

RUSSELL PRISBLE
Imp'd Toy Steam Engine.

PATENTED AUG 15 1871

118007

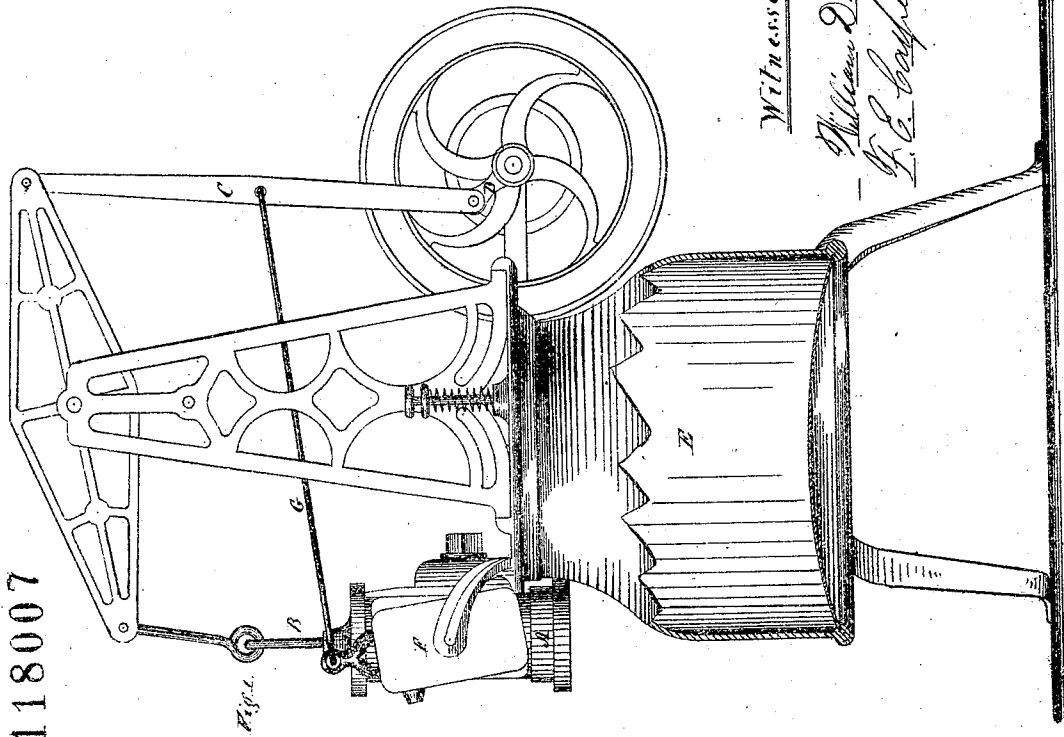


Fig. 1.

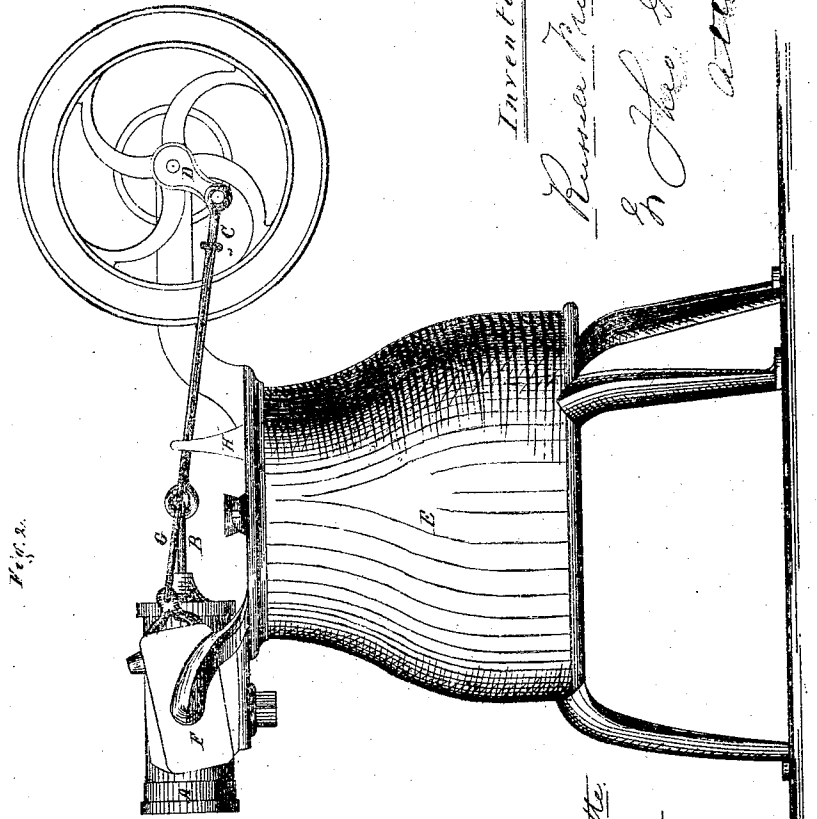


Fig. 2.

Witnesses

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UNITED STATES PATENT OFFICE.

RUSSEL FRISBIE, OF CROMWELL, CONNECTICUT.

IMPROVEMENT IN TOY STEAM-ENGINES.

Specification forming part of Letters Patent No. 118,007, dated August 15, 1871.

To all whom it may concern:

Be it known that I, RUSSEL FRISBIE, of Cromwell, in the county of Middlesex and State of Connecticut, have invented certain new and useful Improvements in Toy Steam-Engines; and I do hereby declare that the following is a full, clear, and exact description thereof, whereby a person skilled in the art can make and use the same, reference being had to the accompanying drawing and to the letters of reference marked thereon.

Like letters in the figures indicate the same parts.

My invention consists in operating the rocking or slide-valve of a steam-engine directly from the connecting-rod between the piston-rod and the crank without the use of an eccentric or separate crank for the purpose. This is accomplished by means of a valve-rod, which may operate longitudinally and directly upon the end of the valve, or communicate the motion by a rocking movement, as hereinafter shown.

Figure 1 shows a toy beam-engine having my improvements. It shows the direct connection between the connecting-rod and the valve. Fig. 2 shows a horizontal steam-engine with another form of my invention, having a rocking-lever to communicate motion from the connecting-rod to the lever.

In both the above figures, A is the steam-cylinder. B is the piston-rod. C is the connecting-rod. D is the crank. E is the boiler. F is the rocking-valve; G is the rod which operates it.

The cylinder remains stationary and does not oscillate, as is common in toy-engines. The ports are opened and closed by the rocking of the valve F so as to admit the steam and to exhaust in the manner common in steam-engines. In Fig. 1 the rod G communicates motion directly from the connecting-rod C to the upper end of the valve

F, so as to open and close the ports at the proper time. When the crank D is directly up or down the valve is in the middle of its throw, the piston is at one end of the cylinder, and the ports shut. When the crank is on one side, as shown in Fig. 1, the valve is turned so as to open one end of the cylinder to the steam and the other to the exhaust. In the drawing, the small aperture in F at *f* allows the exhaust-steam to escape into the atmosphere.

Another modification of the operation of the rod G, more suitable for horizontal engines, is shown in Fig. 2. Here G passes through an eye in the small pillar H, and has a rocking motion up and down. When the crank is directly to one side or the other the valve is in the middle of its throw and the piston at one end of the cylinder. When the crank is either up or down the valve is thrown to one side, as before described, and opens the ports. When the crank descends the end of the valve rises, and vice versa, the standard H acting as a fulcrum for the lever G.

My invention is capable of other modifications. Thus, in Fig. 2, the rod G might be firmly attached to the valve and be moved by the connecting-rod at the further end so as to oscillate the valve without passing through the standard H. In this case the valve would move so as to run the engine in the opposite direction.

What I claim as my invention is—

1. The rod G for communicating the lateral motion of the connecting-rod C to the valve F, substantially as herein described.
2. The combination of the connecting-rod C, the valve F, and the rod G, substantially for the purpose herein set forth.

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Witnesses:

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