMAS AVELING, OF ROCHESTER, ENGLAND.

IMPROVEMENT IN LOCOMOTIVE AND TRACTION-ENGINES.

Specification forming part of Letters Patent No. 120,611, dated November 7, 1871.

To all whom it may concern:

Be it known that I, THOMAS AVELING, of Rochester, in the county of Kent, England, have invented a new and useful Improvement in the Construction of Portable, Locomotive, and Traction-Engines; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawing forming a part of this specification.

The object of this invention is to construct agricultural, road, traction, and portable steam-engines, and tramway locomotives, in a simpler and more economical manner than heretofore, and at the same time to render them stronger and more durable. In the accompanying drawing I have shown the way in which I effect this object.

Figure 1, Sheet I, is a side elevation of so much of a traction or locomotive-engine as will be necessary to explain the nature of my invention. Fig. 2, Sheet II, is an end elevation of the same.

At each side of the fire-box end of the boiler is fixed a strong wrought-iron horn-plate, $a\ a^1\ a^2$. These horn-plates are riveted to the boiler *b* and fire-box *c*. At a^1 they project beyond the end of the fire-box, and at a^2 above the top of the boiler. The projecting portions of the horn-plates are connected to the crown of the boiler by curved or bent plates *d d*, between which and the horn-plates are secured the bearings for the crank-shaft *e*. *f* is the axle of the traveling-wheels, working in bushes f^*, secured by screw-bolts to the rear ends of the horn-plates. Above this axle is a shaft, *g*, working in bushes g^*, also carried by the horn-plates. To this shaft *g* is keyed the gearing for transmitting the rotary motion of the crank-shaft to the axle of the traveling-wheels. The crank-shaft *e* receives rotary motion in the usual manner from the cross-head and connecting-rod of the engine, and it is fitted at one end with a spur-pinion, e', which drives the intermediate gearing g', and, through the spur-wheel f', gives rotary motion to the axle of the traveling-wheels. A fly-wheel on the opposite end of the shaft *e* is employed to carry the crank-shaft over its dead points. The engine is fitted, as usual, with a tank, and it is provided with any approved steering apparatus for guiding the front wheels.

From the above description it will be understood that as the wrought-iron horn-plates *a a* will take all the thrust from the piston acting on the crank-shaft *e*, the boiler and fire-box will not be so liable as heretofore to be damaged or strained by the working of the machinery.

Having now described the nature of my invention, I wish it to be understood that I claim—

In combination with the fire-box of a boiler, the side horn-plates *a a*, constructed and applied as and for the purpose set forth.

In witness whereof I, the said THOMAS AVELING, have hereunto set my hand and seal the 19th day of May, in the year of our Lord 1871.

THOMAS AVELING.

Witnesses:

RD. V. PORTER,
Rochester, Kent.

JOHN RIVERS.
Rochester, Kent.

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