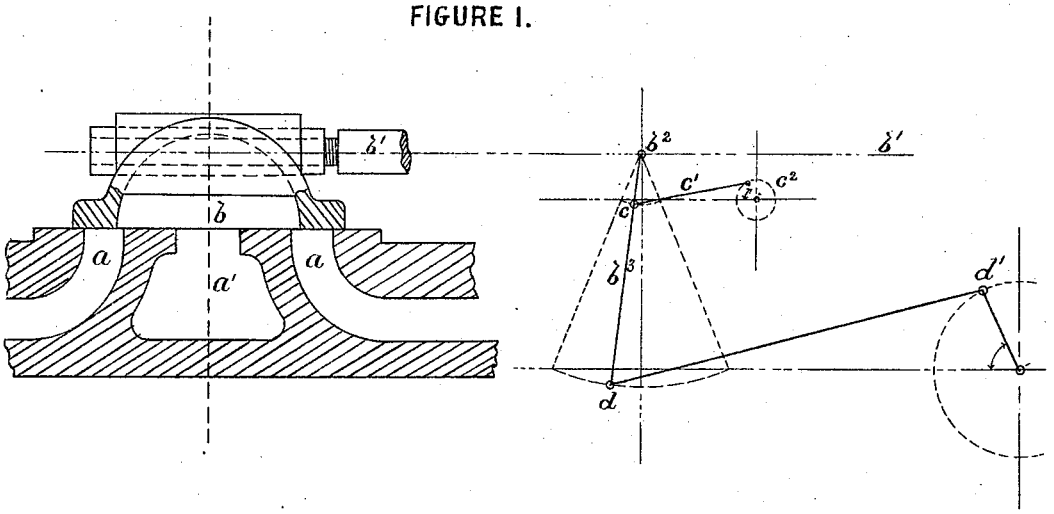
2 Sheets—Sheet 1.

G. A. C. BREMME.

VALVE GEAR.

No. 181,242. Patented Aug. 22, 1876.

FIGURE I.



INVENTOR.

Gustav Albrecht Carl Bremme.

WITNESSES:

Frederick John Cheesbrough.

John Hamilton Redmond

2 Sheets—Sheet 2.

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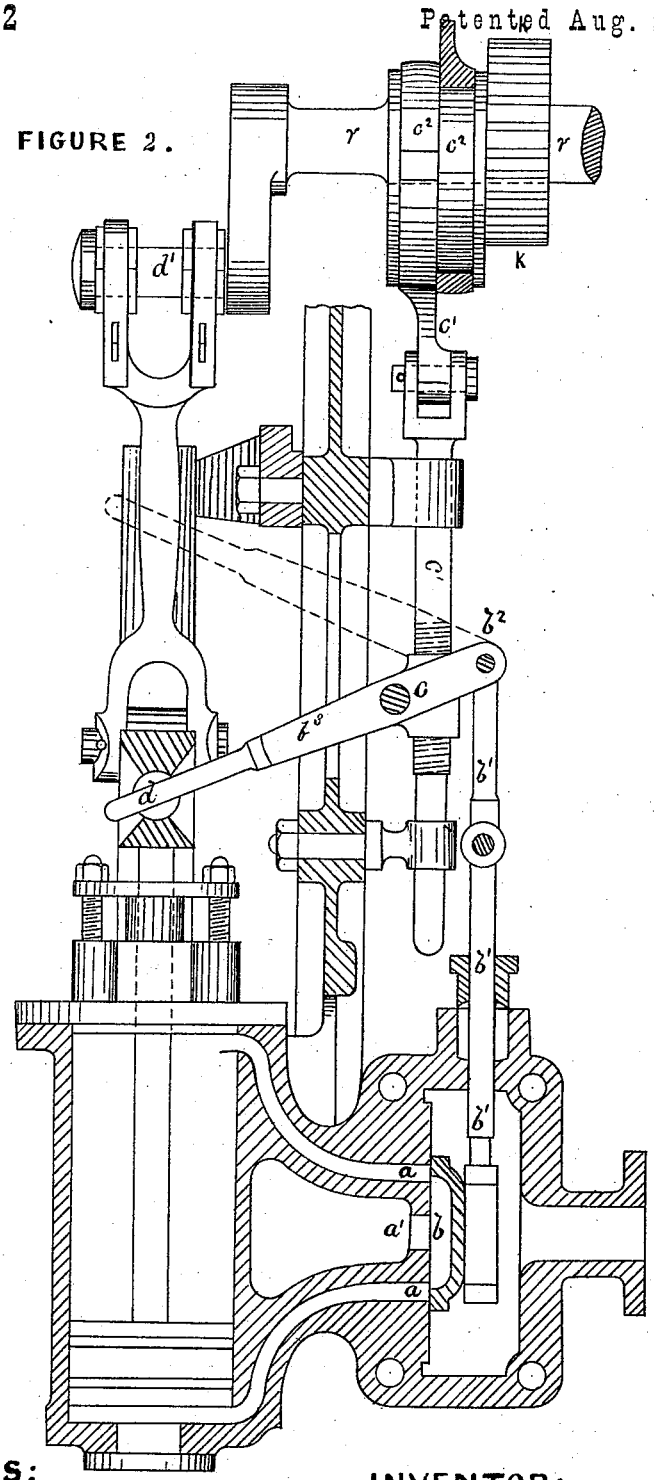
FIGURE 2.



WITNESSES:

Frederick John Cheesbrough

John Hamilton Redmond

INVENTOR:

Gustav Albrecht Carl Bremme

UNITED STATES PATENT OFFICE.

GUSTAV. A. C. BREMME, OF LIVERPOOL, ENGLAND.

IMPROVEMENT IN VALVE-GEARS.

Specification forming part of Letters Patent No. **181,242**, dated August 22, 1876; application filed July 25, 1876.

To all whom it may concern:

Be it known that I, GUSTAV ALBRECHT CARL BREMME, of Liverpool, in the county of Lancaster, in that part of the United Kingdom of Great Britain and Ireland called England, have invented a new and useful Improvement in Valve-Gear, which improvement is fully set forth in the following specification, reference being had to the accompanying two sheets of drawings, on which like letters and figures denote corresponding parts.

Figure 1, Sheet 1, illustrates my improved valve gear or motion by diagram. Fig. 2, Sheet 2, is a sectional elevation, showing my improved valve-gear or motion in detail.

This invention relates to a new gear or motion for working the slide and other descriptions of valves of steam and other motive-power engines and steam-pumps, and is also particularly adapted for working steam-steering gear; and consists in actuating the valve spindle or rod by means of a lever, which is attached at one end to the valve spindle by means of a link, and at the other end to the piston-rod of the engine by means of a link or stud. The lever is pivoted at a point near its attachment to the valve-spindle to a sliding rod or lever, which has a fixed travel, and is actuated by an eccentric. The arrangement is that the travel of the aforesaid sliding rod or lever opens the steam-port, whereby the piston is set in motion, and the travel of the piston tends to close the steam-port, and actually closes the steam-port when the aforesaid slide rod or lever ceases to move.

The action of the gear consists in changing the fulcrum of the lever, namely, that when the piston-rod is actuating the valve the fulcrum of the lever is between the valve-spindle and the piston-rod, and when the valve is actuated by the eccentric, the point of attachment to the piston-rod becomes the fulcrum of the lever.

Upon reference to Fig. 1, Sheet 1, and Fig. 2, Sheet 2, a represents the steam-ports of a cylinder; a', the exhaust of same; b, slide-valve; b^1, slide-valve spindle. It may be presumed that the valve-spindle b^1 works between fixed guides on the dotted line, as indicated. b^2 is the point of attachment for the lever b^3. The lever b^3 is attached at c to the rod c^1, worked by the eccentric or crank c^2. The lever is attached at d to the piston-rod of the engine or the crank d^1, by means of a connecting-rod. Assuming the crank or eccentric c^2 and the crank d^1 are parallel, and remain parallel during the stroke, the valve b remains stationary on the center; but when the crank or eccentric c^2 is in advance of the crank d^1 the proper motion is given to the valve, as will be understood by any person acquainted with the working of slide-valves upon studying the diagram.

Having thus described the nature and construction of my invention, what I desire to secure by Letters Patent is—

In a valve-gear, the lever b^3, pivoted to and in combination with the rod c^1, which is held and worked by the eccentric c^2, the point d of the lever being attached to and worked by the piston-rod or crank of the engine, the point d^2 of the lever being attached to and working the slide-valve b of the engine, substantially as set forth.

In witness whereof I, the said GUSTAV ALBRECHT CARL BREMME, have hereunto set my hand and seal this 26th day of May, in the year of our Lord one thousand eight hundred and seventy-five.

GUSTAV ALBRECHT CARL BREMME. [L. S.]

Witnesses:

FREDERICK JOHN CHEESBROUGH,
JOHN HAMILTON REDMOND,
Both of 15 *Water street, Liverpool, England.*