G. H. REYNOLDS.

Valve for Steam-Engine.

No. 162,690. Patented April 27, 1875.

Fig. 1.

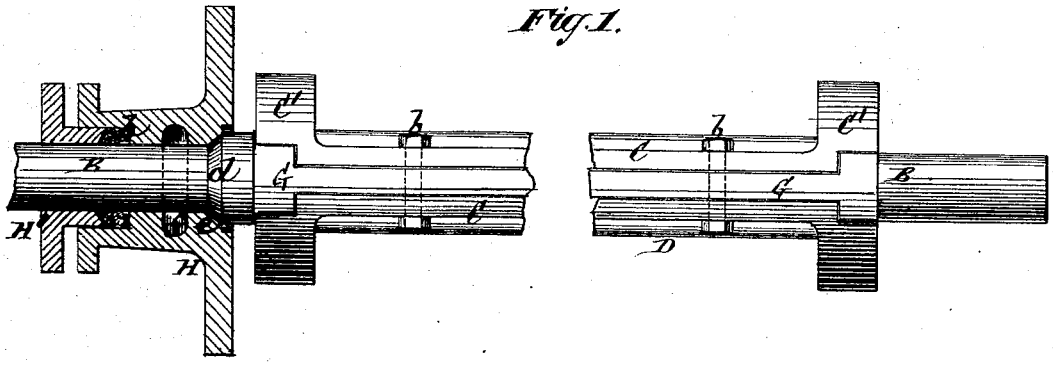


Fig. 2.

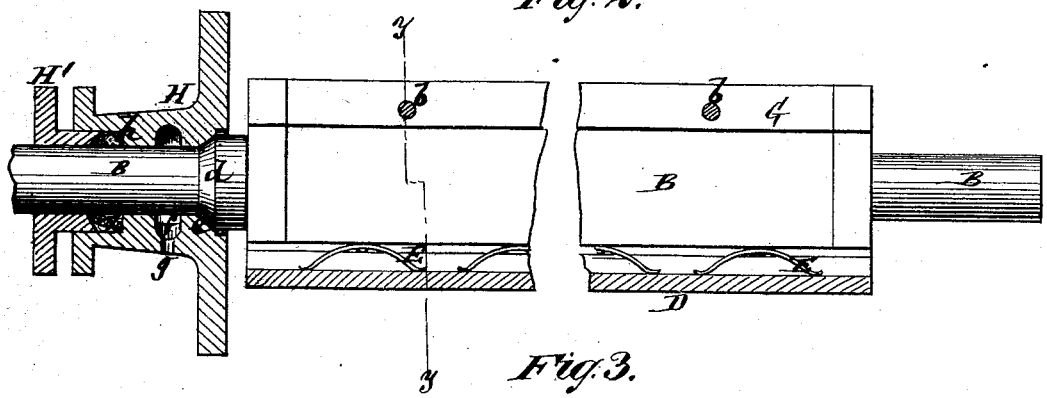
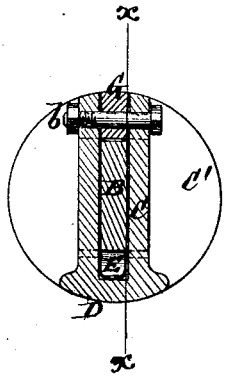


Fig. 3.



Witnesses
John Becher
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by his Attorneys
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UNITED STATES PATENT OFFICE.

GEORGE H. REYNOLDS, OF NEW YORK, N. Y., ASSIGNOR OF ONE-HALF HIS RIGHT TO CORNELIUS H. DELAMATER AND GEORGE H. ROBINSON, OF SAME PLACE.

IMPROVEMENT IN VALVES FOR STEAM-ENGINES.

Specification forming part of Letters Patent No. **162,690**, dated April 27, 1875; application filed March 4, 1875.

To all whom it may concern:

Be it known that I, GEORGE H. REYNOLDS, of the city, county, and State of New York, have invented certain new and useful Improvements in Valves of Steam-Engines; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawing, forming part of this specification.

This invention relates to valves of the character used in what is known as the Corliss engine; and it consists in the novel construction of such a valve, whereby the cutting of shoulders in the valve and its seat are prevented, and the necessary freedom is given to the valve on its spindle, while both valve and spindle are preserved against injury by torsion.

Figure 1 represents a longitudinal view of the valve, with the stuffing-box in section. Fig. 2 is a longitudinal section of the same at right angles to the former figure, on the line *x x;* and Fig. 3, a transverse section on the line *y y*.

The valve, which is an oscillating or rolling segmental one, has its stem B fitted in a slotted portion, C, of the body of the valve D, and is arranged to rest on springs E, whereby the valve has freedom to adjust itself in all directions. After the stem B has thus been fitted within the slotted portion C of the body of the valve, said slot is closed longitudinally by a filling-piece, G, and bolts *b b* passed through the body of the valve and through the filling piece or strip G. This is important, inasmuch as it gives rigidity to the valve against any or all torsional effect. The heads or ends C′ of the valve are not cut away, nor the valve-seat recessed for their reception, but said heads are made continuously circular, whereby not only the cutting of shoulders is avoided, but the valve has a bearing all round at its ends within the valve-chest. This, too, is an important feature in the construction of the valve. The operating or driving trunnion, like portion of the valve-stem, is constructed with a tapering or conical shoulder, *d*, which fits within a correspondingly shaped recess, *e*, of a stuffing-box, of which H is the bearing portion. This stuffing-box is constructed with an internal cavity, *f*, having an aperture, *g*, whereby it is connected with the condenser of the engine, thereby providing for the perfect exhaustion of any steam or water of condensation that said cavity may collect. The conical shoulder *d*, however, prevents, so far as practicable, the escape of steam from the valve chest or chamber.

To prevent the ingress of air to the engine through the valve-chest, or to the condenser by the cavity *f*, when the valve is open to the exhaust, the stuffing-box H is fitted at its outer end with a gland, H′, which, together with the bearing portion H, forms the complete stuffing-box, having packing *h*.

I claim—

1. In a rolling or oscillating valve, the combination of continuously circular heads C′ C′, with the slotted portion C, loosely fitting stem B, and filling-piece *b*, substantially as and for the object specified.

2. The combination of the filling piece or strip G, with the slotted portion C of the body of the valve, the bolts *b*, and the loosely fitted stem B, essentially as specified.

GEO. H. REYNOLDS.

Witnesses:

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