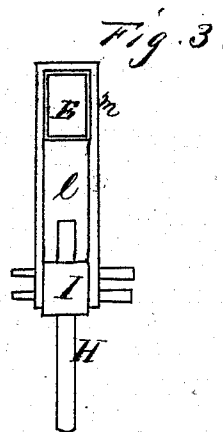
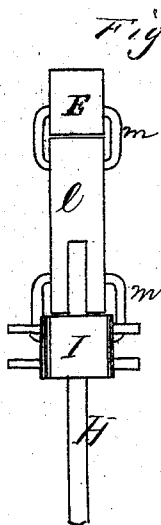
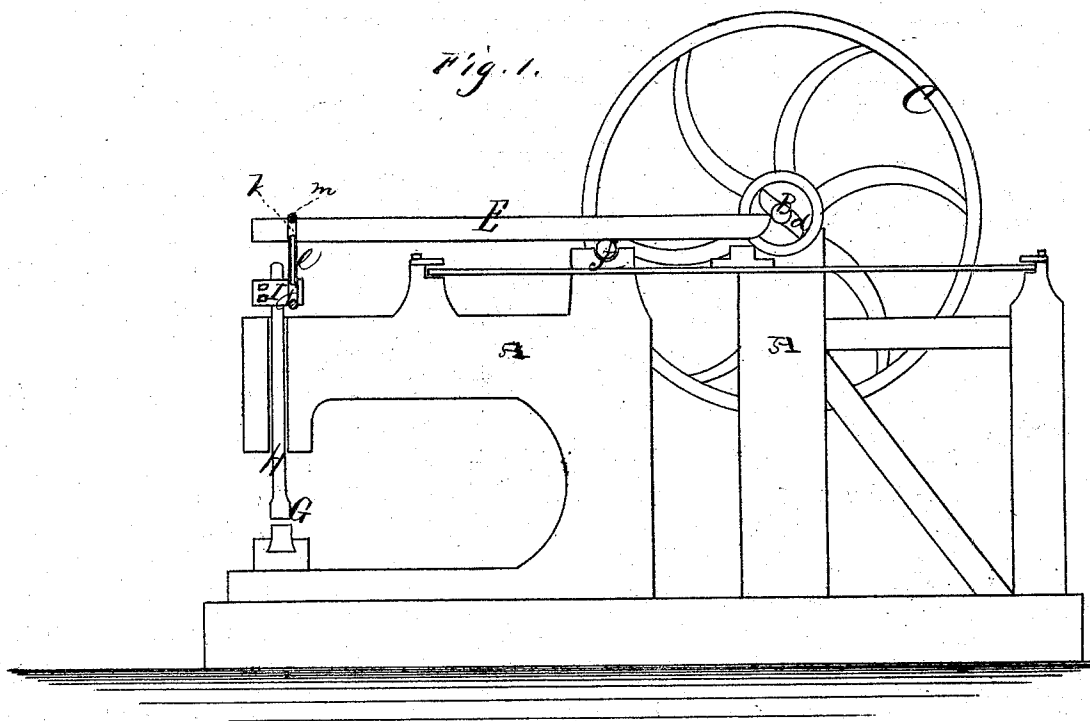


GEORGE D. CROCKER.

Improvement in Stamping and Hammering Machines.

No. 125,178.

Patented April 2, 1872.



Witnesses

N. J. Bingham
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Inventor

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UNITED STATES PATENT OFFICE.

GEORGE D. CROCKER, OF VIRGINIA CITY, NEVADA.

IMPROVEMENT IN STAMPING AND HAMMERING-MACHINES

Specification forming part of Letters Patent No. 125,178, dated April 2, 1872.

To all whom it may concern:

Be it known that I, GEORGE D. CROCKER, of Virginia City, in the county of Storey and State of Nevada, have invented Improvements in Stamping and Hammering-Machines; and I do hereby declare the following description and accompanying drawing are sufficient to enable any person skilled in the art or science to which it most nearly appertains, to make and use my said invention or improvements without further invention or experiment.

My invention relates to stamping and hammering machines, such as are used for hammering metals, drugs, rock, and other materials or substances, either for the purpose of forging or crushing them. The machine which I employ is a combination of the ordinary stamp and stem, such as is used in quartz-mills for crushing ores, with a lever-arm for operating them in the manner of operating an ordinary tilt or trip-hammer; and my improvements consist in an attachment or joint for connecting the lever-arm with the stamp-stem, by which sufficient freedom of motion is permitted to accommodate the movements of both, while the blow of the hammer or stamp will not affect it.

In order to more fully illustrate and explain my invention, reference is had to the accompanying drawing forming a part of this specification, in which—

Figure 1 is a side elevation. Fig. 2 shows the joint.

A A represent the frame of a hammering or crushing machine. B is a shaft, which carries the fly-wheel *c* at one end, and upon which is keyed a cam, *d*. E is a strong arm, which can be made of wood or metal, as desired. I prefer to use hard strong wood, as being most economical and not liable to crystallize and break, like metal. This arm or lever is supported upon a shaft, *f*, or equivalent device, in such a position that its rear end will be depressed by the cam *d* when the shaft B is revolved. G is a stamp or hammer, and H the stem or slide upon the lower end of which it is carried. This stem passes up through a

hole or sliding guide in the frame A, by which it is guided, or some other suitable guide may be provided to keep it in place. The upper end of the stem H passes through a block, I, which is firmly keyed to it. One end or two sides of this block is provided with a groove, *j*, either entirely around it or upon its upper and lower faces, as desired, or a ball-shaped journal may be employed. The extremity of the lever-arm E is also provided with a similar groove, *k*, directly above the block I, and the two are connected together by a solid link or metal bar, *l*, so as to form what I call a double toggle-joint, in the following manner: The opposite ends of the link or bar *l* are made to fit into the grooves *j* on the ends of the block I and lever-arm E, and the whole is bound together by a wire or metal band, *m*, which passes around the lever-arm, link, and block, and serves to hold the three together, being tightened by keys or set-screws. By slipping the block I up or down along the stem H, and keying it where desired, the striking-point of the hammer can be varied according to the size of the work to be operated upon, without lessening the length of stroke.

Various other joints or connections might be devised for uniting the lever-arm with the stem or slide; but I have presented the above as a simple construction of a joint for the purposes of this specification.

By this means I combine the direct up-and-down stroke of the ordinary stamp-mill with the lever movement of the trip-hammer machine, and am enabled to drive the hammer or stamp with much less expenditure of power and at greater speed than the ordinary stamp-machines.

In order to prepare the stampers for the purposes of quartz-mills, it will only be necessary to surround the stamp or stamps with a mortar provided with screws. As many lever-arms and stamps can be driven from the same shaft as desired.

This hammering-machine can also be used to advantage by gold-beaters, instead of the ordinary hand-hammer.

Having thus described my invention, what I claim, and desire to secure by Letters Patent, is—

1. The link or bar *l*, in combination with the band *m*, substantially as and for the purpose above described.

2. The lever-arm *E*, in combination with the stamp *G* and stem *H*, when connected by a

joint or joints, substantially as and for the purpose above described.

In witness whereof I hereunto set my hand and seal.

GEORGE D. CROCKER. [L. s.]

Witnesses:

W. F. BINGHAM,

A. T. DEWEY.