2 Sheets--Sheet 1.

J. WEST & O. M. PARKER.

Improvement in Steam Bell-Ringers.

No. 128,441. Patented June 25, 1872.

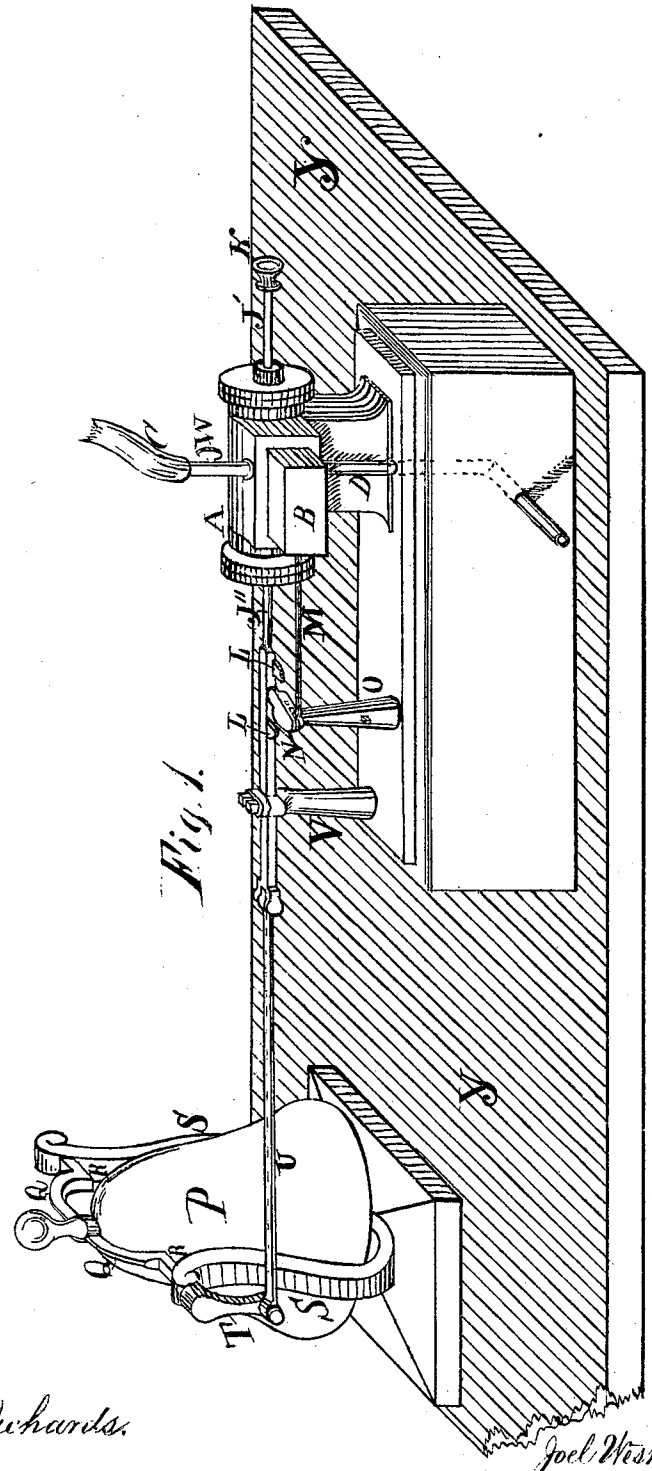

Fig. 1.

Witnesses:
Platt R. Richards.
M. H. Barringer.

Inventors,
Joel West & Orrin M. Parker,
by W. B. Richards, Atty.

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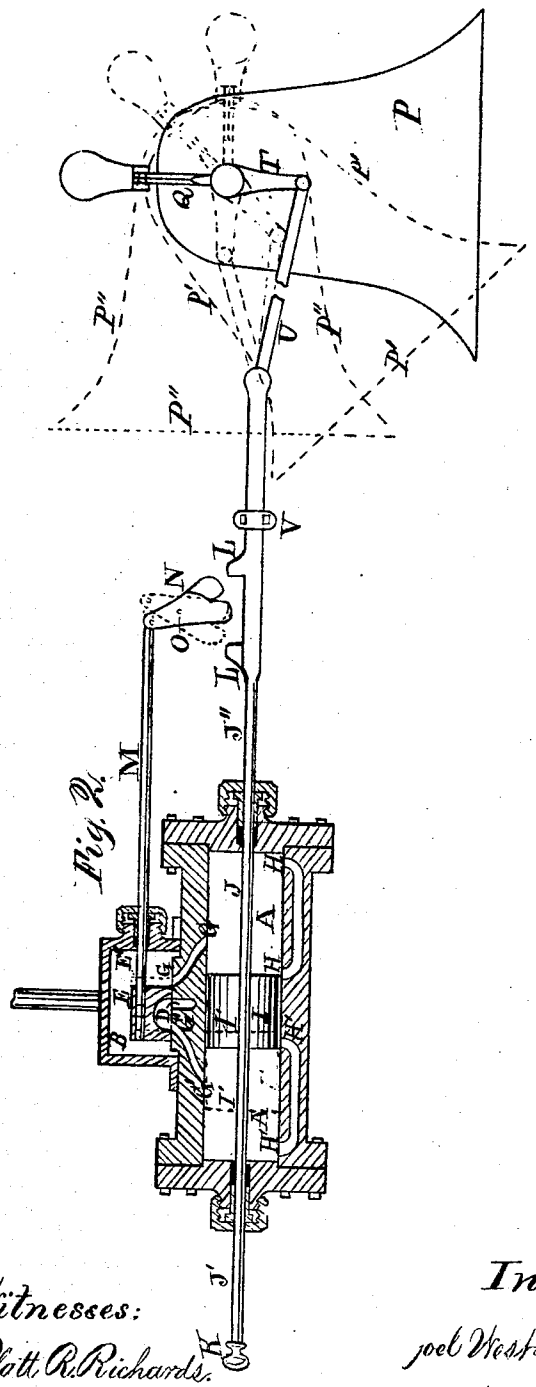

Fig. 2.

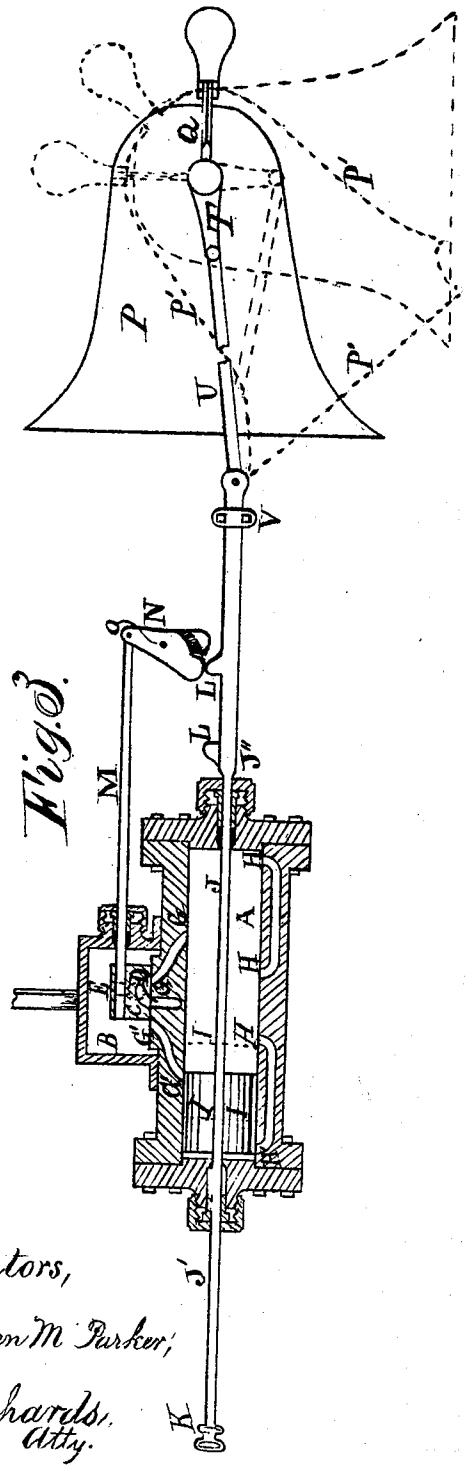

Fig. 3.

Witnesses:
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Atty.

UNITED STATES PATENT OFFICE.

JOEL WEST AND ORREN M. PARKER, OF QUINCY, ILLINOIS.

IMPROVEMENT IN STEAM BELL-RINGERS.

Specification forming part of Letters Patent No. 128,441, dated June 25, 1872.

SPECIFICATION.

We, JOEL WEST and ORREN M. PARKER, of Quincy, county of Adams, and State of Illinois, have invented certain Improvements in Bell-Ringing Engines, of which the following is a specification:

Nature and Objects of the Invention.

The nature of our invention relates to improvements in that class of bell-ringers in which the reciprocating movement of a piston is made to ring the bell by giving it an oscillating motion; and the invention consists, first, in such an arrangement of the bell and the operating mechanism as to give the bell a free swinging motion to and fro, similar to a pendulum, by the alternate action of gravity and momentum carrying it a portion of the distance of each oscillation independent of the other operating devices, all as hereinafter fully described; second, it consists in extending the piston-rod through the end of the cylinder most distant from the bell, so it may be taken hold of with the hand to either start the engine, to stop it, and to ring the bell by hand, all as hereinafter fully described; third, it consists in the general arrangement and combination of all the parts, as hereinafter fully described.

Description of the Accompanying Drawing.

Figure 1 is a perspective view of our invention. Fig. 2 is a horizontal sectional view of the steam-chest and cylinder and a top view of the other devices, showing a side elevation of the bell. Figure 3 is also a horizontal sectional view of the steam-chest and cylinder and a top view of the other devices, showing a side elevation of the bell.

General Description.

A is the steam-cylinder. B is the steam-chest. C is steam-inlet pipe. D is exhaust-opening. E is valve in steam-chest B. G G and G′ G′ are steam-passages from steam-chest B to cylinder A. H H′ are relief-passages. I is the piston-head, fitted with suitable packing at each end, and made lengthy for purposes hereinafter described. J is piston-rod working in suitable packing-boxes in each end of the cylinder A, and extending beyond the cylinder-heads, as shown in the drawing by J′ and J″. K is a handle on the end J′ of the piston-rod J. L L′ are tappets on the central part of the end J″ of the piston-rod J. M is the valve-rod of valve E. N is the rocker-arm, pivoted on top of the post O in such position as to communicate reciprocating motion from the piston J to the valve-rod M, as hereinafter described. P is the bell, Q the bell-yoke, and R trunnions on the ends of yoke Q, which trunnions are provided with suitable bearings in the frame S. T is a crank on the extended end of one of the trunnions R. U is the connecting-rod between the crank T and end J″ of the piston-rod. V is a standard with a suitable bearing for the end J″ of the piston-rod J. W is a pet-cock in the steam-inlet pipe C. Y is the bed-plate or base.

The operation of our invention is as follows: The steam-inlet pipe C is connected with any steam-reservoir, and the cock W may be turned to regulate the flow of steam between extreme high or low pressure. To start the bell, the handle K may be taken hold of, and the piston I moved thereby to the position shown by full lines at Fig. 2, bringing the valve E into the position shown at the same figure, opening thereby the steam-passage G G, admitting steam behind the piston, and driving it to the position shown by dotted lines I′ at same figure, in which position it covers steam-way G′ G′. By the same movement the tappet L′ will move valve E to the position shown by the dotted lines E′, allowing steam to exhaust through the steam-way G G into exhaust-opening D, and allowing steam to enter and fill steam-way G′ G′, which is at the time closed by the piston I, the bell P being at the same moment in the position shown by the dotted lines P′. The momentum acquired by the bell P will now carry it to the position shown by the dotted lines P″, at the same time carrying the piston I to the position shown by full lines at Fig. 3, opening, as shown, the relief-passage H′, allowing the air or vapor in the end of the cylinder A to escape around the piston I, and, by removing the resistance, giving the piston freedom to follow the momentum of the bell until it stops. The bell now falling back by its own gravity to the position shown by dotted lines P′, Fig. 3, will bring the piston I to the position shown by dotted lines at the same figure, the air entering through relief-passage H to fill the vacuum behind the piston I until

the bell forces it (the piston) back past, and closes, the inner end of the relief-passage H′ and opens steam-way G′ G′, allowing steam to enter thereby and force the piston back to the opposite end of the cylinder, where the same operation is repeated. The bell will continue being rung until, by taking hold of the handle K, the piston-rod J is brought into a position to bring the valve E to cover both steam-passages G G′, and, by moving the handle K forward or back, to uncover either passage G or G′, it may be started to ring. By turning the cock W so as to admit sufficient pressure of steam, the bell may be rung by a continuous rotary motion. The rapidity of movement of the bell may be somewhat regulated by a heavier or lighter handle or knob on its upper end.

When it is desired, the bell may be rung without steam by giving the reciprocating motion to the piston-rod from the handle K, by hand or otherwise.

The principal purpose is to furnish a simple, cheap, and effective bell-ringing device for locomotives, &c.

Claims.

We claim as our invention—

1. The steam-passages G G′ and relief-passages H H′, when arranged to operate with the long piston I and bell P, substantially as described, and for the purpose set forth.

2. The piston-rod J, when provided with an extension J′, and arranged to operate with the other parts of a bell-ringing device, substantially as described, and for the purpose specified.

3. The cylinder A, steam-chest B, pipes C D, valve E, piston I, steam-ways G G′, air-passages H H, piston J, tappets L L′, rocker N, rod M, connecting-rod U, crank T, and bell P, when combined and arranged to operate substantially as described, and for the purpose specified.

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Witnesses:
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T. M. KREITZ.