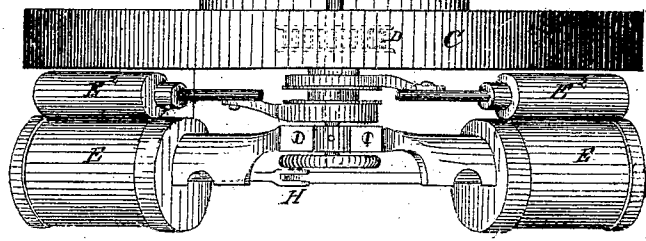
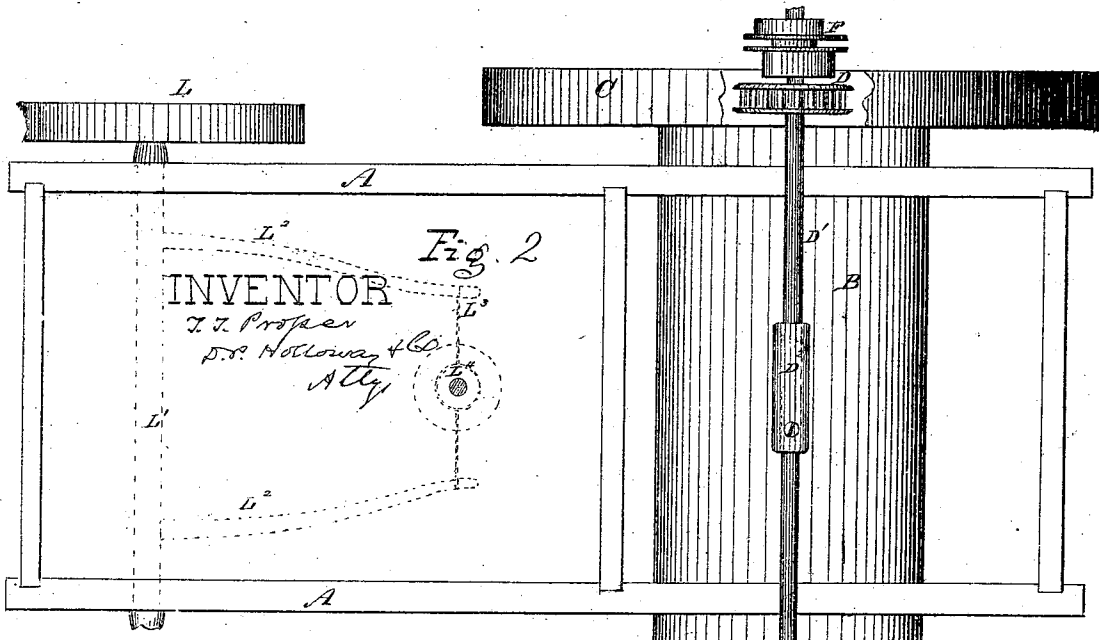
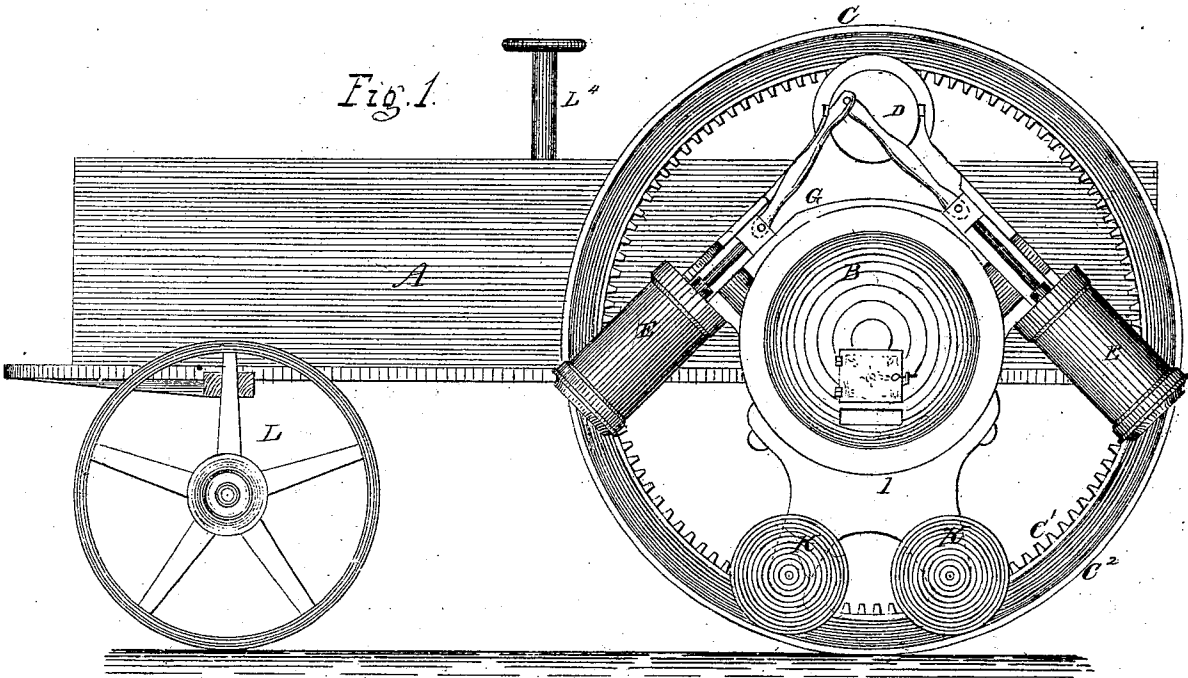


T. T. PROSSER.  
TRACTION ENGINE.

No. 110,865.

Patented Jan. 10, 1871.



T. T. PROSSER.  
TRACTION ENGINE.

2 Sheets—Sheet 2.

No. 110,865.

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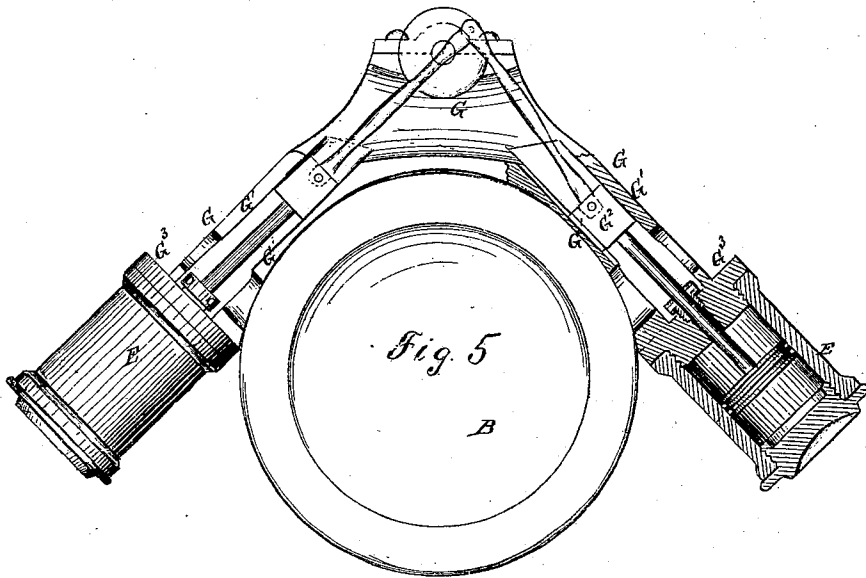


Fig. 7.

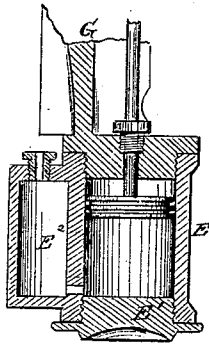
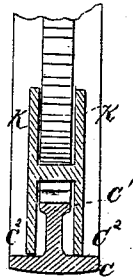


Fig. 6.



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Addy, Ill.

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Inventor.  
D. P. Holloway & Co.  
Attys

# United States Patent Office.

TREAT T. PROSSER, OF CHICAGO, ILLINOIS, ASSIGNOR TO HIMSELF,  
HENRY WALLER, AND W. S. WALLER, OF SAME PLACE.

Letters Patent No. 110,865, dated January 10, 1871.

## IMPROVEMENT IN TRACTION-ENGINES.

The Schedule referred to in these Letters Patent and making part of the same.

To all whom it may concern:

Be it known that I, TREAT T. PROSSER, of Chicago, in the county of Cook and State of Illinois, have invented certain Improvements in Traction-Engines for Hauling Wagons upon Common Roads and other purposes; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the annexed drawing making part of this specification, in which—

Figure 1 is a side elevation.

Figure 2 is a plan view:

Figure 3 is a vertical section of one of the carriers.

Figure 4 is a section of the driving-pinion.

Figure 5 is an end view of the boiler and engine, partly in section.

Figure 6 is a section of the traction-wheel and carrier.

The same letters are used in all the figures in the designation of identical parts.

This invention is primarily designed for use as a traction-engine for drawing wagons over common roads, for drawing and carrying plows, and for other analogous uses; but the arrangement of the boiler and engine may also be adapted for portable and stationary engines.

My invention consists—

First, in the peculiar form of the traction-wheel and in the arrangement of the driving and carrying-wheels.

Secondly, in the construction of the frame and cylinders of the engine, and their arrangement in relation to the steam-generator.

Thirdly, in the details of the construction of diverse parts, to be specifically set forth in the following specification and claims.

In the annexed drawing—

A is the body or main frame of a traction-engine.

The steam-generator B is placed transversely across this frame. Any ordinary form of boiler may be adapted to this use.

O is the traction-wheel. It is made with a broad tread. On the inside is a stem or fin carrying a cogged flange, O'. This is placed inside and centrally of the peripheral rim O'', and, projecting on each side of the gearing, forms on each side of the cogs bearings for the edges of the flanges of the carriers.

Power is communicated to the traction-wheels by means of the driving-pinions D D, constructed with flanges upon each side, as indicated in fig. 4, to form an upper support for the traction-wheels and maintain them in line. These pinions are hung upon the shaft D', which is placed above the boiler, and they are geared into the internal cogs C' at the top of the traction-wheel. The advantage in this arrangement of the driving-pinions is that power, being applied to the traction-wheels at the furthest possible point from

the point of contact with the ground, leverage is obtained equal to that due to the entire diameter of the wheel.

The shaft D' is connected by a coupling-sleeve, D'', being constructed in two pieces, thus connected into one for ordinary use, but which, by loosening the coupling collar, may be used to permit the wheels to revolve in opposite directions.

The cylinders E E are placed on each side and at both ends of the boiler. They are fitted with the lower heads E', and have their valve-chests cast with the cylinder in the ordinary way. The valves are operated by eccentrics on the shaft D'.

The cylinders are supported by the frames G, which are fitted to and rest on each end of the boiler. These frames are cast in one piece, and have flanges turned up at G' to form ways for the guides of the cross-heads. The lower side of the cross-head is formed with a longitudinal tongue fitting into a corresponding groove cut in the upper face of the lower way G', as indicated at G'' in fig. 5. The lower ends of the frames G are so shaped and fitted as to form the upper cylinder-heads G''. The upper face of the cross-head bears simply against the lower face of the upper way G', so as to allow free play of the parts when the engine is passing over rough ground.

The stand I is bolted onto the lower edge of the boiler, and is fitted with suitable boxes to receive the journals of the carrier-wheels K. Said carrier-wheels are formed with a central shaft and two flanges, as shown in figs. 3 and 6. These flanges, extending down on each side of the cogged stem C', rest on the peripheral flanges C'', thus dividing the weight equally on the face of the traction-wheel O.

The engine is steered, when used as a traction-engine, by the front wheels L, the axle L' of which is pivoted under the main frame, and operated by means of the arms L'', cord or chain L'', and capstan L'. By turning the capstan the wheels may be shifted to make a long or short turn in either direction, as may be desired.

I am aware that an endless track for the carrying-wheels K has heretofore been formed by the use of a wheel, on the inner surface of which the carriers rested. I do not, therefore, claim broadly my wheel O as an endless track for the carrier. But my wheel is distinguished from all others used for analogous purposes in this, that the carriers rest with their flanges bearing on the peripheral flanges of the traction-wheel on each side of the centrally-placed cogged rib C', thereby applying not only the weight, which has been done before, but also the driving power at the middle of the width of the traction-wheel, thereby preserving its equilibrium.

Another peculiarity of construction is the applica-

tion of the driving power at the top of the wheel, thereby giving the greatest possible effect to that which constitutes, in arrangement, a lever, of which the pinion D is the power applied to the wheel C, the lever acting against the ground which constitutes the fulcrum to move the carriers K, the weight or resistance.

Engine-cylinders have heretofore been used bolted to a frame carried on the boiler, but I know of no case in which they have been disposed upon the opposite sides of the boiler, upon a frame encircling the boiler, to unite in driving a shaft running longitudinally with the boiler.

The peculiar construction of the frames G I also believe to be new.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. The traction-wheel C, constructed substantially as shown, so that both the weight carried and the driving power shall be centrally supported and applied.

2. In combination with the traction-wheel C, the driving-pinion D, but only when arranged to drive the traction-wheel from a point opposite to that upon which it rests, substantially as set forth.

3. In combination with the traction-wheels C, the boiler B, the pinions D, and shaft D', when arranged to operate in relation to one another, substantially as set forth.

4. The frame G, in combination with the cylinders E E, when constructed and arranged in relation to the boiler B, substantially as described.

5. In combination, the cylinders E and frame G, when the latter is so constructed that a part, G<sup>3</sup>, of the same shall constitute one of the heads of the cylinder, substantially as set forth.

6. The frame G, when cast in such form that the parts G<sup>1</sup> shall form ways, carrying the cross-head between their opposed faces.

7. The cross-head and ways, in combination, when constructed with a tongue and groove on one side only, substantially as and for the purpose set forth.

8. The frame G, when cast to form the plumber-block, ways, and cylinder-heads, in one piece, substantially as set forth.

9. The combination of the main frame, the boiler B placed transversely across the frame, stand I, and carriers K, arranged substantially as set forth.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

T. T. PROSSER.

Witnesses:

C. F. CLAUSEN,

B. EDW. J. BILS.