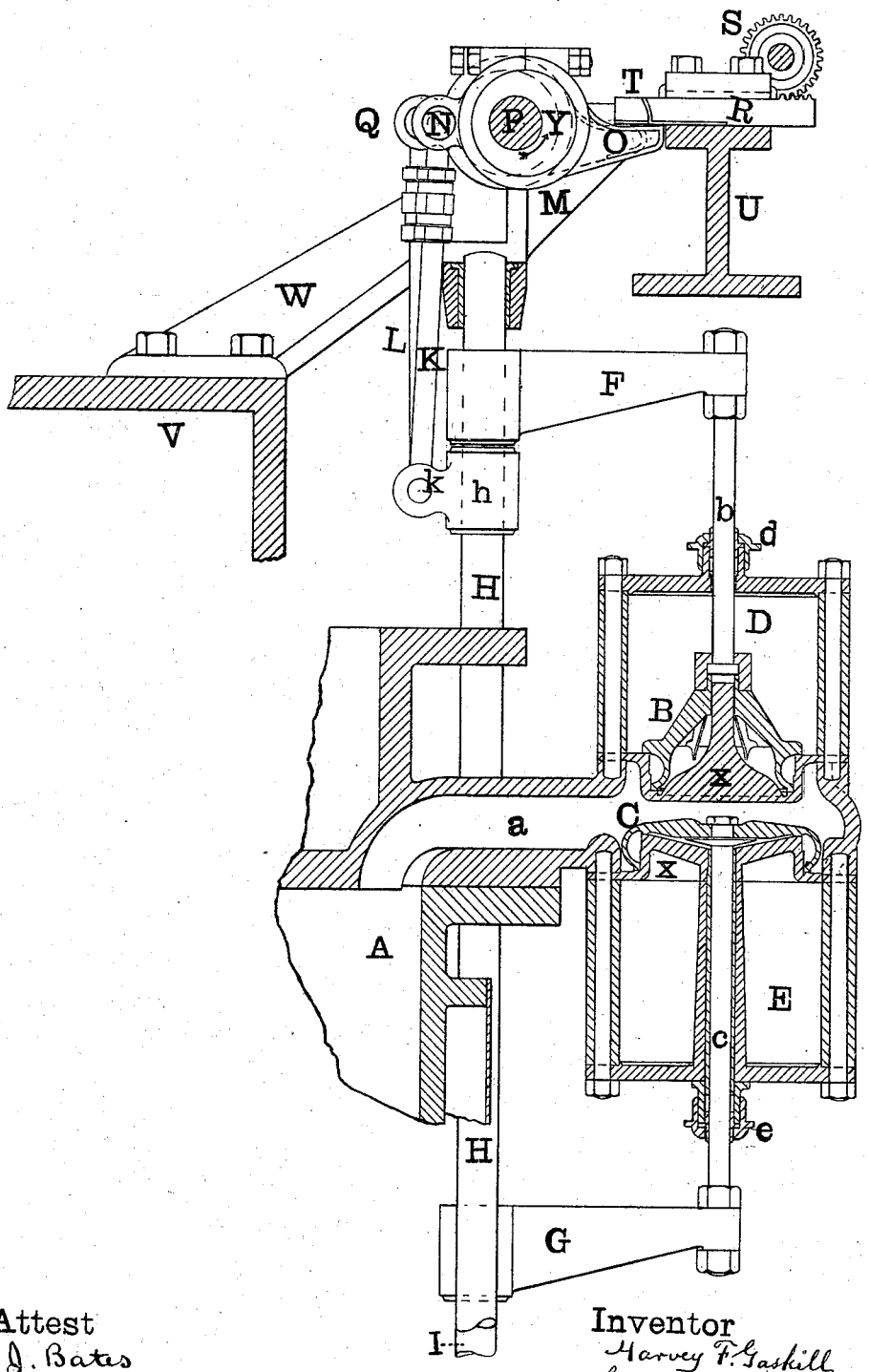
(No Model.)

H. F. GASKILL.

CUT-OFF VALVE GEAR.

No. 262,944. Patented Aug. 22, 1882.



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CUT-OFF-VALVE GEAR.

SPECIFICATION forming part of Letters Patent No. 262,944, dated August 22, 1882.

Application filed April 1, 1882. (No model.)

To all whom it may concern:

Be it known that I, HARVEY F. GASKILL, of Lockport, in Niagara county, New York, have invented certain Improvements in Cut-Off-Valve Gears for Steam-Engines, of which the following is a specification.

In the operation of steam-engines using steam expansively it is of importance that the steam be admitted to the cylinder at the same point of piston travel and be cut off by a quick closing of the valve to prevent wire-drawing, and also that this point of cut-off be capable of regulation, so that the steam may be expanded to a greater or less extent, as desired. By my invention I attain these objects in a simple and effective manner by means of an ordinary eccentric, as will be more fully explained hereinafter.

The drawing is a sectional view of an embodiment of my invention as applied by me to a vertical engine.

A is the steam-cylinder; *a*, the port; B, the admission-valve, and C the exhaust-valve. These valves and their connections are duplicated at the other end of the cylinder, which I have not thought it necessary to show.

b and *c* are respectively the admission and exhaust valve stems, which pass through proper stuffing boxes *d* and *e*, and are attached to the arms F and G on the reciprocating rods H and I. These rods are respectively connected by the links K and L and the straps with the two eccentrics on the shaft P, which may or may not be the main shaft of the engine.

Y is the eccentric, which operates the admission-valve B.

The eccentric-strap M has an ear at N, to which the link K is attached, and a steel-shod toe at O.

R is a steel-faced stop, with which the toe O comes in contact during the operation of the engine. This stop is adjusted in and out, as desired, by the gear S, which engages the rack-teeth *s* on the stop, as shown. The exhaust is provided with a similar arrangement.

The operation of the machine is as follows, viz: The shaft P revolves in the direction indicated by the arrow, and the eccentric with it. As the toe O is prevented from rising by the stop R the ear N will rise as the eccentric revolves, and will raise the valve B and admit steam to the cylinder. As the revolution of the eccentric continues the toe O is drawn off the end of the stop, and the valve drops to its seat, and by sliding the stop in or out the valve may be made to drop at any point, thus securing any desired degree of expansion. As the eccentric continues its revolution the toe is carried down and under the stop again, and the operation is performed over again. The exhaust-valve is operated in a similar manner, except that its stop T is so adjusted that the toe is not drawn off the end of it, and the valve remains closed during a half-revolution and open during the other half.

Having thus described an embodiment of my invention, what I claim is—

1. The combination of the eccentric, the strap, the valve connected to the strap, the toe, and the stop to limit the effect of the eccentric on the valve, substantially as described.

2. The combination of the eccentric, the strap having the toe on one side and connected to the valve-rod on the other side, and the adjustable stop to regulate the effect of the eccentric on the valve, substantially as described.

3. The combination of the eccentric, the strap having the toe on one side and connected to the valve-rod on the other, the adjustable stop, and the means for adjusting the stop to any desired position to regulate the effect of the eccentric on the valve, substantially as described.

HARVEY F. GASKILL.

Witnesses:
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