

C. DUECKER.
STEAM-ENGINE.

No. 178,125.

Patented May 30, 1876.

Fig 1

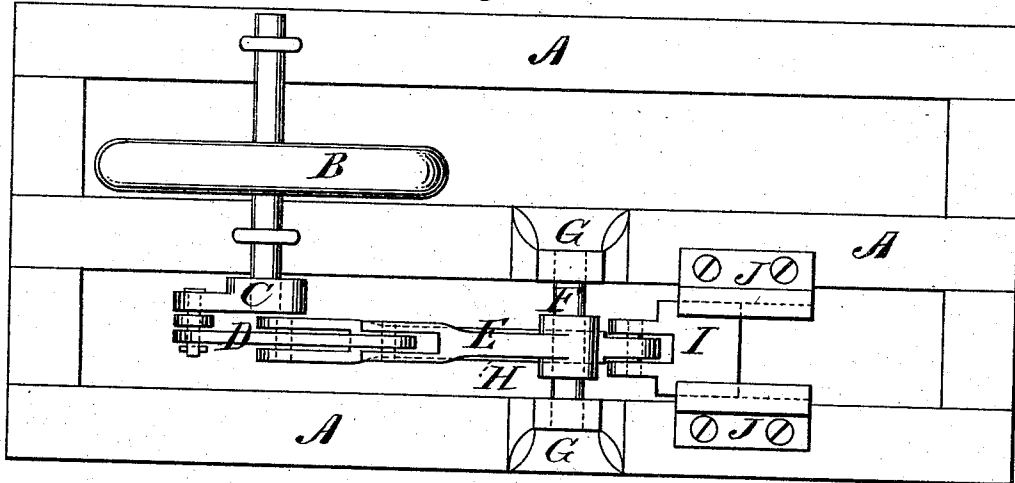
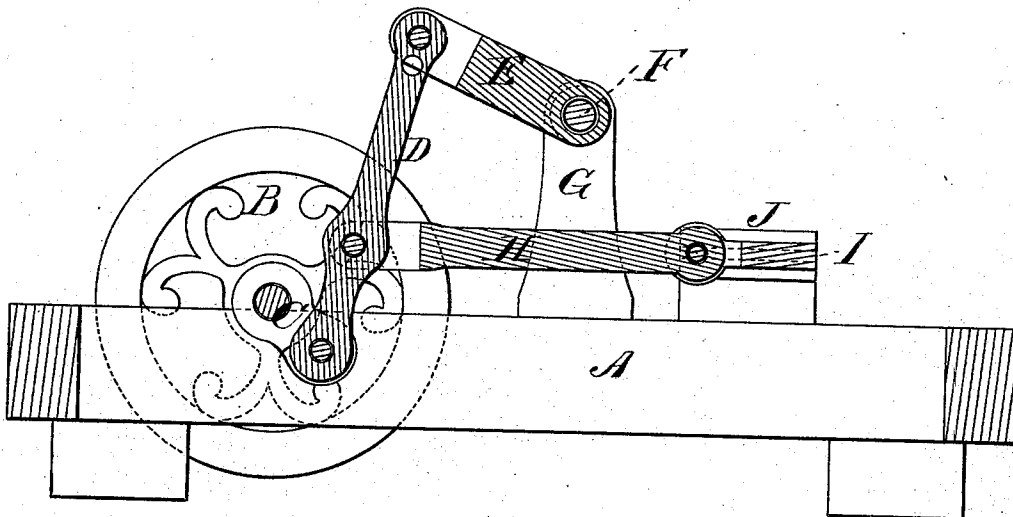


Fig 2



WITNESSES

Villette Anderson.
F. J. Clasi

INVENTOR

Conrad Duecker
by E. W. Anderson,

ATTORNEY

UNITED STATES PATENT OFFICE.

CONRAD DUECKER, OF TAMAROA, ILLINOIS, ASSIGNOR OF ONE-HALF HIS
RIGHT TO DEWITT C. BARBER, OF SAME PLACE.

IMPROVEMENT IN STEAM-ENGINES.

Specification forming part of Letters Patent No. 178,125, dated May 30, 1876; application filed
April 29, 1876.

To all whom it may concern:

Be it known that I, CONRAD DUECKER, of Tamaroa, in the county of Perry and State of Illinois, have invented a new and valuable Improvement in Steam-Engines; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the annexed drawings, making a part of this specification, and to the letters and figures of reference marked thereon.

Figure 1 of the drawings is a representation of a top view of my improved engine, and Fig. 2 is a longitudinal vertical section thereof.

This invention has relation to improvements in steam-engines; and it consists in the arrangement and novel construction of the various devices used, whereby very important results are obtained, as will be hereinafter more fully set forth and claimed.

In the annexed drawings, the letter A designates the frame or bed of an engine. B is a fly-wheel, mounted in suitable bearings therein, and provided with the usual crank-arm C. D represents a metallic pitman, one end of which is connected in the customary manner to the said crank-arm, and the other to a vertically-vibrating arm, E, of suitable length, which arm is keyed or otherwise suitably secured to a rock-shaft, F, having its bearings in upright standards G, erected on the engine-frame. H indicates a second pitman, one end of which is pivoted to a cross-head, I, reciprocating in guides J, secured upon the engine-frame, so as to have vertical vibration. The other end of pitman H is bifurcated, and is connected pivotally to pitman D, somewhat nearer its wrist-pin connection with the crank-arm than to the vibrating arm E, the said pitman having been first brought in line with the cross-head and cylinder. Even should the latter be somewhat below or above the cross-head and pitman H, the engine would still be operative.

From the vibrating arm E the cut-off may be worked by applying link motion to the cut-

off or stem-rod, thus doing away with eccentrics. The engine may also be reversed from this point; and I may, by the application of a simple crank-arm upon the rock-shaft F, actuate a pump for supplying feed-water to the boiler, and for other purposes.

It will be evident at a glance that the crank will be thrown down faster than upward when a fly-wheel is not used; but by its employment the up and down motions of the said crank will be equalized, and its movements made regular.

By the employment of the subsidiary pitman D and the rocking arm E, the power exercised by the cylinder is considerably increased, and the facility with which the dead-centers are passed, the two pitmen being at different angles, greatly added to.

In practice, I may sometimes form a slot in the upper end of pitman, and apply therein an adjustable box or bearing. By this construction I am able to adapt my improvement to cylinders of any length.

It is evident that my improvement may be applied to every description of engine, whether horizontal or upright, stationary or locomotive.

What I claim as new, and desire to secure by Letters Patent, is—

1. In a steam-engine, the subsidiary pitman D, pivoted to the crank-arm at one end, and at the other to a vertically-vibrating rocking arm, E, in combination with the pitman H, pivoted to pitman D, substantially as specified.

2. The subsidiary pitman D and rocking arm E, in combination with the actuating-pitman H, cross-head I, crank C, and fly-wheel B, substantially as specified.

In testimony that I claim the above I have hereunto subscribed my name in the presence of two witnesses.

CONRAD DUECKER.

Witnesses:

CHAS. PRICE,
H. C. WILDY.