

J. H. TOWNE.
DIRECT ACTION STEAM HAMMER.

No. 7,623.

Patented Sept. 3, 1850.

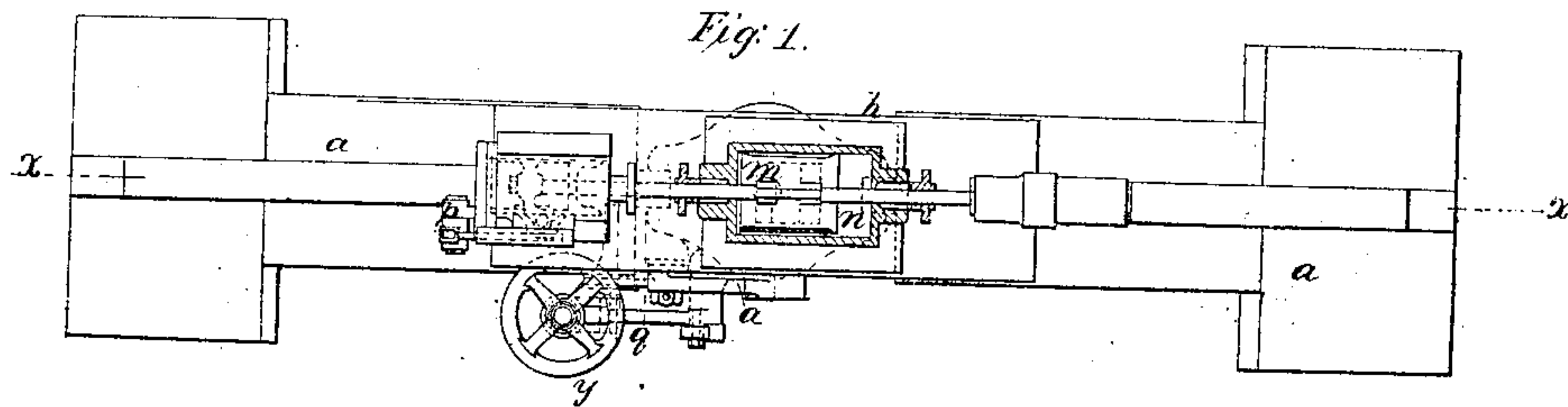
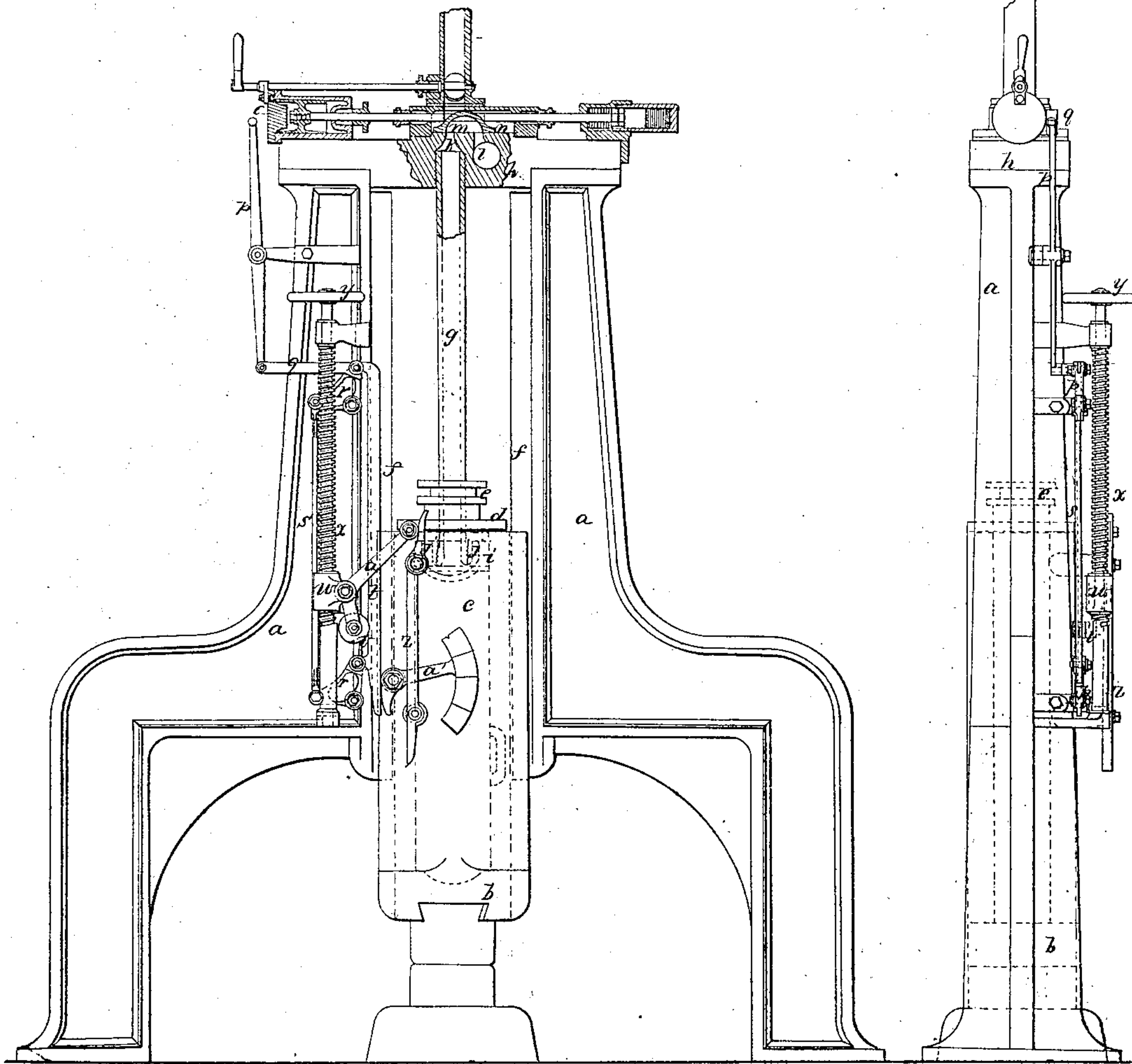


Fig. 3.

Fig. 2.



UNITED STATES PATENT OFFICE.

JOHN H. TOWNE, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR TO S. V. MERRICK.

DIRECT-ACTION STEAM-HAMMER.

Specification of Letters Patent No. 7,623, dated September 3, 1850.

To all whom it may concern:

Be it known that I, JOHN H. TOWNE, of the city and county of Philadelphia and State of Pennsylvania, have invented a new and useful Improvement in the Steam-Hammer, and that the following is a full, clear, and exact description of the principle or character which distinguishes it from all other things before known and of the manner of making, constructing, and using the same, reference being had to the accompanying drawings, making part of this specification, in which—

Figure 1 is a plan; Fig. 2, a side elevation; and Fig. 3, a front elevation, representing some parts in section as taken at the line (*x, x,*) of Fig. 1.

The same letters indicate like parts in all the figures.

My invention is an improvement on the steam hammer for which Letters Patent of the United States were granted to Merrick and Towne, as assignees of James Nasmyth of Great Britain, on the 10th day of April, 1843. In the steam hammer invented as aforesaid by James Nasmyth, the hammer is operated by and is attached to the piston rod of the steam piston, a spring being interposed between the said hammer and piston rod to prevent, as much as possible, the upsetting of the said piston rod by the percussive action of the hammer.

The object of my invention is to avoid the difficulty and inconvenience of interposing such spring, or the very injurious effects of the percussion when the hammer is attached to the piston rod without the interposition of a spring. To this end the nature of my invention consists in combining the hammer with the movable cylinder the steam being admitted and discharged to and from the movable sliding steam cylinder.

In the accompanying drawings (*a*) represents the frame, which is of the usual form, and (*b*) the hammer, the upper end of which at (*c*) is properly formed to constitute a steam cylinder with a head (*d*) provided with a packing box (*e*), surrounding the piston rod in the usual manner of packing piston rods. The cylinder and hammer are formed and adapted to slide on ways (*f, f*) on the frame.

The piston rod (*g*) is tubular, attached permanently at its upper end to the cap (*h*) of the frame, and its lower end properly secured to the piston (*i*) which is made with steam ways (*j, j*) which pass out through its upper surface and communicate with the lower end of the tubular piston rod, that the steam, in passing in, may lift the cylinder and hammer.

The cap (*h*) of the frame is provided with a steam port (*k*) and an exhaust port (*l*) which communicate with the hollow piston rod by means of a slide valve (*m*) in a steam chest (*n*). When the steam is admitted through the valve it passes through the hollow piston rod and, issuing above the piston, lifts the cylinder and hammer, and when the valve opens the exhaust port the escape of the steam permits the cylinder and hammer to descend. The arrangement of machinery for operating the valve, for opening the valve by the rebound of the hammer, and for regulating the opening of the valve to determine the range of motion of the hammer as represented in the accompanying drawings at (*o, p, q, r, s, t, u, v, w, x, y, z,* and *a*¹) is similar to the arrangement contained in the additions made to the Letters Patent above recited for James Nasmyth's invention, and do not therefore need to be described in this specification as it makes no part of my invention.

I contemplate as a substitute for, and equivalent of the mode herein above described of admitting the steam to the sliding cylinder, the employment of a steam pipe made in sections and united universal and sliding joints, to convey the steam to a steam chest provided with a valve or valves in the same manner as in Nasmyth's steam hammer of which this is an improvement.

What I claim as my invention and desire to secure by Letters Patent is—

Attaching the hammer to the sliding steam cylinder, substantially as herein described, the steam being admitted and discharged to and from the sliding steam cylinder, substantially as herein described.

J. H. TOWNE.

Witnesses:

MICHAEL DUNN,
R. K. DARRAH.