S. Barber,

Steam Puppet Valve.

No. 3,552. Patented Apr. 20, 1844

Fig 1

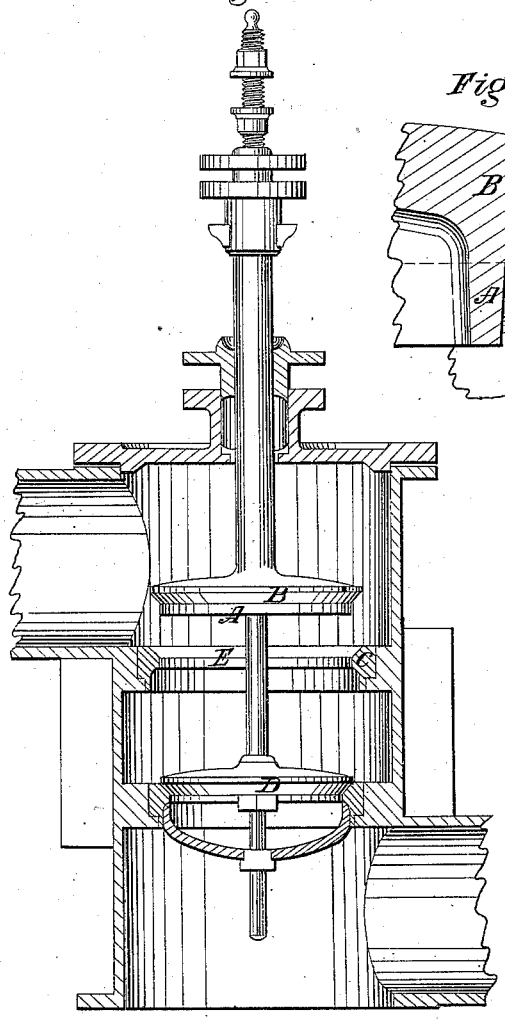


Fig 4

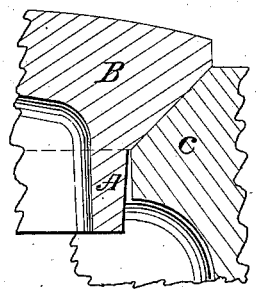
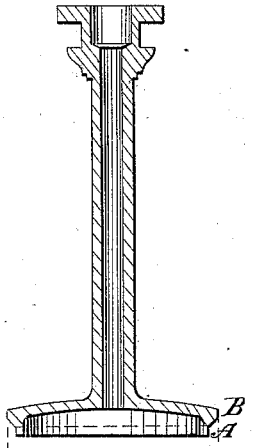


Fig 2



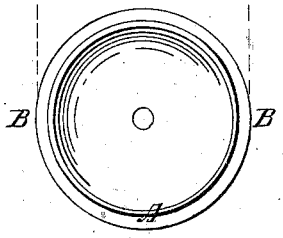


Fig 3

UNITED STATES PATENT OFFICE.

SPRAGUE BARBER, OF NEW YORK, N. Y.

CONICAL-SEAT STEAM-VALVE.

Specification of Letters Patent No. 3,552, dated April 20, 1844.

To all whom it may concern:

Be it known that I, SPRAGUE BARBER, of the city, county, and State of New York, have invented a new and useful Improvement on Steam-Valves for Steam-Engines; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the annexed drawings, making a part of this specification, in which—

Figure 1 is a vertical section of the steam chest, exhibiting one exhaust, and one steam valve, and also what I denominate a check ring, or check plate. Fig. 2 is a view of the steam valve, showing more distinctly the check ring. Fig. 3 is a view of the check ring and under side of the valve. Fig. 4 is on a larger scale, and shows a section of the valve, valve seat, and check ring.

The same letters in the different figures refer to the same parts.

A is the check ring, which constitutes this improvement.

B is the steam valve; C, the valve seat; D, the exhaust valve; E, the opening through which steam passes into the cylinder.

The object of this invention is to control or regulate more perfectly the quantity of steam which is allowed to pass into the cylinder while the engine is passing the centers, and thereby relieve it of much unnecessary friction and from the unpleasant, injurious, destructive shock or jar which is usual, especially on board of steam boats. In order to accomplish this object, the piston should not be suddenly loaded with the full pressure, but the pressure of steam should be as nearly equal as possible, on each side of the piston, while the crank is at that point of its revolution where it can produce no beneficial results, but where on the contrary, the greater the pressure on the piston, the greater will be the obstruction to its progress, (arising from additional friction,) in performing its revolutions, viz at the dead centers. The check ring should therefore fill the opening E, less ($\frac{1}{16}$) one-sixteenth of an inch all around, through which space only should the steam be allowed to pass into the cylinder, until after the crank has passed the center. The check ring, for a valve of twelve inches in diameter, should be ($\frac{3}{4}$,) three fourths of an inch in depth or thickness and in that proportion for a larger or smaller valve. It may be secured to the steam valve by bolts, or cast at the same time with it, forming a part of the original shape of the valve. This construction has recently been practically demonstrated on several large engines to allow a sufficient quantity of steam to pass around the edge of the check ring when the valve is first raised from its seat to fill the vacuum previously formed in the cylinder by the condenser, while at the same time it checks the full impulse of the steam until the crank is in a position to receive it without injurious effects, thereby enabling the engines to perform their labor with much more perfect ease, and facility than heretofore, with any other arrangement.

I do not claim the steam valve.

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

The check ring used in connection with the steam valve substantially as herein described.

SPRAGUE BARBER.

Witnesses:

B. TUCKER,

DUNCAN TURNER.