

J. COMLY.

Improvement in Machinery for Breaking and Crushing Stones, &c.

No. 127,574.

Patented June 4, 1872.

FIG. 1.

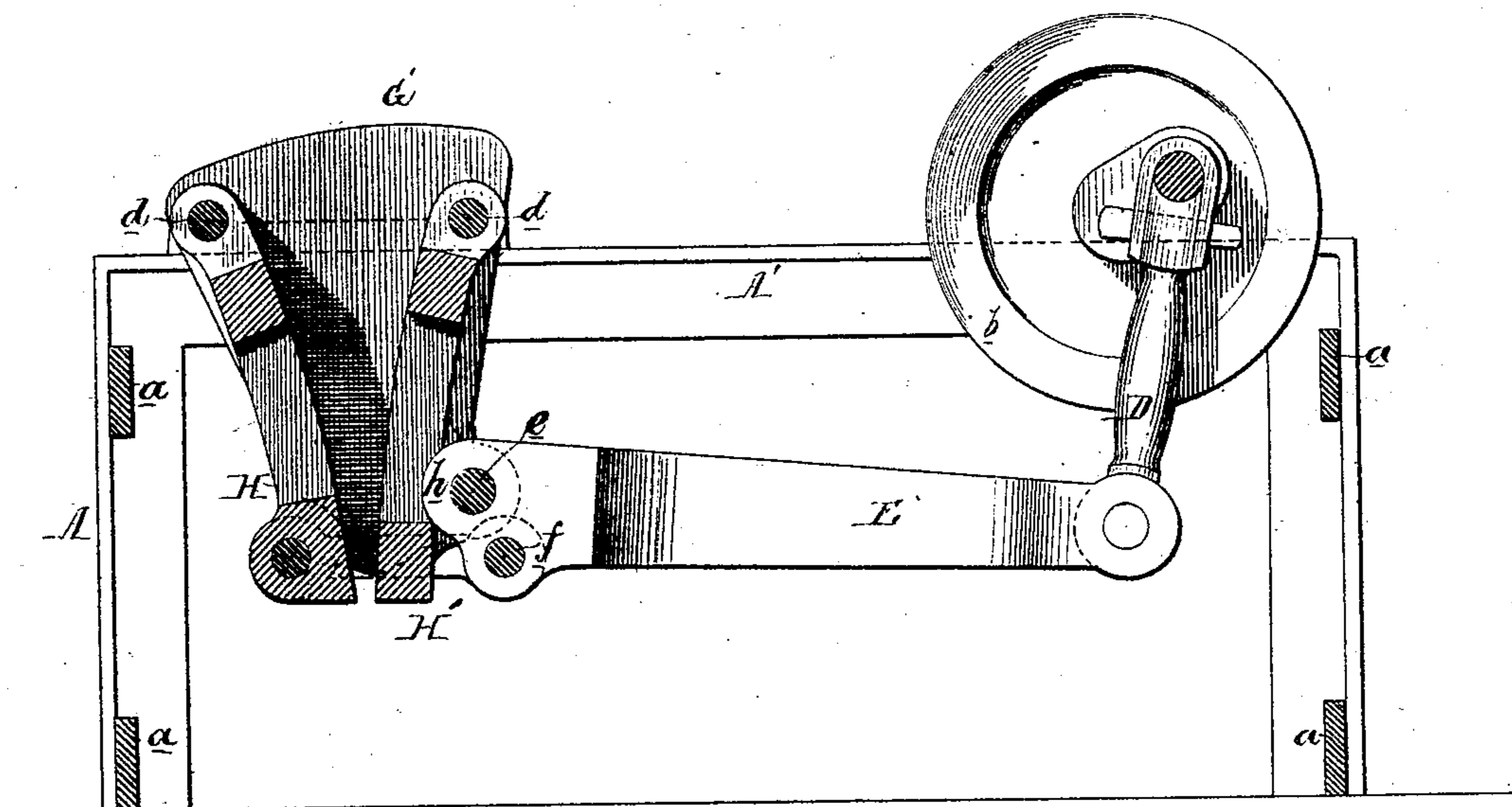


FIG. 2.

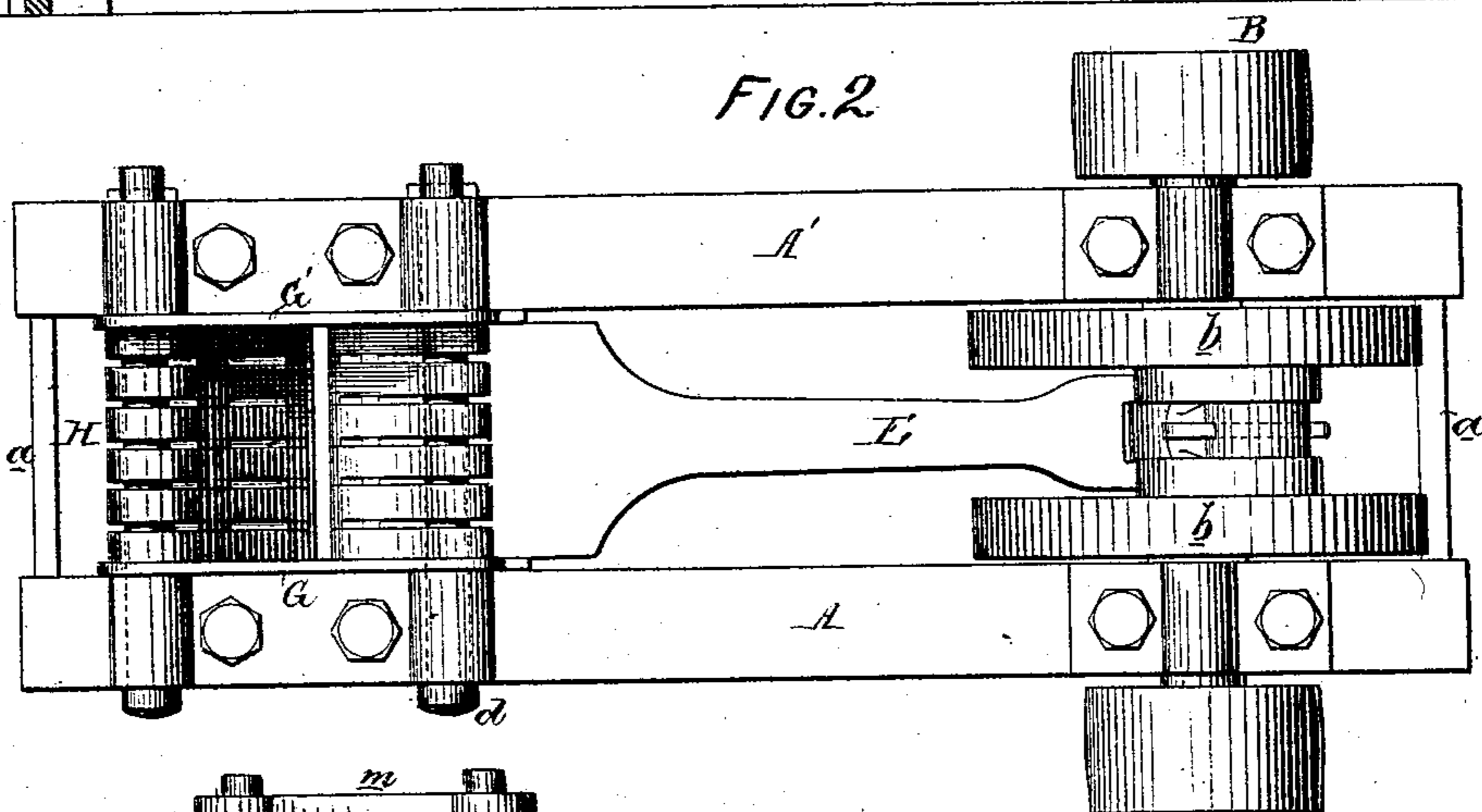
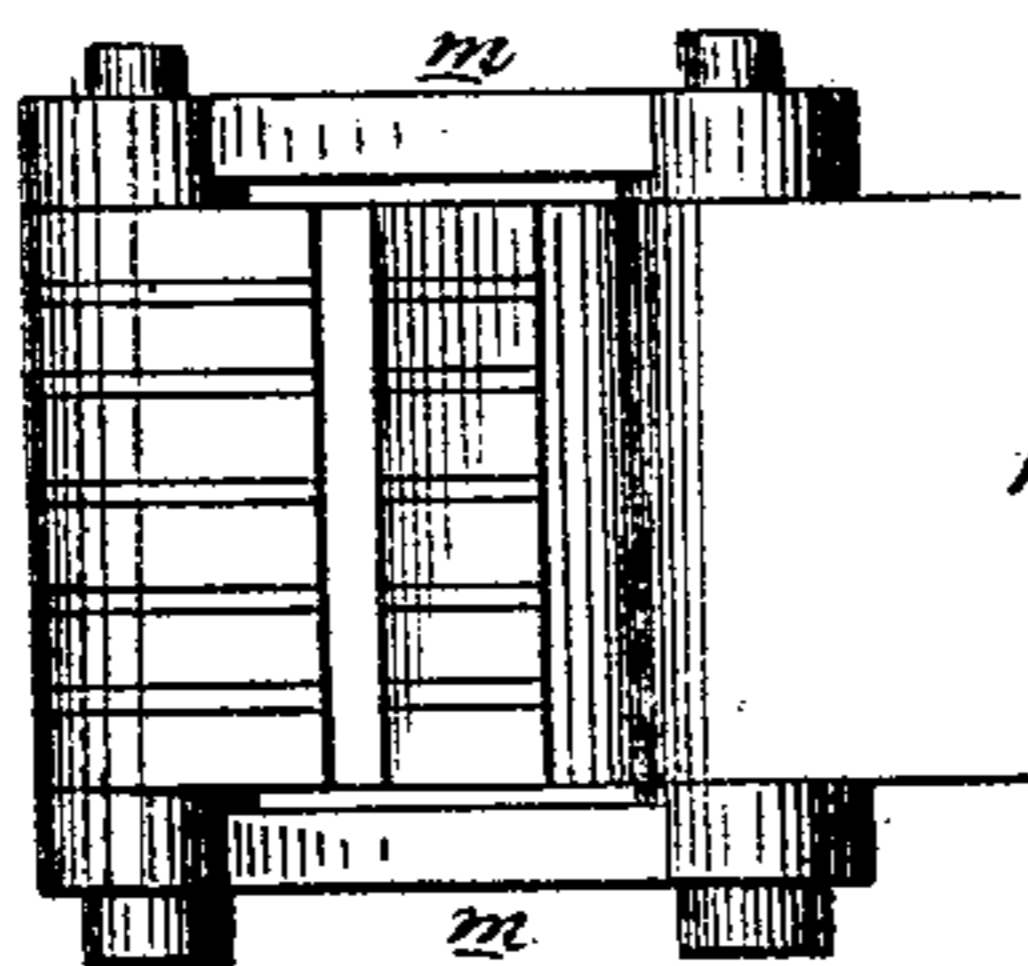


FIG. 3.



Joshua Comly
by his Attor.
Hewson and Son

WITNESSES { Harry Smith
Thomas McPherson

UNITED STATES PATENT OFFICE.

JOSHUA COMLY, OF PHILADELPHIA, PENNSYLVANIA.

IMPROVEMENT IN MACHINERY FOR BREAKING AND CRUSHING STONES, &c.

Specification forming part of Letters Patent No. 127,574, dated June 4, 1872.

Specification describing certain Improvements in Machinery for Breaking and Crushing Stones, &c., invented by JOSHUA COMLY, of Philadelphia, Pennsylvania.

Improvements in Machinery for Breaking and Crushing Stones, &c.

My invention relates to machines in which stones and other material are crushed by and between jaws; and my invention consists in so controlling both jaws by the operating-lever that the frame of the machine will be relieved from the duty of resisting the strains to which the jaws are subjected, thereby enabling me to employ light and inexpensive frame-work.

Figure 1 is a vertical section of my machine for breaking and crushing stone, &c.; Fig. 2, a plan view; and Fig. 3, an inverted plan view of part of the machine.

The opposite frames A and A' of the machine are connected together by cross-bars a a, and in suitable bearings on these frames turns the driving-shaft B, the cranked portion of which, between the fly-wheels b b, is embraced by the upper end of the rod D, the lower end of the latter being connected to the long arm of the bell-crank lever E, of which a pin, e, passing through the side plates G and G' is the fulcrum, these side plates being firmly secured to the frames A and A' and forming, with the jaws H and H', the hopper for receiving the stones or other material to be broken, each jaw consisting, in the present instance, of a number of substantial bars secured to a pin, d, passing through the side plates G and G' and adapted to bearings in the opposite side frames. The short arm of the bell-crank lever extends from the fulcrum-pin e to the pin f, and this pin is connected to the jaw H by the links m m, as shown in Fig. 3, the jaw H' bearing against the rounded end h of the lever. On the lever E being vibrated by the action of the cranked driving-shaft B, a short vibratory

movement will be imparted to the jaw H, and hence the stones between the latter jaw and the jaw H' will be crushed and broken.

In ordinary stone-breaking machinery of this class the operating-lever is connected to the frame-work in such a manner that the latter has to resist the entire strain to which the jaws are subjected, and consequently the frame must have a strength and weight in accordance with this great strain. In my machine, however, the simple connection of the moving jaw to the operating-lever in the manner described while the stationary jaw bears against the same lever removes all strains from the frame-work and restricts it to the jaws themselves and to the lever. Owing to this arrangement, I am enabled to use a very light and inexpensive frame. It may be made, for instance, of angle-iron bars of just sufficient strength and rigidity to carry the driving-shaft and support the jaws and lever.

The sole object of permitting the pin e to pass through the side plates G and G' is to steady the lever and jaws, for no strain is transmitted from the jaws to the side plates through the medium of the pin.

If desired, the pin f may be the fulcrum of the bell-crank lever, in which case the jaw H' would be operated and the jaw H stationary; but I prefer the plan illustrated in the drawing.

I claim as my invention—

A crushing-machine in which two suspended jaws are connected one to a pin, h, and the other to a pin, f, of a lever, E, substantially as and for the purpose set forth.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

JOSHUA COMLY.

Witnesses:

H. HOWSON,

CHARLES M. CARPENTER.