(No Model.)

H. T. PORTER.

CUT-OFF AND REVERSING VALVE GEAR.

No. 266,882. Patented Oct. 31, 1882.

Fig. 1.

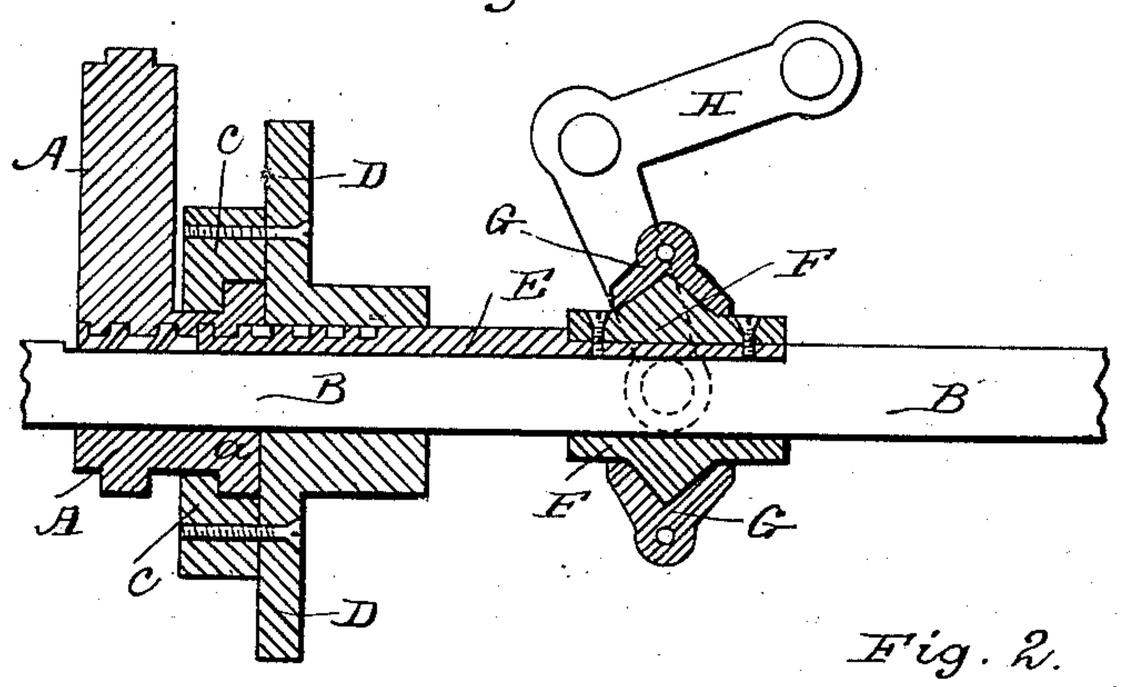


Fig. 2.

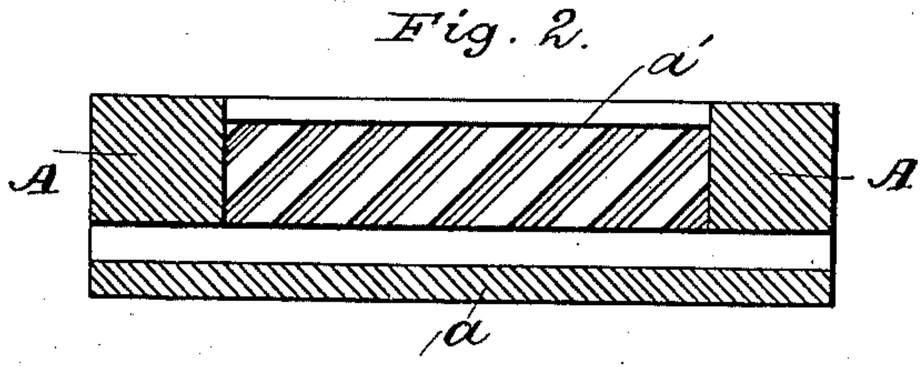


Fig. 3.

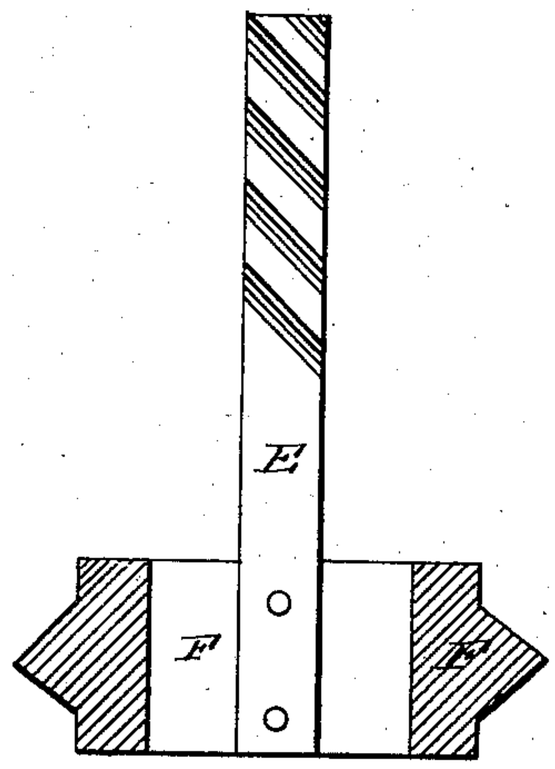
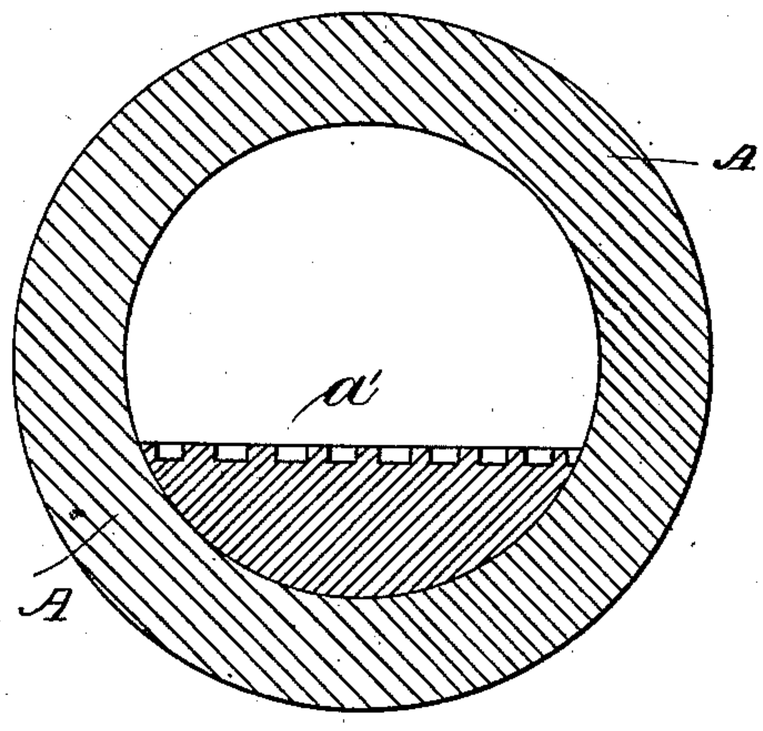


Fig. 4.



Witnesses:

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UNITED STATES PATENT OFFICE.

HUGH T. PORTER, OF AUBURN, NEW YORK.

CUT-OFF AND REVERSING VALVE-GEAR.

SPECIFICATION forming part of Letters Patent No. 266,882, dated October 31, 1882.

Application filed June 28, 1882. (No model.)

To all whom it may concern:

Be it known that I, HUGH T. PORTER, of Auburn, county of Cayuga, State of New York, have invented a new and useful Variable Cut-Off and Reversing Valve-Gear for Road or Traction Farm Steam-Engines, of which the following is a specification.

My invention relates to that class of mechanism employed in steam, road, farm, and traction engines to vary the supply of steam to the cylinder, and to so direct the same as to reverse the movement of the piston and its connected parts by means of mounting the eccentric upon the shaft, which is provided with a rack having inclined teeth adapted to mesh with similarly-inclined teeth formed on the bearing of the eccentric, and means connected with said rack, whereby it may be moved longitudinally upon the shaft, and thereby change the relative position of the eccentric upon the periphery of the shaft, and through its connection with the valve so operate it to sooner or later cover the port; and my invention consists in certain features hereinafter described, and specifically set forth in the claims.

Referring to the drawings, Figure 1 is a central vertical section of so much of an engine as is necessary to a clear understanding of my invention. Fig. 2 is a like section of the eccentric; Fig. 3, a plan of the rack attached to a sleeve, shown in section; and Fig. 4, a section of the eccentric, showing the teeth formed therein.

Like letters refer to like parts in all the figures.

A represents the eccentric, which is provided with a collar, *a*, and with teeth *a'*, formed in the surface of its bearing, and inclined to mesh with similar teeth formed on a rack, E, secured to a sliding sleeve, F, adapted to slide upon the shaft longitudinally.

D is a disk secured to the shaft B, and revolving with it. To the disk is secured a split collar, C, adapted to fit and revolve upon the collar *a* of the eccentric. The sleeve F is provided with a V-shaped peripheral rib, to which is fitted a strap, G, provided with trunnions *g*, connected to the bifurcated arm of a bell-crank lever, H, which by any suitable mechanism is connected to a quadrant-lever of usual construction.

This being the construction, the operation of my invention is as follows: The quadrant-lever being operated to throw the bifurcated arm of the bell-crank lever H and the sleeve F connected therewith toward the eccentric, the rack E is moved in the same direction, and the teeth of the eccentric and rack cause the former to revolve upon its bearing, thus, through the medium of the usual connecting-rod, (not shown,) drawing or "leading" the valve ahead of its normal position, thereby more quickly shutting off the supply of steam and, if the said movements are sufficient in extent, completely closing the port and opening the opposite port for supply at the opposite side of the piston, and resulting in a complete reversal of the movement thereof and of the engine. By my invention these results are accomplished by simple, strong, serviceable means, not apt to get out of repair, and readily removable and accessible—advantages apparent over more complicated mechanisms.

I am aware that eccentrics have been operated by incline teeth meshing in corresponding teeth in a rack mounted on a shaft, and therefore I do not claim, separately, such construction.

Having described my invention and its operation, what I claim as new, and desire to secure by Letters Patent, is—

1. The combination of eccentric A, provided with incline teeth on its bearing, and collar *a* of the disk D, split collar C, the rack E, and shaft B, substantially as described.

2. The combination of the shaft B, the sliding sleeve F, provided with the V-rib, the strap G, adapted to fit the same, and connected by trunnions to the bifurcated arm of the bell-crank lever H, the rack E, and the eccentric A, each provided with inclined teeth, and the latter provided with a collar, *a*, and the disk D, provided with the split collar C, substantially as shown and described.

HUGH T. PORTER.

Witnesses:

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JOHN VAN KERVEN.