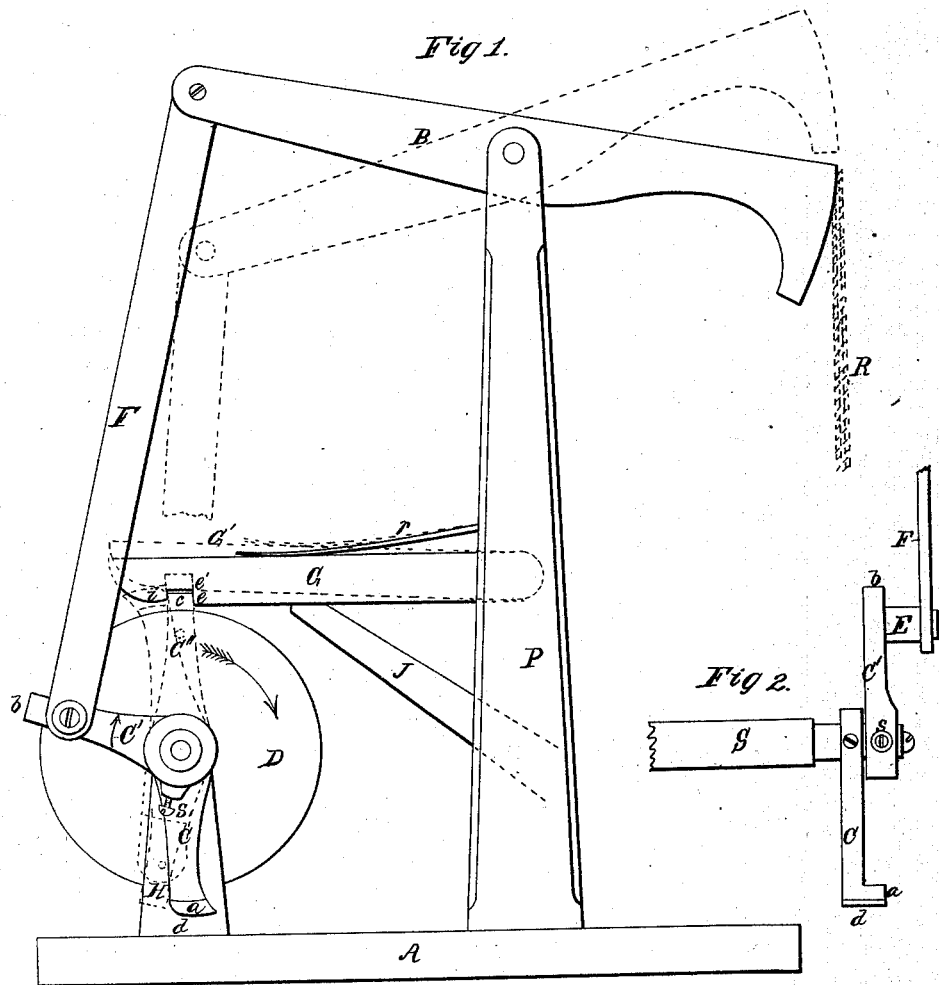


W. S. Fickett,

Walking Beam for Stone Drills.

No 47,290.

Patented Apr. 18, 1865.



Witnesses.
Asa H. Billings
P. J. Yarnall

Inventor.
W. S. Fickett
By H. H. Fickett
Wm. H. Fickett

UNITED STATES PATENT OFFICE.

WM. S. FICKETT, OF ROCHESTER, NEW YORK.

IMPROVEMENT IN ROCK-DRILL APPARATUS.

Specification forming part of Letters Patent No. 47,290, dated April 18, 1865.

To all whom it may concern:

Be it known that I, WM. S. FICKETT, of Rochester, in the county of Monroe and State of New York, have invented certain new and useful Improvements in Machinery for Operating Rock-Drills; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, making part of this specification, in which—

Figure 1 is a side elevation of a drilling apparatus with my invention attached. Fig. 2 is a detached side view of the compound or double crank.

Similar letters of reference indicate corresponding parts in both figures.

This invention consists in providing the driving-shaft of rock-drills with a compound or a fixed and a loose crank, which permits the drill to fall suddenly and rapidly from its raised position, instead of gradually, as when it is operated by a fixed crank, as heretofore; and also in the use of a self-acting locking-bar to catch and hold the loose crank on its upper center, and thus prevent its vibrations, which would otherwise occur when relieved from the weight of the drill, as at this point.

To enable others to make and use my invention, I will describe its construction and operation.

I use the ordinary walking-beam B, mounted upon the king-post P, which is supported by the base A. The driving-shaft S and pulley D rest in suitable supports, which are also framed to the base A. I add to the fixed crank C an auxiliary crank, C', which latter is hung loosely upon the shaft and carries the wrist pin E, Fig. 2, to which the connecting-rod F is attached. The primary or fixed crank C is provided with a projecting lug, a, which strikes the body of the secondary or auxiliary crank C' and drives it around to the point indicated by the dotted lines H, which is past the center, when the weight or gravity of the drill, &c., causes it to swing up instantly and allow the drill to drop suddenly and with its full force. This loose crank is provided with a set-screw, s, whereby it may

be fixed to the shaft so as to revolve with it, when it is necessary or desirable to give a gentle stroke of the drill, as when "rimming out," &c.

To prevent the vibrations of the loose crank C' after reaching its upper position, (shown by the dotted lines C''), I apply the locking bar or latch G, which is pivoted to the king-post and is provided with a strap-spring, r, or its equivalent, and a rest or gage, J, to keep it in proper position to receive the crank as it comes round. The projecting end v of this crank enters the notch c by raising the latch, its circular face being cut away at i, which leaves less shoulder on that side than on the other at e. This insures the arrest of the crank C' at this point. As the primary crank C (which is as much longer than the other as is equal to the depth of the notch c) rises, the face d strikes the head of the latch at i, raising it to the position of the dotted lines G', thereby releasing the loose crank just before the other reaches it.

It will be seen that by the peculiar construction and operation of the cranks there need be but a very trifling amount of slack in the drill-rope, (shown by the dotted lines R,) and therefore the raising of the drill commences while the crank is moving the walking-beam very slightly; hence the severe shock heretofore experienced at every "lift" of the drill, and the wear and tear consequent thereon, are entirely avoided by my invention.

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

1. Working the drill by means of a crank composed of a fixed arm, C, and a loose one, C', constructed and operating conjointly, substantially in the manner shown, and for the purposes described.

2. The employment of the locking bar or latch G for the loose arm of the crank, (said bar having an automatic action,) substantially as and for the purposes set forth.

W. S. FICKETT.

Witnesses:

WM. S. LOUGHBOROUGH,
P. T. TURNER.