J. W. CLARDY.

Steam Road-Wagon.

No. 227,096. Patented May 4, 1880.

Fig. 1.

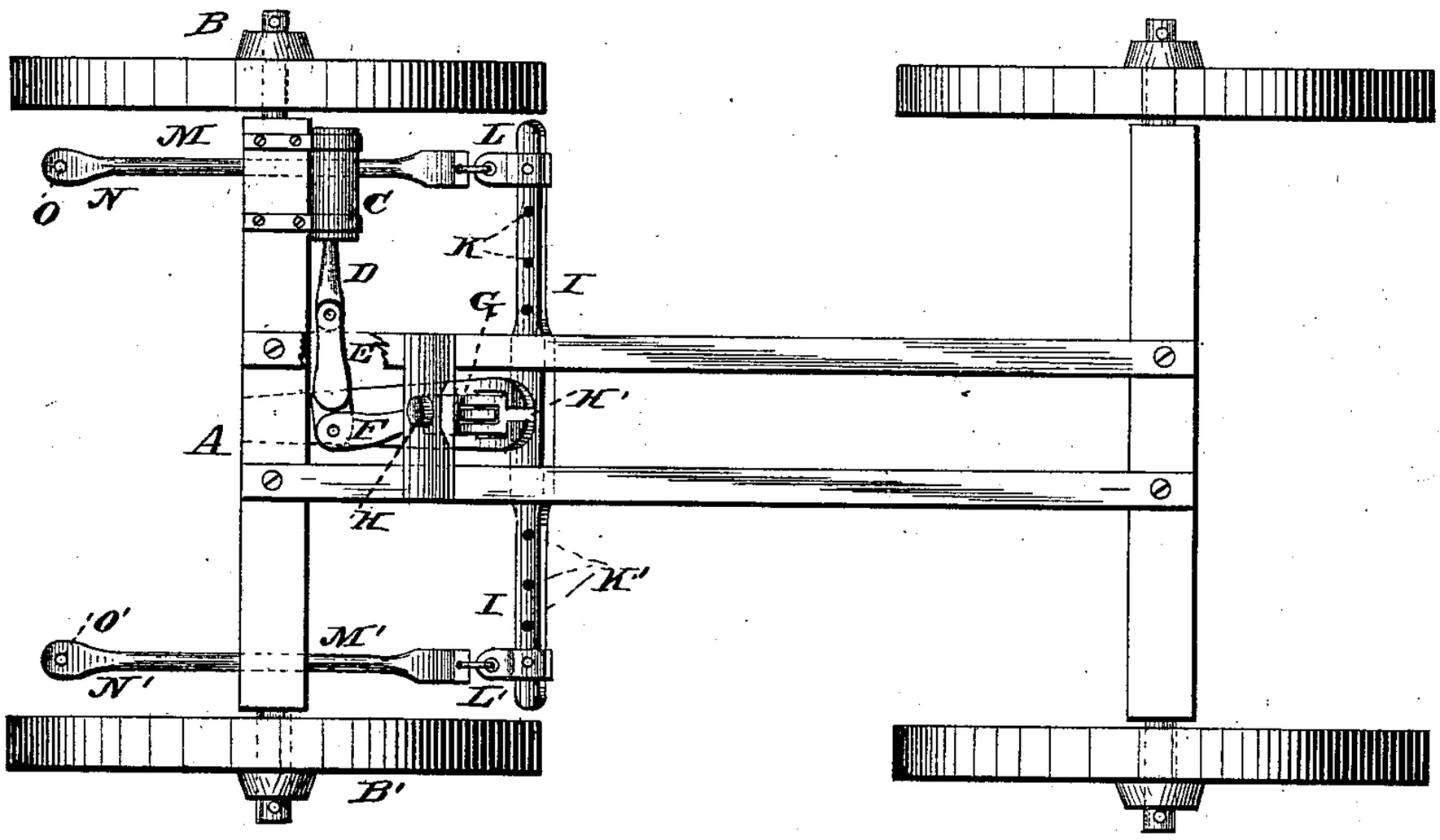


Fig. 2.

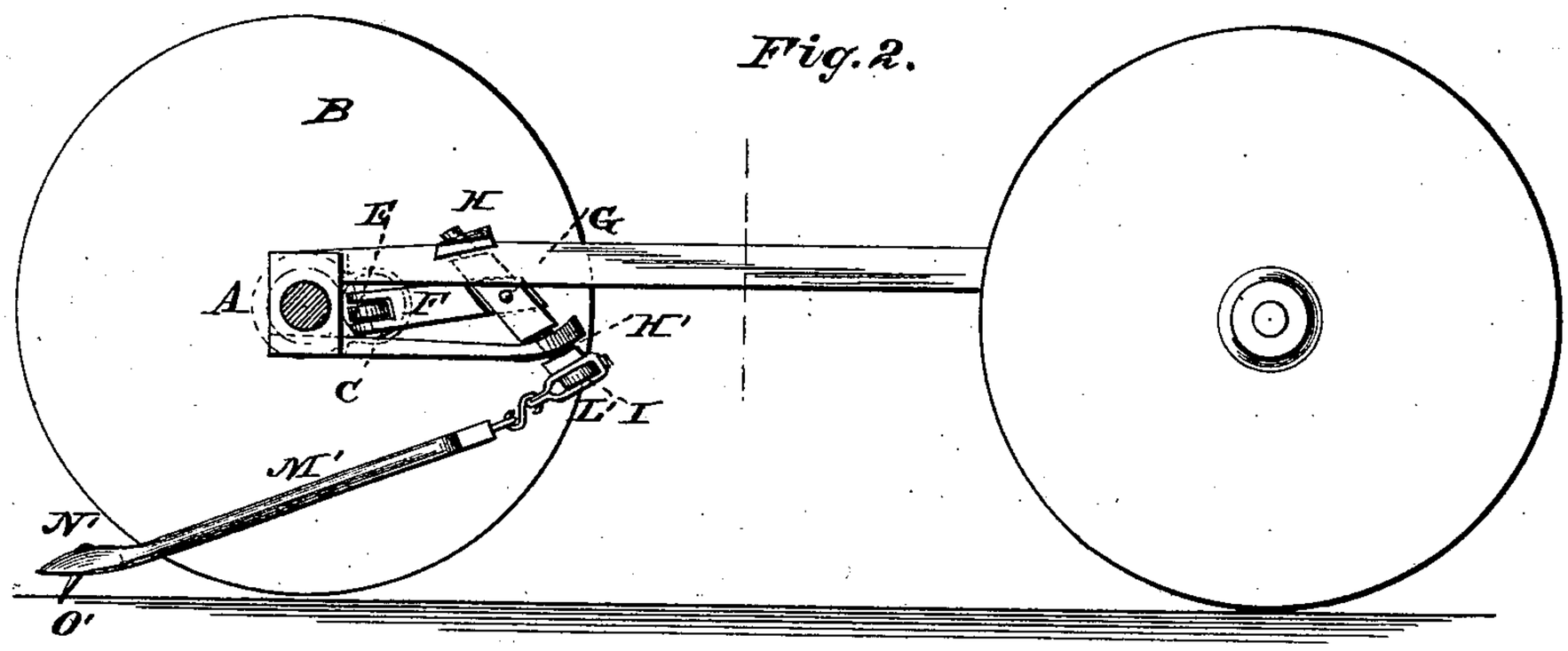
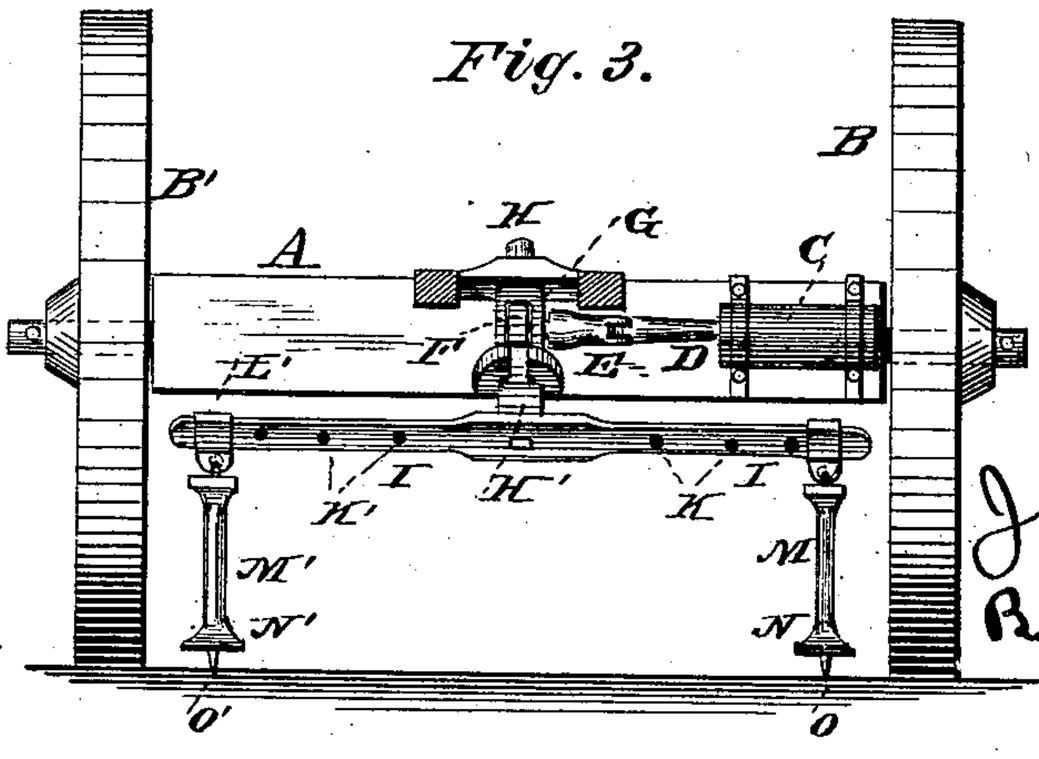


Fig. 3.



Witnesses:

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UNITED STATES PATENT OFFICE.

JOHN W. CLARDY, OF CHILDERSBURG, ALABAMA.

STEAM ROAD-WAGON.

SPECIFICATION forming part of Letters Patent No. 227,096, dated May 4, 1880.

Application filed February 3, 1880.

To all whom it may concern:

Be it known that I, J. W. CLARDY, of Childersburg, in the county of Talladega and State of Alabama, have invented certain new and useful Improvements in Steam Walking-Machines; 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 pertains to make and use it, reference being had to the accompanying drawings, which form part of this specification.

My invention relates to an improvement in steam walking-machines, the object being to provide steam-actuated mechanism for imparting motion to vehicles, plows, &c., wherein the power is applied through legs which are operated alternately to push the vehicle forward; and to this end my invention consists in certain features of construction and arrangement of parts, as will hereinafter be described, and pointed out in the claims.

In the accompanying drawings, Figure 1 is a plan view of my improvement. Fig. 2 is a side elevation of the same. Fig. 3 is a front elevation.

A represents the rear axle, and B B′ the ground or supporting wheels, of a vehicle. To the axle or any suitable frame-work connected therewith is secured a steam-cylinder, C, which is furnished with a piston and suitable valve mechanism to constitute a double-acting steam-engine. D is the piston-rod, the outer end of which is pivoted to one end of a connecting-rod, E, the opposite end of the latter being pivoted to the arm F, which is rigidly attached to the rock-shaft G. Rock-shaft G is journaled at its ends in suitable bearings H H′, and to its lower end is secured an oscillating bar, I, the opposite ends of which are each furnished with the series of holes K K′. Upon the opposite ends of the oscillating bar I are placed the adjustable sleeves or bands L L′, which may be secured at any desired point of adjustment toward or from the center of the bar I, according to the required leverage. M M′ are the legs or push-bars, the upper ends of which are jointed to the sleeves or bands L L′, to allow of a free universal movement to the legs, the lower ends of which are provided with feet N N′, which may be of any required size to prevent their sinking into soft ground and impairing the efficiency of the apparatus. To the underside of the feet N N′ are secured the spikes O O′, which serve to prevent the feet from slipping backward when operating on hard or smooth surfaces.

Having described the construction and arrangement of the several parts of my invention, I will now briefly describe its operation. Steam is admitted alternately to the opposite ends of the steam-cylinder and operates to reciprocate the piston-rod, which latter imparts a rocking movement to the rock-shaft and an oscillating movement to the bar I. This movement of the bar I operates to alternately force the feet on the lower ends of the legs or push-rods firmly against the ground and propel the vehicle forward, the feet operating in a regular step-by-step movement. As the legs are connected to the oscillating bar I by a universal-joint connection, the feet are adapted to travel on rough and irregular surfaces with as much certainty and effectiveness in operation as on smooth surfaces.

The legs or push-bars are adjustably connected with the oscillating bar I for the following purpose: When great speed is desired the legs are secured to the outer ends of the bar, and thus the latter allowed to impart its greatest range of movement to the feet in propelling the vehicle. When great power and small speed are required the legs are moved toward and secured near the center of the bar I, thus insuring increased leverage in propelling the vehicle.

Many different devices might be resorted to for securing the legs to the oscillating bar in an adjustable manner, and hence I would have it understood that I do not restrict myself to the device shown and described for effecting this end.

The valve mechanism may be of any desired construction and arrangement; also, the several parts of the attachment may be made of iron, or partly of iron and partly of wood.

While I have not shown a steam-boiler attached to a vehicle provided with my improvement, I contemplate the employment of either a horizontal or vertical boiler, as may be found most expedient and practical for the particu-

lar purpose intended. If a vertical boiler is used, it may be supported on trunnions to maintain the water at a level on rough and uneven ground, and the steam and water connections may be made with the boiler through hollow trunnions.

Instead of employing a stationary steam-cylinder with its piston-rod connected with the arm of the rock-shaft by an intermediate jointed connecting-rod, I may dispense with the jointed connecting-rod altogether and use an oscillating engine and pivot the outer end of the piston-rod directly to the arm of the rock-shaft.

Any suitable pump may be operated by the engine for pumping water into the steam-generator. The steam-cylinder may be located either in a vertical or horizontal position, and in line with or transversely to the movement of the rock-shaft, and may be secured to any portion of the vehicle.

I am aware that road-engines have been provided with mechanism for imparting a step-by-step movement to feet which propel the engine, and hence I would have it understood that I make no broad claim to a road-engine provided with such mechanism for its propulsion.

Having fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. The combination, with the piston-rod of a steam-engine and a jointed connecting-rod, of a rock-shaft having an oscillating bar secured thereto and self-adjustable legs or push-rods connected with the opposite ends of said oscillating bar, substantially as set forth.

2. The combination, with the rock-shaft and oscillating bar, of self-adjustable legs or push-rods and means for securing them in any desired adjustment on opposite ends of said oscillating bar, substantially as set forth.

3. The combination, with the rock-shaft and oscillating bar, of legs or push-rods adjustably secured to the opposite ends of said oscillating bar and furnished with a universal-joint movement, substantially as set forth.

In testimony that I claim the foregoing I have hereunto set my hand.

JOHN WESLEY CLARDY.

Witnesses:
Z. H. CLARDY,
R. M. JOHNSON.