(No Model.)

W. C. CHURCH.

CIRCULAR SLIDE VALVE.

No. 316,237. Patented Apr. 21, 1885.

Fig. 1.

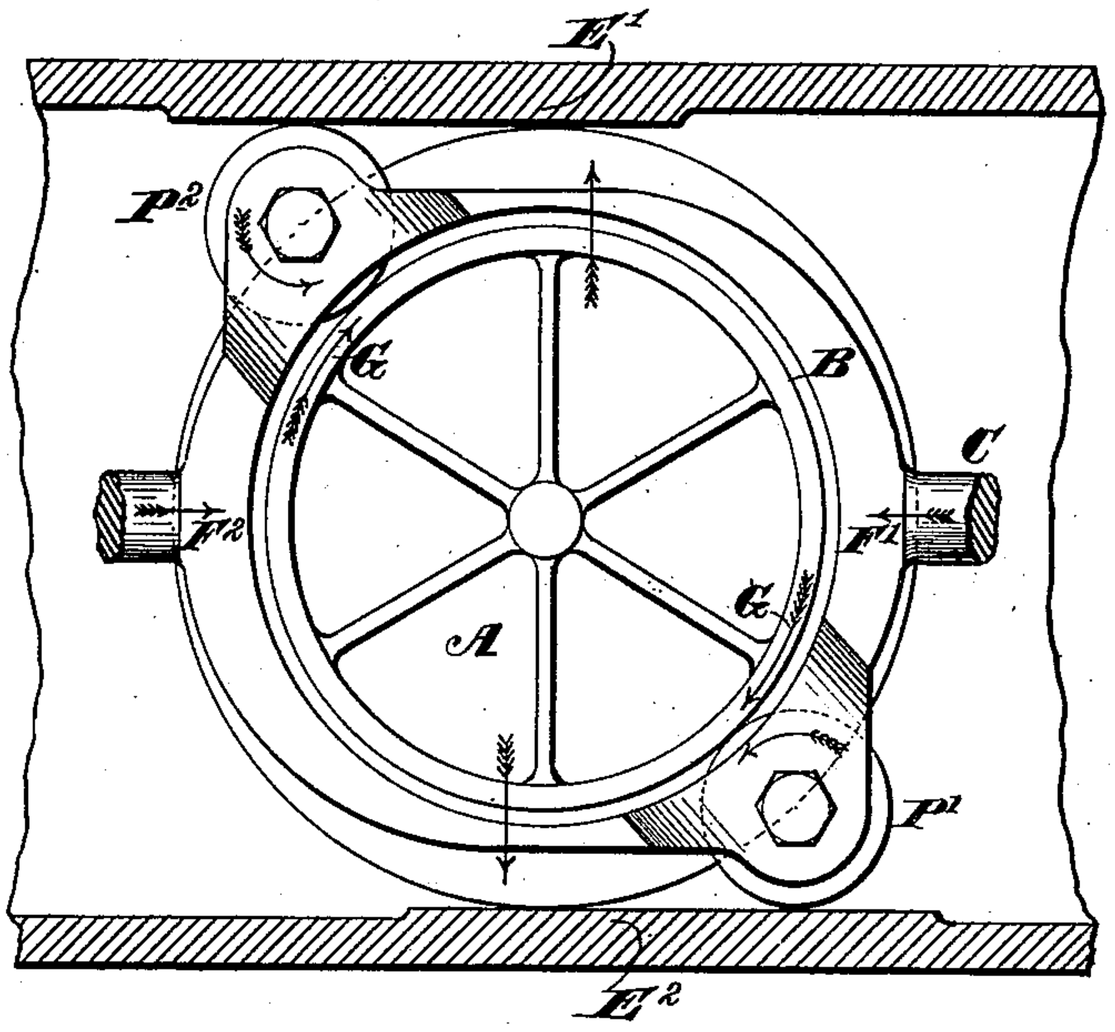
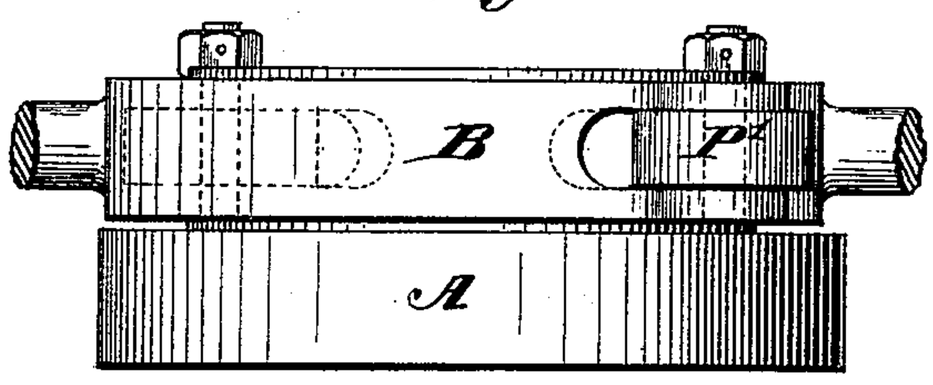


Fig. 2.



Witnesses.
Robt Everett.
J. A. Rutherford

Inventor.
Walter C. Church.
By James L. Norris.
Atty.

UNITED STATES PATENT OFFICE.

WALTER CHARLES CHURCH, OF BRIXTON, COUNTY OF SURREY, ENGLAND.

CIRCULAR SLIDE-VALVE.

SPECIFICATION forming part of Letters Patent No. 316,237, dated April 21, 1885.

Application filed February 5, 1885. (No model.) Patented in England January 21, 1880, No. 266; in France July 7, 1880, No. 137,676; in Germany July 16, 1880, No. 13,194; in Belgium July 29, 1880, No. 52,153, and in Austria October 30, 1880, No. 4,187.

To all whom it may concern:

Be it known that I, WALTER CHARLES CHURCH, a citizen of England, residing at Brixton, in the county of Surrey, England, have invented a new and useful Improvement in Circular Slide and Sluice Valves, (for which I have obtained patents in Great Britain, dated January 21, 1880, No. 266; France, dated July 7, 1880; Belgium, dated July 29, 1880; Austria, dated October 30, 1880, and Germany, dated July 16, 1880,) of which the following is a specification.

Slides for governing ports of steam-cylinders and other passages for fluid have been made of circular form, the ports or passages which they govern being made of crescent or like suitable shape, so that the circular edges of the slide, as it moves rectilinearly to and fro, cover and uncover them in a manner similar to that in which a rectangular slide operates. Such circular slides are held in a circular loop or eye of the slide-rod which moves them, being free to turn round in such loop or eye, so that when any roughness or irregularity in the rubbing surfaces of the slide and of the facing on which it works presents itself, or when there is any tendency to cohesion at any part of these surfaces, the slide may, while it moves rectilinearly, turn partly round its own axis, and thereby bring fresh portions of the surfaces to bear against each other. As the chief object to be attained by the use of such circular slides is to insure, by their turning round, equalization of wear and to prevent the formation of ridges and hollows in the rubbing surfaces, and as such turning round is uncertain and precarious when it depends only on accidental inequalities, I, according to this invention, so construct and arrange the slide and the eye or loop in which it is held that at every to-and-fro stroke of the slide it is caused to turn partly round, always in one direction, and thus I insure a continual change of the parts of the surfaces which rub against each other.

To accomplish this, my invention consists in the construction and combination of devices hereinafter described and claimed, reference being made to the accompanying drawings, in which—

Figure 1 is a plan view of a circular slide with the loop or eye constructed in accordance with my invention, and Fig. 2 a side elevation of the same.

Referring to the drawings, the letter A indicates the circular slide, which has its boss inclosed in the eye or loop B of the slide-rod C, by the reciprocation of which the slide is moved to and fro over the port-faces. The slide-jacket is constructed with two opposite straight surfaces, E′ E², almost touching the circular flange of the slide.

The eye or loop B has mounted on it two opposite rollers, P′ P², which cause the partial revolution of the slide at each stroke. Thus when the slide-rod moves in the direction of the arrow F′ the roller P′ is made to bear against the surface E², and also against the boss of the slide, pushing the flange of the slide against E′, and the frictional contact of the roller with the slide-boss and of the side flange with E′ conspire to cause partial rotation of the slide in the direction of the arrows G. When again the slide-rod moves in the direction F², the roller P² operates in a similar manner, causing further rotation of the slide in the same direction as before.

Having thus described my invention, what I claim is—

The combination of the circular slide A and the loop or eye B of the slide-rod, having two diagonally-opposite rollers, P′ P², with the two opposite rolling faces E′ E of the slide-jacket, substantially as described.

In testimony whereof I have signed my name to this specification, in the presence of two subscribing witnesses, this 6th day of January, A. D. 1885.

W. C. CHURCH.

Witnesses:
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