T. E. L. COLLINS.

Adjustable Cut-Off.

No. 214,366. Patented April 15, 1879.

Fig. 1.

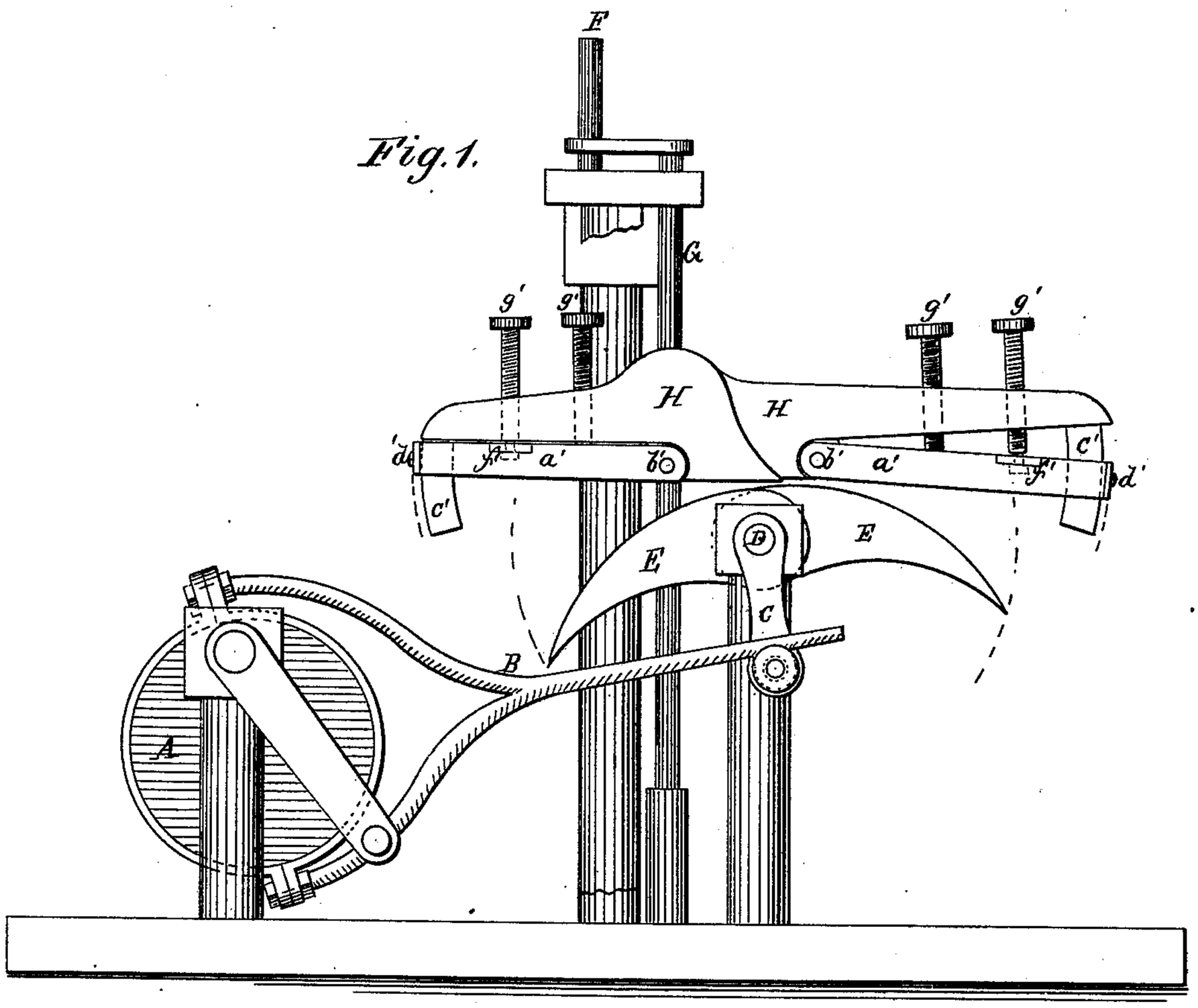
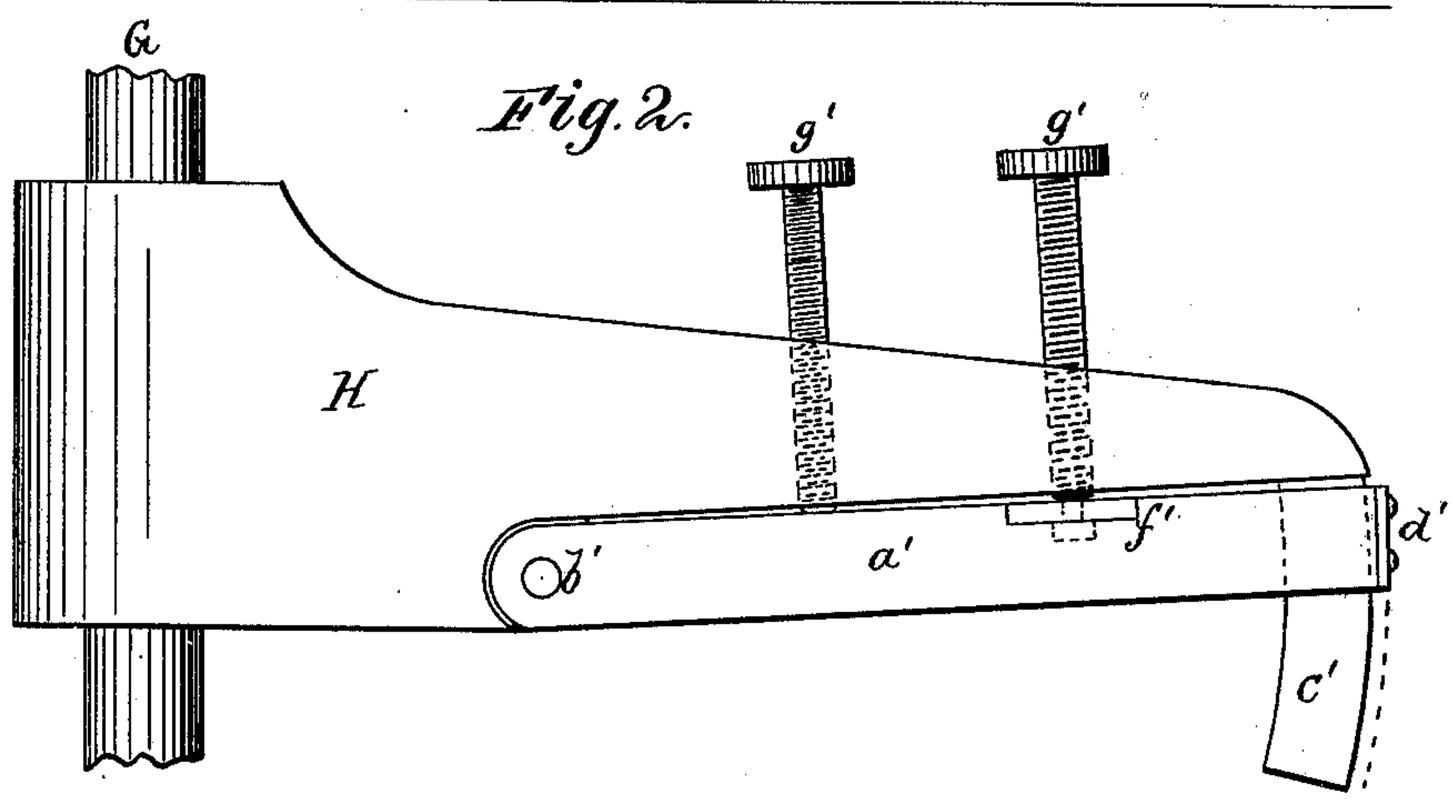


Fig. 2.



WITNESSES:

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UNITED STATES PATENT OFFICE.

THOMAS E. L. COLLINS, OF FALL RIVER, MASSACHUSETTS.

IMPROVEMENT IN ADJUSTABLE CUT-OFFS.

Specification forming part of Letters Patent No. **214,366,** dated April 15, 1879; application filed February 5, 1879.

To all whom it may concern:

Be it known that I, THOMAS E. L. COLLINS, of Fall River, in the county of Bristol and State of Massachusetts, have invented a new and Improved Adjustable Cut-Off, of which the following is a specification.

Figure 1 is a side elevation, partly in section, of the parts effecting the cut-off. Fig. 2 is an enlarged view of the improved lifter.

Similar letters of reference indicate corresponding parts.

This invention has for its object a cut-off, especially adapted to beam-engines, that possesses especial advantages in the ease and nicety with which it may be adjusted.

In the drawings, A represents the eccentric of an engine; B, the eccentric-rod; C, the rocker-arm; D, the rocking shaft; E E, the cams; F, the guiding-rod; G, the valve-rod; and H H, the lifters secured to valve-rod.

The invention consists in making the lifters in two parts, the lower part, a', being pivoted at b' to the heel of the upper part, while from the toe of the upper part the curved guide c' projects downward through a slot in the toe of the lower part to prevent its lateral motion.

A plate, d', closes the outer end of the slot, and serves to steady the motion of the pivoted part of the lifter.

The ordinary cut-off lifters of beam-engines are secured to the valve-rods, as are these, with set-screws or keys, or both, and the cut-off can be changed and adjusted only by loosening the set-screws or keys and changing the position of the lifters—a matter that involves considerable labor and the greatest care at all times, and that can only be done when the engine is at rest.

It will be seen that my lifter is provided with two screws, g' g', that pass down through its upper to its lower part; and that the outermost screw is held fast in plate f', and holds up the part a', while the inner screw is merely in contact with the surface of the lower part. The threads of the outer screw are made quicker than those of the inner one, so that the downward and upward movements of the two, when turned together, may properly correspond with the angular movement of the part a'. The outer screw is essentially the adjusting-screw, while the inner one is for giving an additional bearing to the part a'.

It is plainly to be seen that by this arrangement the cut-off can be adjusted without stopping the engine or changing the position of the lifter; and that by adjusting the part a' of the lifter by means of the screws, a cut-off at any desired point may be effected while the engine is running, and that a most minute change may be effected as easily as a considerable one.

In Fig. 2 it is clearly shown that the part a' of the lifter is made, when closed up, to slope upward from heel to toe. This is a very important matter, inasmuch as it gives to the part a' a greater range of adjustability. The bevel which causes this slope may be made on the upper part of the lifter, as herein shown, or on the lower part, or on both, so that the object in view is attained.

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

1. In valve-gear for engines, the valve-rod, in combination with the lifter H, with movable lower part pivoted to the stationary or fixed upper part, and secured from lateral motion by means of the curved guide, which projects downward from the upper part into a slot in the toe of the lower part, substantially as herein shown and described.

2. In valve-gear for engines, a cut-off lifter consisting of an upper and a lower part with guide c', plate d', screws g' g', and plate f', substantially as herein shown and described.

THOMAS EDWARD LEONARD COLLINS.

Witnesses:
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