G. G. LAFAYETTE & P. W. STRONG.

REVERSIBLE ECCENTRIC.

No. 191,602. Patented June 5, 1877.

Fig. 1

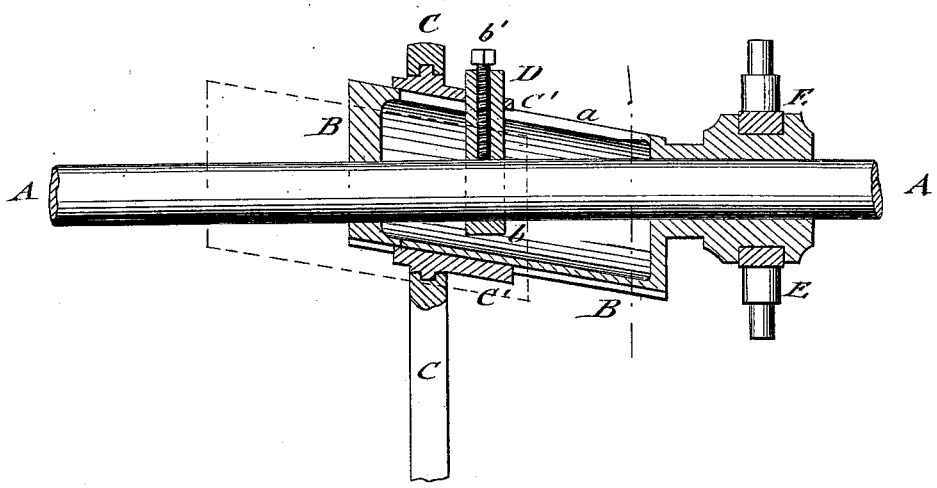


Fig. 2

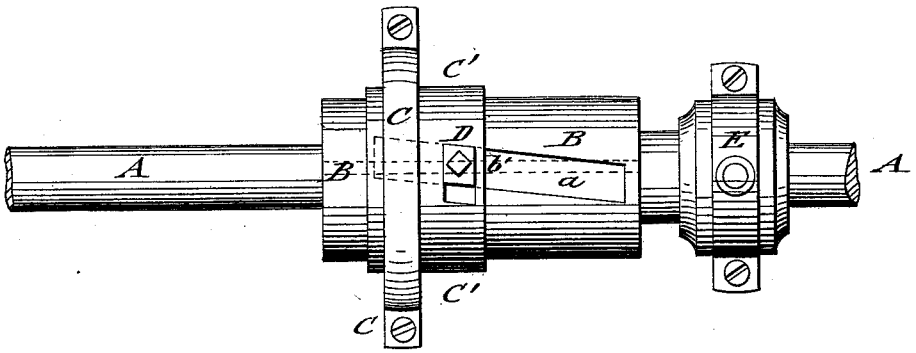
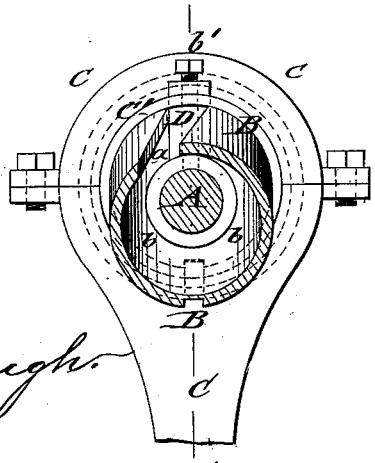


Fig. 3.



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GEORGE G. LAFAYETTE AND PITT W. STRONG, OF BROCKVILLE, ONTARIO, CANADA.

IMPROVEMENT IN REVERSIBLE ECCENTRICS.

Specification forming part of Letters Patent No. **191,602**, dated June 5, 1877; application filed April 30, 1877.

To all whom it may concern:

Be it known that we, GEORGE GARDINER LAFAYETTE and PITT WILLIAM STRONG, of Brockville, in the Province of Ontario and Dominion of Canada, have invented a new and Improved Reversible Eccentric, of which the following is a specification:

In the accompanying drawing, Figure 1 represents a vertical longitudinal section of our improved reversible and adjustable eccentric; Fig. 2, a top view, and Fig. 3 a vertical transverse section of the same.

Similar letters of reference indicate corresponding parts.

The invention relates to an improved device which is to act as a substitute for the link-motion on a reversible engine, or for adjusting the stroke of a boiler-feed pump, while in motion, so as to regulate the amount of feed-water supplied to the boiler, without the use of an overflow pipe and cock, and keeping thereby the pump constantly in motion, which will save the annoyance frequently experienced in pumps by their refusing to prime after having been stopped for a short time.

The device may be further used to control the speed of all kind of engines, whether with plain slide-valve or with a cut-off valve working on top of the other by connecting directly to the device a suitable governor, so as to automatically shorten and lengthen the stroke of the valve, and give a uniform motion to the engine under different loads.

The invention consists, essentially, of the use of a disk or eccentric that is placed upon the main shaft in connection with a sliding and slotted cylindrical or other incline, so as to be moved at will to one side or the other of the shaft and work it thereby either as an eccentric or disk, at pleasure.

Referring to the drawing, A represents the main shaft of an engine. B is a movable sheave or cylinder, whose axis is placed at a suitable angle of inclination to that of the shaft. C is an eccentric or disk, placed on a collar, C′; and D a key or pin by which the collar of the eccentric or disk is rigidly secured to shaft, and held firmly in place as far as the longitudinal direction is concerned. A collar or ring, E, is secured to the end of the incline B, and provided with a lever or other suitable device, for the purpose of moving the same on the shaft.

The incline may also be of oval, square, or other shape, and may be fixed on the shaft, in which case the disk or eccentric has to be made movable thereon.

The incline is provided with straight, or preferably spiral, slot or slots *a*, which, if two slots are used instead of one, are placed at diametrically opposite sides, by which it passes along the fixed pin or key D, the spiral slot or slots giving the valve the same lead on the reverse as it does in forward motion. The key or pin D is formed of a collar or ring, *b*, that extends around shaft, and has one or two arms extending out through the slot or slots of the incline or sheave, of which one or both are secured to the shaft by set-screws *b′* passing centrally through the arm or arms, so as to allow the eccentric to be set at will, and obviate the necessity of making a hole through the shaft and weakening the same. The key D passes through the collar C′ of the eccentric and through the slot *a* of the incline, so as to guide the incline steadily thereon when moved in either direction by the hand-lever, governor, or other equivalent device, and change thus the throws of the eccentric.

The position of the incline on the shaft may be changed, and thereby the position of the eccentric at one or the opposite side of the shaft, produced so as to reverse the motion of the engine or regulate the stroke of a boiler-feed pump for controlling the amount of feed-water to the boiler, while the engine is in motion, or for controlling the speed of engines, by a governor attachment to the incline, so as to give uniform motion, the device forming a simple, reliable, and effective substitute for the link-motion, and a conveniently-adjusted reversible eccentric for engines.

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

1. The combination, with the main or countershaft of an engine or other machine requiring an adjustable or reversible eccentric, of a sliding and slotted incline and fixed eccentric or disk, so placed thereon as to be thrown at

will to one side of the center of the shaft, or to the opposite side of the same, substantially in the manner and for the purpose set forth.

2. The combination of a sliding and slotted incline, placed at a suitable angle to the shaft, with a fixed eccentric or disk and fastening pin or key, secured firmly to axle, substantially as specified.

3. The combination of the shaft A, sliding and slotted incline B, eccentric or disk C, having fixed collar C′, and fastening pin or key D, secured firmly to shaft, substantially as set forth.

4. The combination of the shaft A and eccentric or disk C with the pin or key D passing through collar around the shaft, and extending beyond said collar and shaft, and being secured by a set-screw passing through arm of pin and collar, substantially as specified.

GEORGE GARDINER LAFAYETTE.
PITT WILLIAM STRONG.

Witnesses:
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