G. J. Wardwell.

Rock-Drill.

No. 93650. Patented Aug. 10. 1869.

Fig: 1.

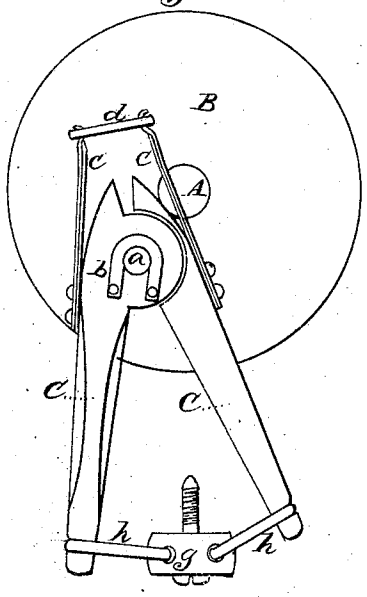


Fig: 2

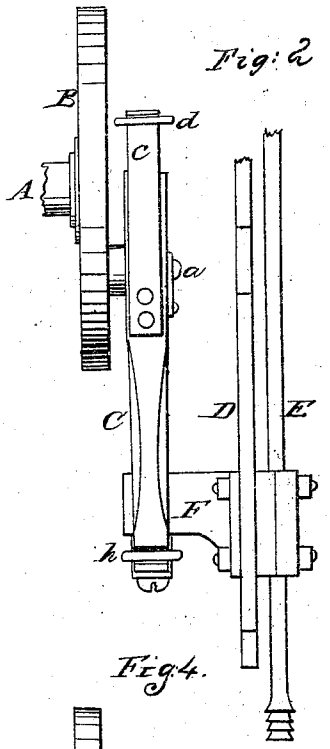


Fig: 3.

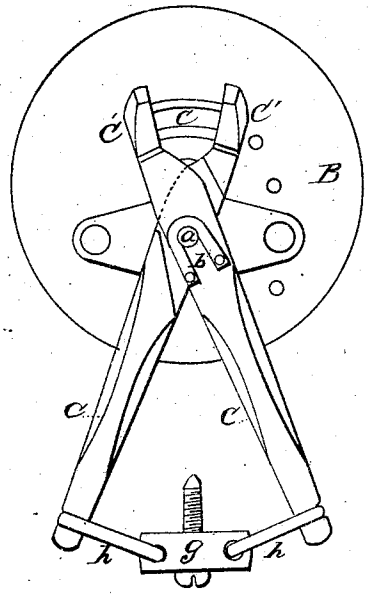
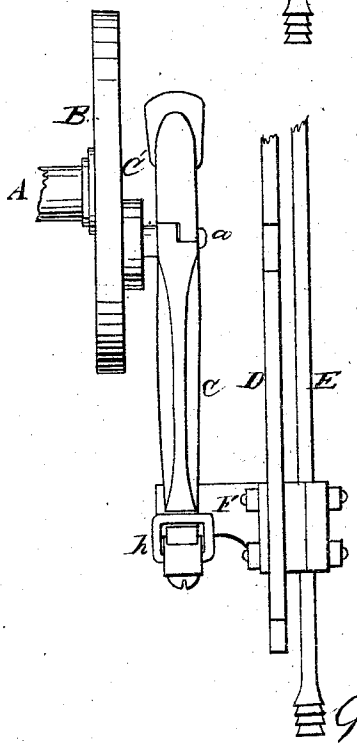


Fig: 4.



Witnesses:
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J. A. Campbell

Inventor:
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by
Munn Pennie & Lawrence

United States Patent Office.

GEORGE J. WARDWELL, OF RUTLAND, VERMONT, ASSIGNOR TO THE STEAM STONE-CUTTER COMPANY, OF NEW YORK CITY.

Letters Patent No. 93,650, *dated August* 10, 1869.

IMPROVED ELASTIC PITMAN FOR STONE-CHANNELLING MACHINE.

The Schedule referred to in these Letters Patent and making part of the same.

To all whom it may concern:

Be it known that I, GEORGE J. WARDWELL, of Rutland, in the county of Rutland, and State of Vermont, have invented a new and improved Pitman-Connection for Stone-Channelling Cutters; 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 view of my improved pitman-connection applied to the wrist-pin of a crank-wheel.

Figure 2 is an edge view of the same, also showing the manner of connecting the arms of the pitman to a gang of cutters.

Figures 3 and 4 are views of a modification of the pitman of figs. 1 and 2.

Similar letters of reference indicate corresponding parts in the several figures.

In the schedule annexed to my Letters Patent dated on the 18th day of May, 1869, I described an elastic pitman, which consisted of two levers of unequal length pivoted together, with a spring applied between them, which pitman was used for connecting the gang of cutters to a wrist-pin on the crank-wheel that communicated through said pitman a rectilinear reciprocating motion to the cutters. The spring was arranged below the fulcrum of the levers and wrist-pin, and was compressed by the drawing together of the free ends of the levers.

The nature of this invention consists in a pitman-connection, composed of two levers of equal length, with the spring or springs arranged above their fulcrum or wrist-pin connection, as will be hereinafter explained.

To enable others skilled in the art to understand my invention, I will describe its construction and operation.

In the accompanying drawings—

A represents a driving-shaft which is arranged in a horizontal plane across one end of the steam-channelling carriage, and carries a crank-wheel, B, as described in my Letters Patent, dated on the 18th day of May, 1869.

At a suitable point on the face of the wheel B is a fixed or adjustable wrist-pin, *a*, which receives upon it two levers, C C, and serves as the fulcrum for these levers.

The yoke *b* or other equivalent device is used to prevent the levers from slipping off the wrist-pin *a*.

It will be seen that the levers C C are of equal length, and that they do not cross one another, but are connected to the wrist-pin *a* by ears formed on them; hence, when the longest arms are pressed together, the shortest arms will be separated, and *vice versa*.

To these levers C C, springs *c c* are rigidly secured, which rise above the wrist-pin *a*, and form elastic extensions of the shortest arms.

These springs *c c* may be made of a number of straight plates secured together with their outer ends hooked outwardly to receive the tie-loop *d*, which connects these ends together.

The lower or longest arms of levers C C are connected to a block, *g*, by means of links *h h*, which block is used to connect the links to the cutters E. The links are loosely attached to the levers, and also to the block, so as to play freely.

In figs. 3 and 4, I have represented another mode of arranging a spring above the wrist-pin *a*, so as to act on two jointed levers C C.

These levers C C are crossed at their joint or wrist-pin *a*, and their shortest arms C′ C′, which extend above said pin, have a spring, *c*, of India rubber, confined between them, so as to be compressed by the pressing together of the longest arms.

It will be seen from the above description that I have provided for applying a spring to the levers above their point of connection to the wrist-pin *a*, consequently I am enabled to make the levers shorter with a given amount of elastic play than would be the case if the spring was applied between the longest arms of the levers below the said wrist-pin.

I do not confine myself to the crank-wheel B, in combination with the improved pitman, as this pitman may be connected to a wrist-pin, *a*, on a rectilinear reciprocating cross-head, as described in my application for a patent marked A, and bearing even date with the filing of this.

Having described my invention,

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

Jointed levers C C, provided with links *h h* on their longest arms, and with a spring arranged above their fulcrum, substantially as set forth and for the purposes described.

GEO. J. WARDWELL.

Witnesses:

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C. W. SAFFORD.