(No Model.)

G. L. HOXSIE.

VALVE GEAR.

No. 335,199. Patented Feb. 2, 1886.

Fig. 1.

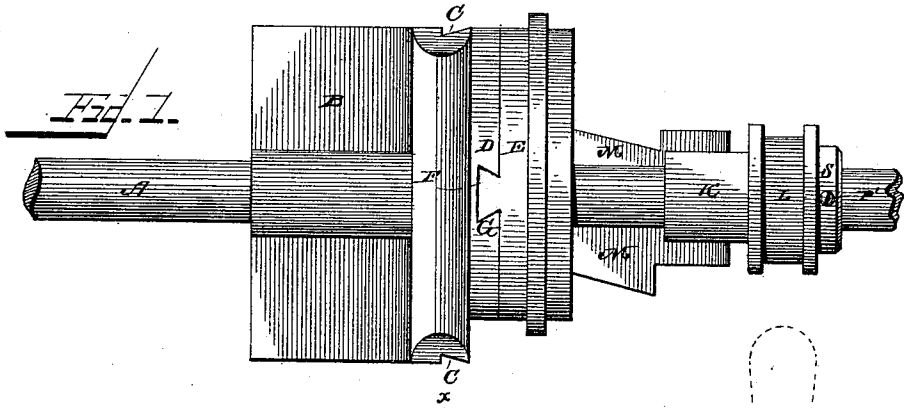


Fig. 2.

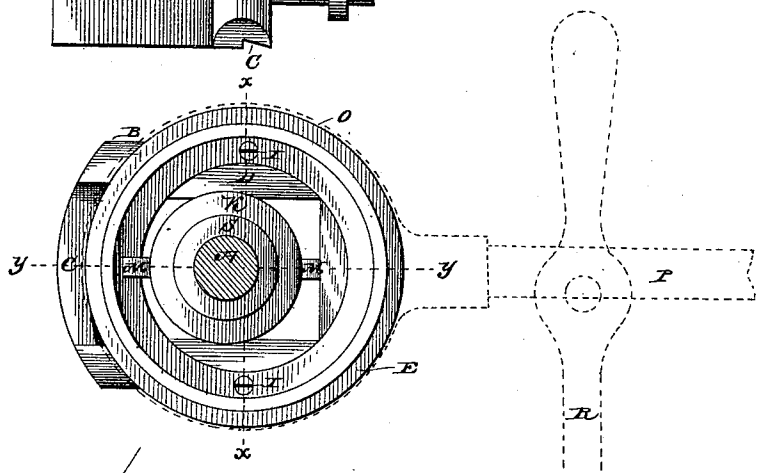


Fig. 3.

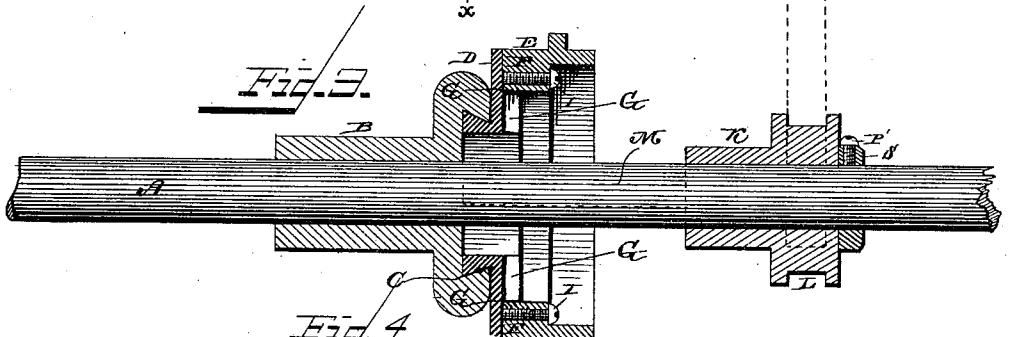
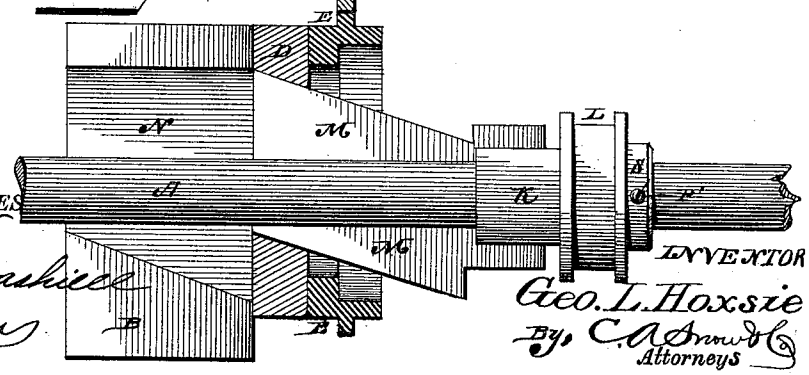


Fig. 4.



WITNESSES

D. W. Sackett

H. W. Garner

INVENTOR

Geo. L. Hoxsie

By, C. A. Snow & Co

Attorneys

N. PETERS, Photo-Lithographer, Washington, D. C.

UNITED STATES PATENT OFFICE.

GEORGE L. HOXSIE, OF HOLLOWAY, MICHIGAN.

VALVE-GEAR.

SPECIFICATION forming part of Letters Patent No. 335,199, dated February 2, 1886.

Application filed May 16, 1885. Serial No. 165,750. (No model.)

To all whom it may concern:

Be it known that I, GEORGE L. HOXSIE, a citizen of the United States, residing at Holloway, in the county of Lenawee and State of Michigan, have invented a new and useful Improvement in Valve-Gears for Steam-Engines, of which the following is a specification, reference being had to the accompanying drawings.

My invention relates to an improvement in valve-gears for steam-engines; and it consists in the peculiar construction and combination of devices, that will be more fully set forth hereinafter, and particularly pointed out in the claim.

In the accompanying drawings, Figure 1 is a plan view of my improved valve-gear. Fig. 2 is an end elevation of the same. Fig. 3 is a sectional view taken on the line *x x* of Fig. 2. Fig. 4 is a sectional view taken on the line *y y* of Fig. 2.

A represents the crank-shaft of the engine, to which is secured a block or head, B, which is provided with a transverse grooved way, C, in one end, in which way slides an eccentric collar, D. To the collar D, on one side, is secured an annular collar, E, having tongues F on its inner face, which tongues slide in grooves G, that are made in the opposing face of the eccentric collar D. Set-screws I pass through the inner flange of the collar E, and through the tongues thereof, and bear in the grooves G. By this means it will be readily understood that the collar E may be moved across the face of the eccentric collar D, and secured thereto at any desired point, so as to give the amount of "lead" wanted. The ways C of the head B will be provided with a gib in order to compensate for wear. On the shaft A slides a collar, K, the outer end of which is grooved, as at L. To the inner projecting end or sleeve of this collar are secured rearwardly-extending arms M, which have their outer edges inclined diagonally with relation to the longitudinal axis of the crank-shaft, the diagonal edges of the arms being parallel to each other, as shown. Central openings are made in the collar E, and in the eccentric collar D, for the reception of the arms M, and in the block B is also formed an opening, N, which is shaped correspondingly to the diagonal edges of the arms M, so as to receive said arms. The opening in the eccentric collar D is likewise so formed, and by this construction it will be readily understood that by moving the collar K on the shaft the eccentric collar can be moved upon the crank-shaft for the purpose of regulating or reversing the engine.

The ring or collar E is encircled by the ordinary eccentric strap, O, upon the end of the valve-rod P.

The collar K is moved upon the crank-shaft by means of a fulcrumed lever, R, having a forked end engaging with the groove L in the collar. The movement of the collar K upon the shaft is limited by a ring or shoulder, S, which is secured to the shaft by a set-screw, P'. The stroke of the valve may be regulated by moving the eccentric collar to any desired extent; or the motion may be stopped by moving the collar K midway of the length of its plate, as will be readily understood by those skilled in the art to which this invention appertains.

Having thus described my invention, I claim—

The combination of the crank-shaft, the head secured thereto and having the grooved way C across its face, the eccentric collar D, having a tongue fitting in way C, to permit the collar to slide across the head, and the grooved ways G on its outer face, at right angles to way C, the ring E, for the eccentric strap, having tongues F, that work in ways G, to permit the ring to slide across the collar, and screws I, bearing in ways G, to clamp the ring to the collar, and the sliding collar K on the shaft, having arms M, provided with parallel diagonal outer edges, and working in openings in the head and collar D, to shift the collar on the head, substantially as described.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in presence of two witnesses.

GEORGE L. HOXSIE.

Witnesses:
DAVID A. BIXBY,
EMMA L. BIXLEY.