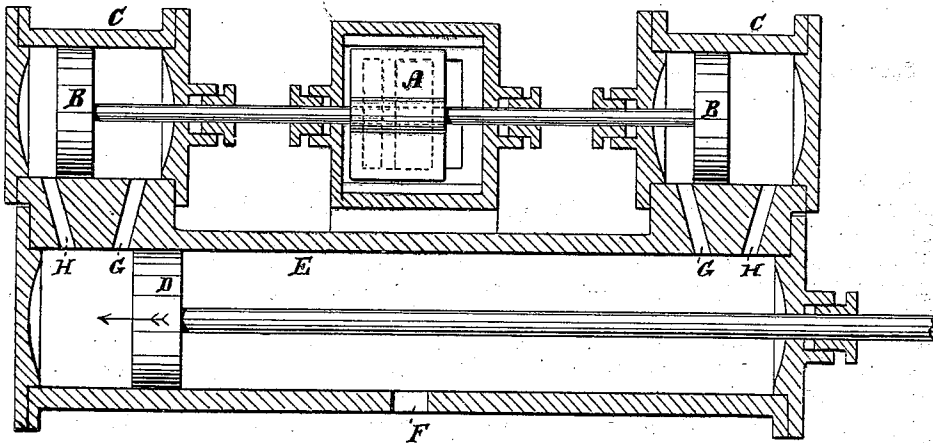


G. RICKERT.
Valve-Motions.

No. 153,784.

Patented Aug. 4, 1874.



WITNESSES:

A. Penneken
A. Sedgwick

INVENTOR:

G. Rickert

BY

Wm. H. ...

ATTORNEYS.

UNITED STATES PATENT OFFICE.

GEORGE RICKERT, OF ECKLEY, PENNSYLVANIA.

IMPROVEMENT IN VALVE-MOTIONS.

Specification forming part of Letters Patent No. **153,784**, dated August 4, 1874; application filed June 6, 1874.

To all whom it may concern:

Be it known that I, GEORGE RICKERT, of Eckley, in the county of Luzerne and State of Pennsylvania, have invented a new and Improved Valve-Motion, of which the following is a specification:

My invention consists of an air-pump so combined with pistons for working the steam-valve that air is compressed in the cylinder of the valve-pistons on both sides until the moment it is required to have the valve shift, when one side of the valve-piston is opened to the exhaust, and the piston is instantly thrown by the compressed air on the other side, thus producing an instantaneous motion of the valve by the aid of compressed air.

The drawing is a longitudinal sectional elevation of a valve motion contrived according to my invention.

A represents the steam-valve, having a piston, B, and cylinder C at each end for working it by means of compressed air, to be applied by the piston D of the pump-cylinder E, the pump being connected to the cross-head of the engine to be worked by it. The cylinder E is open to the atmosphere at the passage F, and connects at each end with one of the valve-cylinders by the ports G H, which

enter at the opposite ends. When the piston D passes the middle passage F it compresses the air in front of it in the cylinder of the valve-piston on both sides of the latter, but when it passes port G just before coming to the end of its stroke it opens that end of cylinder C to the atmosphere, allowing the compressed air to escape and permitting the valve to be shifted by the still confined air in the other end of the cylinder. The passage F may be arranged to extend and contract along the cylinder to vary the point at which the compression begins, for regulating the force applied to the valve-pistons, if necessary, or other contrivances may be employed for the same purpose.

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

The described combination, with steam-valve A, of the two pistons B B, connected therewith and with each other, the cylinders C C, and the air-pump having ports F G H and piston D, all arranged as shown and set forth.

GEORGE RICKERT.

Witnesses:

FRANCIS WEISS,
R. LEISENRING.