

No. 124,095

Patented Feb. 27, 1872.

Fig. 1.

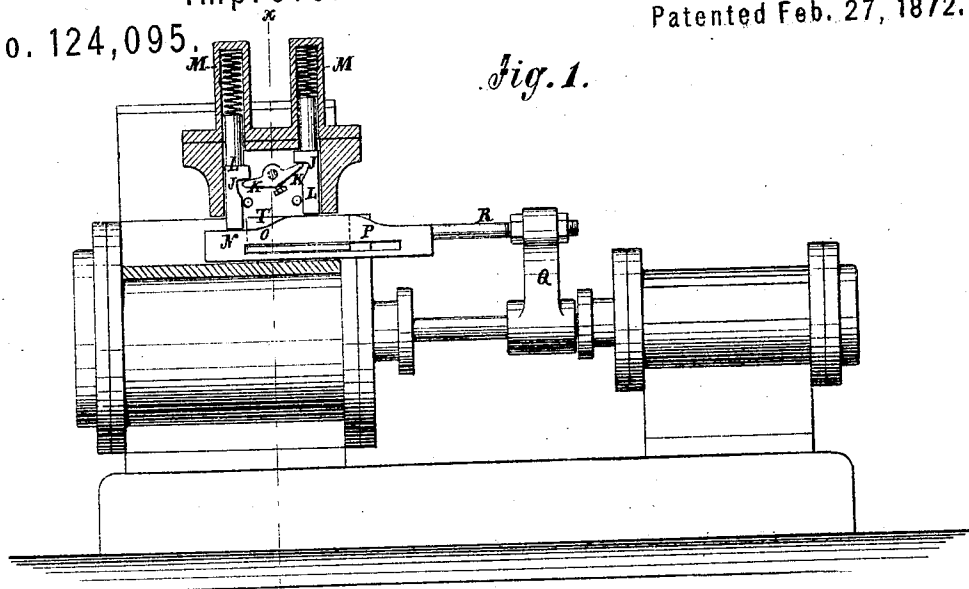


Fig. 2.

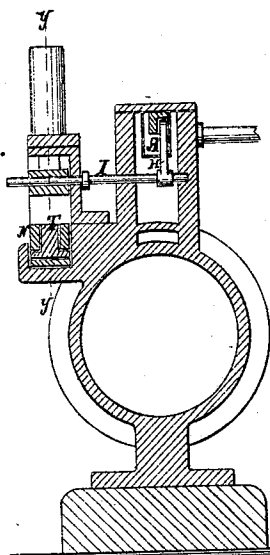


Fig. 4.

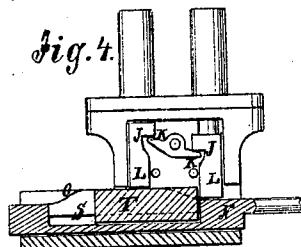
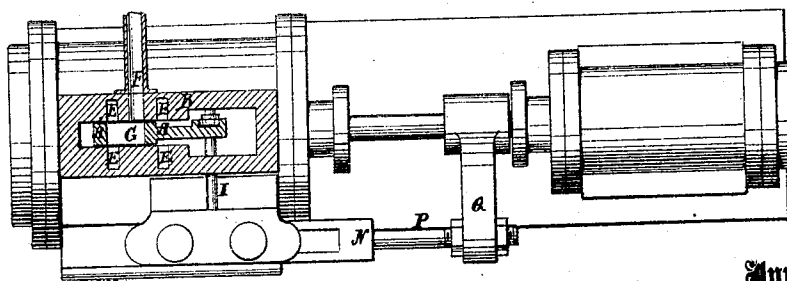


Fig. 3.



Witnesses:

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UNITED STATES PATENT OFFICE.

SAMUEL STANTON, OF NEW YORK, N. Y.

IMPROVEMENT IN STEAM-PUMPS.

Specification forming part of Letters Patent No. 124,095, dated February 27, 1872.

To all whom it may concern:

Be it known that I, SAMUEL STANTON, of New York city, in the county and State of New York, have invented a new and Improved Steam-Pump; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to make and use the same, reference being had to the accompanying drawing forming part of this specification.

My invention relates to improvements in valve-gear for steam-pumps; and it consists in a novel arrangement of apparatus for setting and tripping a couple of springs by which the valve is shifted; the object being to provide a liberating apparatus in connection with a direct-acting steam-pump, whereby the whole movement of the valve in either direction can be effected instantaneously at each end of the stroke.

Figure 1 is a longitudinal vertical sectional elevation of my improved valve-gear. Fig. 2 is a transverse section on the line *xx* of Fig. 1. Fig. 3 is a horizontal section of the valve-chest. Fig. 4 is a vertical longitudinal section on the line *yy* of Fig. 2.

Similar letters of reference indicate corresponding parts.

The valve A is a block, fitted steam-tight between the two sides B C of the chest, which have steam-ports D E in each, while the exhaust F from one side communicates with the elongated hole G through said valve, allowing the exhaust from the ports of both sides. The steam is admitted to the ports at the ends of the valve when passing beyond them, as shown. This valve being so constructed for being balanced as to the action of the steam, is actuated by the crank or arm H, shaft I, tappets K, push-rods L, and the springs M. The springs and the push-rods L are raised and set by the slide N, having the two inclines O P, one for each push-rod, and actuated by the piston-rod, to which it is connected by the arm Q and rod R so as to slide in unison with the piston. This slide N carries a releasing-toe or block, T, in a long slot in its upper side, which block is longer than the distance between the push-rods L, but not as long as the slot S in the sliding block N, in which it is carried. As this re-

leasing-block or toe is carried against the side of the push-rod which rests on the low part of the block N—say, when moving to the left, as indicated in the drawing, the left rod L being on said low part of block N, and the right one on the highest part—the said part will be arrested by the said push-rod and shifted to the right-hand end of slot S, as indicated in the drawing, Fig. 4, at the same time that the left-hand push-rod is raised by the incline of block N passing under it. This slot is so adjusted in the block N that the toe which becomes the support of the right-hand rod L, as the incline of that end of the block N passes beyond it to the left, will pass from under said rod L just at the moment the piston arrives at the end of its movement to the left and release it, to be acted on by its spring and forced down thereby, to shift the valve by carrying the tappet K, which is in its notch J, down, and oscillating rod I, which shifts the valve; at the same time it throws up the tappet K of the other side of shaft I into the notch J of the left-hand rod L ready to be acted on by said rod as soon as it is released in like manner by the movement of the block N and toe T back to the right.

It will thus be seen that a releasing or liberating device actuated by the piston-rod of a direct-acting steam-pump is caused to act at the moment the piston arrives at the end of its stroke, and that the valve so liberated will be instantly shifted throughout the whole extent of its movement.

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

1. The combination with valve A, constructed and balanced as described, of the notched spring-pins J L M, tappets K, shaft I, and crank or cam H, arranged to operate as and for the purpose set forth.
2. The notched spring-rods J L M, combined with the toe T, and a slide, N, provided with two inclines, O P, and slot S, and operated by the piston-rod, as and for the purpose described.

SAMUEL STANTON.

Witnesses:

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