2 Sheets--Sheet 1.

J. UHR.

Portable-Engine.

No. 168,117. Patented Sept. 28, 1875.

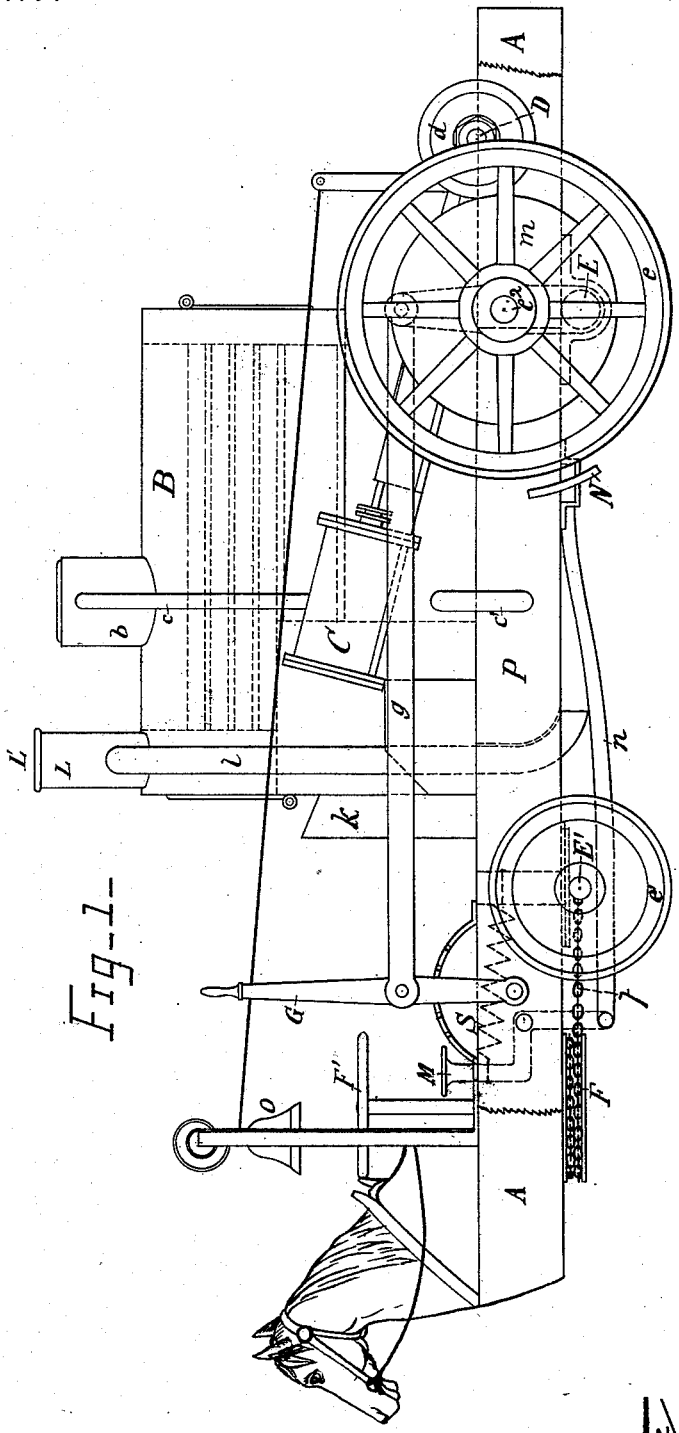

Fig-1-

WITNESSES

Charles Richner,

John C. Greenwood

INVENTOR

John Uhr

2 Sheets--Sheet 2.

J. UHR.

Portable-Engine.

No. 168,117. Patented Sept. 28, 1875.

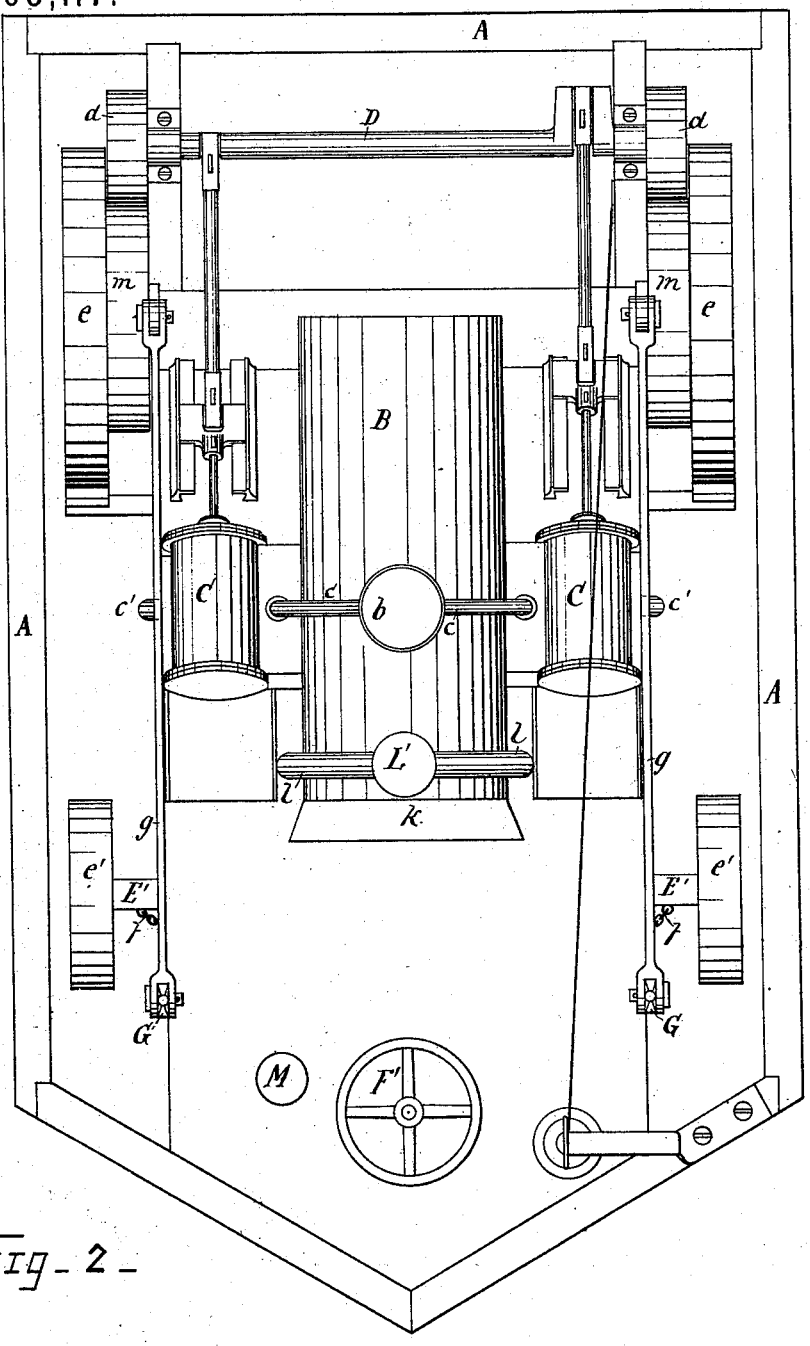

Fig. 2.

Witnesses

Charles Richmer

John S. Greenwood

Inventor

John Uhr

UNITED STATES PATENT OFFICE.

JOHN UHR, OF ERIE, PENNSYLVANIA.

IMPROVEMENT IN PORTABLE ENGINES.

Specification forming part of Letters Patent No. **168,117**, dated September 28, 1875; application filed June 25, 1875.

To all whom it may concern:

Be it known that I, JOHN UHR, of the city of Erie, State of Pennsylvania, have invented an Improved Street and Road Locomotive, of which the following is a specification:

The object of my invention is to bring into public use a machine that will perform all the duties of the horse, and at the same time will be more effectual, economical, and durable. All the inventions so far, relating to this particular class, are very incomplete, the escaping steam and smoke, and the impossibility of perfect control in the way of turning and instantaneous stopping, alone preventing their general adoption by street-railroads, express companies, merchants, farmers, &c.

The following gives a full and detailed description of the invention, as illustrated by accompanying drawings, Figure 1 representing a side elevation, and Fig. 2 a top view, of the machine.

To the inside of a suitably-constructed frame, A, is fastened, and extended as far as practicable, the water-tank P, and on this is placed the boiler B, shown in the drawings as a return-flue boiler, giving steam to a pair of engines, C C. These engines are placed one on each side of the boiler, and connected in the usual manner with a crank-shaft, D, on each end of which are frictions *d* of suitable shape and material. The frame A itself is placed upon axles E and E′, provided with wheels *e* and e^1. The front axle E′ is pivoted to the frame A, and can be turned in any direction by means of a chain, *f*, fastened near the ends of axle E′, and passing round or fastened to a sheave, F, with suitable connections, so as to be easily governed by working the hand-wheel or lever F′. The center e^2 of wheels *e* is higher than the center of axle E, and is connected through a rod, *g*, with a lever, G, by operating which the wheels *e* are thrown back and forth. To these wheels *e* are fastened frictions *m*, corresponding in shape with the driving-frictions *d*, with which they are brought in contact by throwing back lever G. *b* is the steam-dome and *c* the steam-pipe. The exhaust steam passes through the pipes *c′* in the water-tank P. The smoke passes from the saddle L through pipe *l* under the tank P. The saddle L is also provided with an adjustable cover, L′, to allow the smoke to pass into a stack, when the machine is to be fired up before starting.

In cities it is calculated to use hard coal, thereby reducing the amount of smoke to the lowest possible volume. To the front of the boiler is attached an outward-bent frame, *k*, designed to promote by its shape the draft in the boiler while the machine is in motion. M is a foot-lever connected with brakes N through rod *n*. By stepping on M the brakes N are brought to bear against the wheels *e*. By releasing the pressure the brakes N recede to their original position by the action of spring S. To the front of the car the figure of a horse may be attached, as shown in Fig. 1, that horses may not be as liable to shy at the appearance of the car.

The bell O can be kept ringing, if desired, by connecting it suitably with the machinery. By the application of frictions, and the peculiar way by which the frictions *m* are brought to bear against or recede from frictions *d*, it is evident that this car can be turned round in a very limited space, as the fore wheels can be so constructed as to pass entirely under the frame A, and if only one of the two pairs of frictions is brought in contact the wheel on the opposite side will remain stationary. By throwing out both frictions the car is stopped instantly while the engines are kept running, so that the frictions can be thrown in and brought to work, and the car or locotive started again without any trouble or noise.

I am well aware that there are many devices for road-locomotives; but to my knowledge there is none driven by frictions in the peculiar arrangement decribed above—enabling it to make very short turns, stop and start without trouble, noise, or loss of time—nor having the advantage of an increased draft by means of an air-catching frame in front of the boiler, nor of passing the smoke underneath the car. As the wheels can be made with adjustable flanges, to be taken off when used on common roads instead of on rails, and the shaft D may be extended and coupled to another shaft, the machine is, therefore, capable

of doing all the work of a road-locomotive, whether on track or not, and of a portable or stationary engine.

I claim—

In a road-locomotive, the frictions *m* and *d*, in combination with wheels *e*, axle E, rod *g*, lever G, crank-shaft D, and engines C, all constructed substantially as described, and for the purpose set forth.

JOHN UHR.

Witnesses:

CHARLES AECHNER,

JEHUE L. GREENWOOD.