2 Sheets--Sheet 1.

C. M. MILLER.

Carriage for Portable Engine.

No. 165,854. Patented July 20, 1875.

Fig. 1.

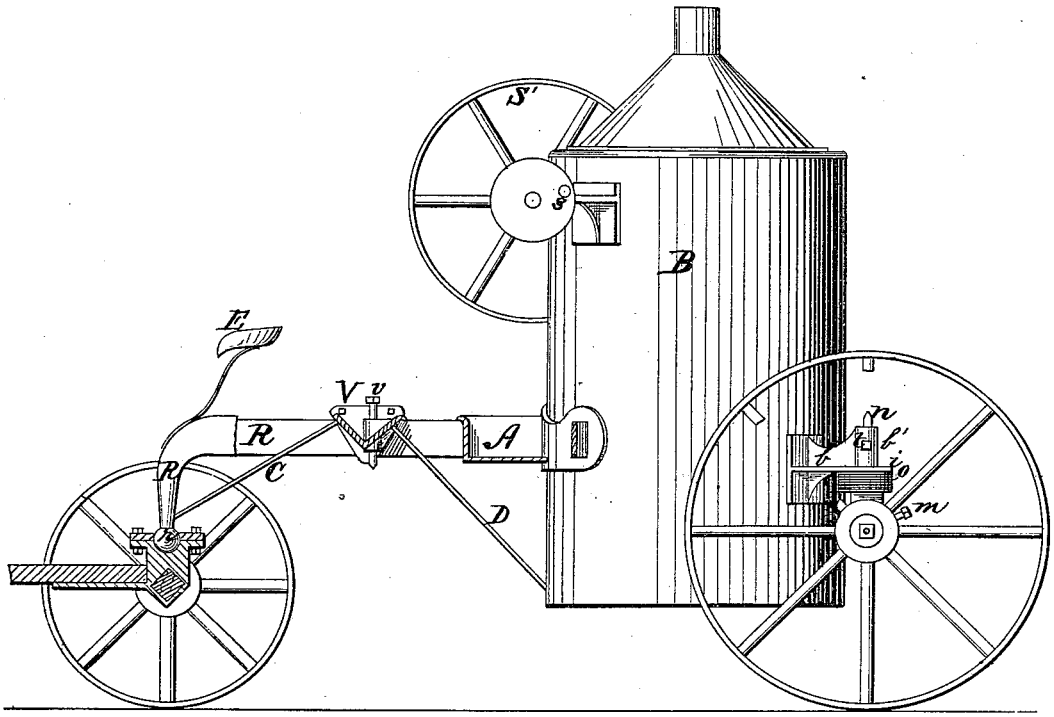
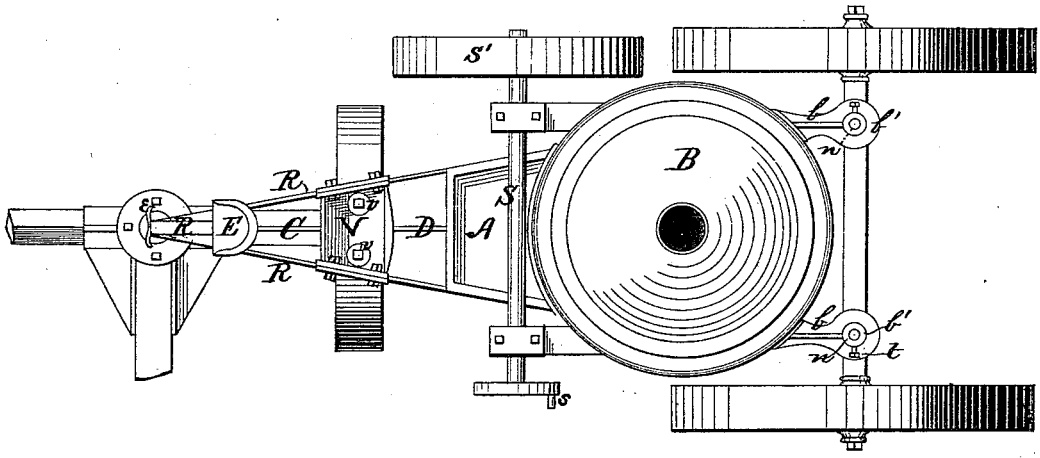


Fig. 2.



WITNESSES

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2 Sheets--Sheet 2.

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Fig. 3.

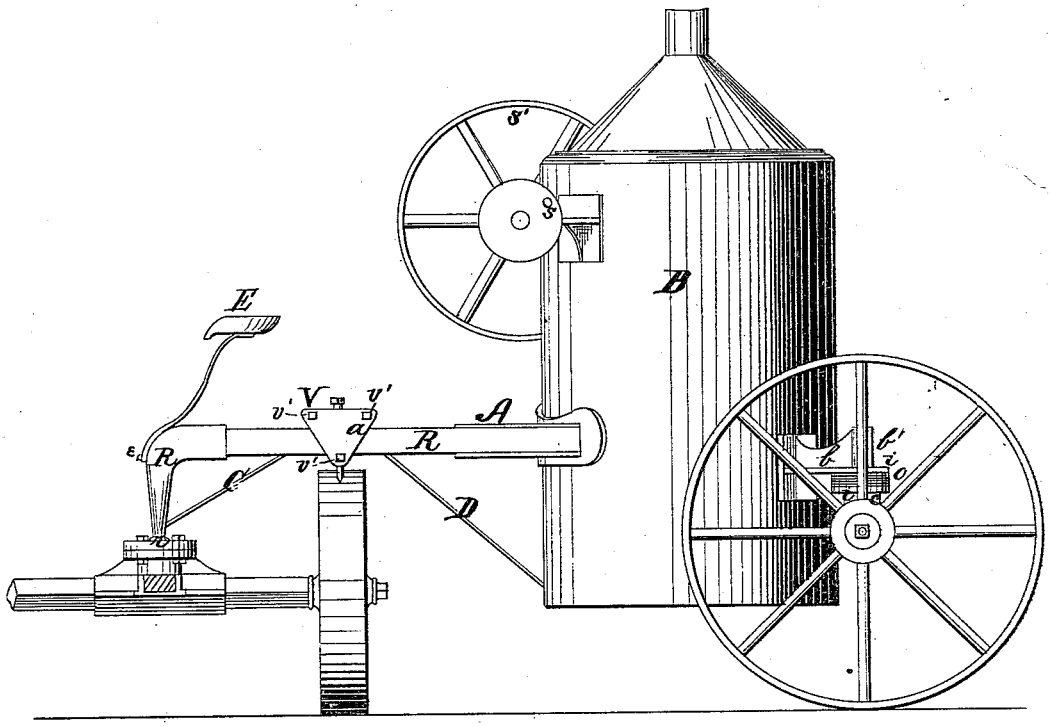


Fig. 4.

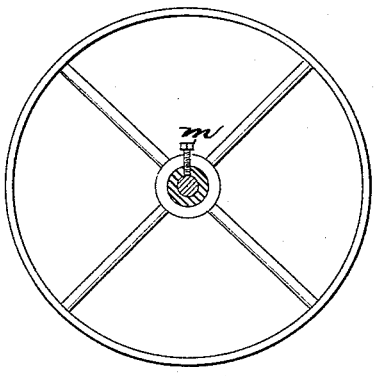
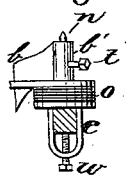


Fig. 5.



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UNITED STATES PATENT OFFICE.

CASSIUS M. MILLER, OF PHELPS, NEW YORK.

IMPROVEMENT IN CARRIAGES FOR PORTABLE ENGINES.

Specification forming part of Letters Patent No. **165,854**, dated July 20, 1875; application filed April 16, 1875.

To all whom it may concern:

Be it known that I, CASSIUS M. MILLER, of Phelps, in the county of Ontario and State of New York, have invented an Improved Carriage for Portable Engines; and I do hereby declare the following to be a full and exact description of the same, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a side elevation and partial section. Fig. 2 is a top plan view, showing the forward wheels arranged for fixing the carriage firmly in position. Fig. 3 is a side elevation, showing the same arrangement of wheels as in Fig. 2. Fig. 4 is a vertical section of the wheel-hub; and Fig. 5 is a vertical section of the rear axle.

Similar letters of reference in the accompanying drawings denote the same parts.

In agricultural engines, and other steam-motors mounted on light carriages, no little difficulty and inconvenience have been experienced from the vibration of the machinery or draft upon the working shaft or belt gradually displacing the carriage, until the belt becomes too slack, or gets out of alignment and runs off of the pulleys.

The main object of my invention is to avoid this difficulty by constructing the carriage so that it will not be liable to be moved out of position by the causes above referred to. Another object which I have had in view is to facilitate the proper adjustment and alignment of the belt when setting the engine for operation, or should it at any time become accidentally displaced; and still another object has been to simplify the structure, to reduce its weight, and at the same increase its strength and durability, and to obviate the necessity of bracing up the boiler, while in use, by means of jack-screws beneath it, as heretofore commonly practiced. To all which ends my invention consists, first, in a new construction of the reach, and a new mode of combining the same with the forward axle and the boiler; secondly, in a new mode of fixing the carriage rigidly in position, to wit, by locking the forward wheels, or one of them, to the reach; thirdly, in a new mode of preventing the carriage-wheels from being gradually moved by the draft or the vibration of the machinery, to wit, by locking them immovably to their axles; fourthly, in a new device for supporting the boiler in place of the jack-screws heretofore employed; fifthly, in a new device for locking the carriage-springs, to prevent vertical vibration of the machinery supported thereby; sixthly, in a new and convenient arrangement of the tool-box, and the employment of the same as a means of strengthening and supporting the reach and connecting it firmly to the boiler; and lastly, in the mechanical devices and combinations which embody the principles and effect the purposes above referred to.

The main features of my invention may be embodied and reduced to practice with almost any form of small light boiler and engine, and, accordingly, although I have, in the accompanying drawings, shown the common vertical boiler B and the horizontal working-shaft S mounted in brackets attached thereto, I have omitted the engine, as unnecessary to the description of the invention. The engine may be arranged in any convenient position, where, by means of the usual pitman, attached to the crank-pin *s*, it will drive the shaft S and the belt-pulley *s'* mounted thereon. At the front side of the boiler, at a suitable height, a stout metal box, A, wider at its rear than at its front end, is firmly secured to the boiler-plates, so as to lie between the rear ends of the bifurcated reach R, which are firmly riveted to its sides. The front end of the reach bends down, and is attached to the forward axle by means of a ball-and-socket joint, *r*, which permits the front wheels to be swung around in any direction, the horizontal part of the reach being sufficiently high to permit them to pass under it. A stout block, V, or V-shaped box, is mounted upon the two horizontal arms of the reach, about midway between its ends, and secured in that position by means of end plates *a a* and bolts *v'* above and below the edges of the reach, which construction allows it a slight longitudinal play upon its support.

For the purpose of supporting the bent front end of the reach against the draft of the