C. M. BROWN.
Stone-Crusher.

No. 225,104. Patented Mar. 2, 1880.

Fig. 1.

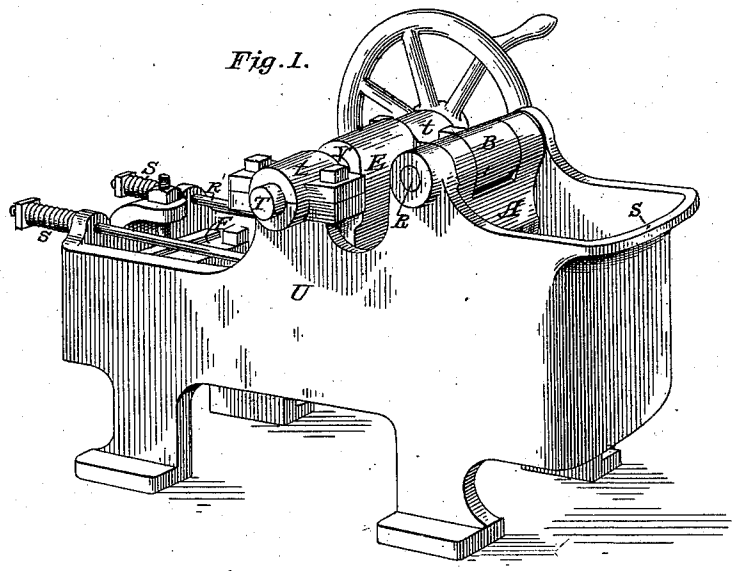
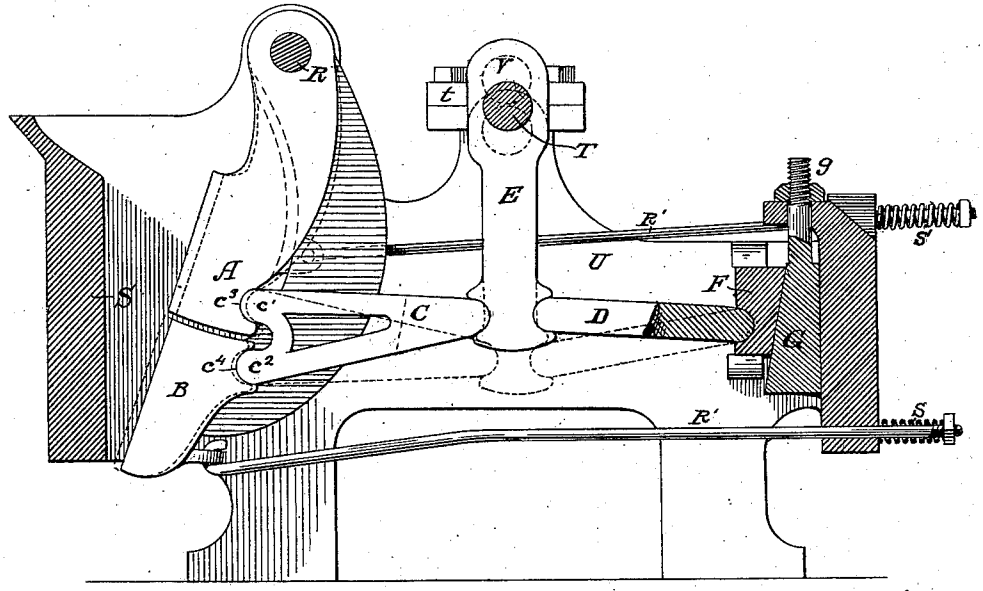


Fig. 2.



Attest:

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UNITED STATES PATENT OFFICE.

CHARLES M. BROWN, OF CHICAGO, ILLINOIS.

STONE-CRUSHER.

SPECIFICATION forming part of Letters Patent No. 225,104, dated March 2, 1880.

Application filed September 9, 1879.

To all whom it may concern:

Be it known that I, CHARLES M. BROWN, of Chicago, in Cook county, in the State of Illinois, have invented a new and useful Improvement in Stone-Crushers; and I do hereby declare that the following is a full, clear, and exact description thereof.

This invention relates to that class of crushers which have vibrating jaws actuated by toggle-levers, &c.; and it consists, first, in a crusher having a single hopper and two vibrating jaws alternately advanced by a toggle, one arm of which is fulcrumed on each jaw alternately, as set forth; second, in a crusher having a single hopper and two vibrating jaws, arranged one above the other, and alternately advanced by a bifurcated toggle.

I am aware that two crushers have heretofore been arranged back to back or side by side, so that the vibrating jaws of each might be driven and alternately advanced by the revolution of a single shaft. I am also aware that a vibrating and a reciprocating jaw placed the one above the other have also been alternately operated by toggles and a single toggle-rod; but my invention differs from either, and relates to the organization of vibrating plates alternately operated by a toggle in a single crusher, to utilize all the power expended in the revolution of the driving-shaft.

That others may fully understand my invention, I will more particularly describe it, having reference to the accompanying drawings, wherein—

Figure 1 is a perspective view of my machine. Fig. 2 is a longitudinal section of the same.

A and B are the crushing-jaws, which vibrate upon pivots, and for convenience both of said jaws are pivoted upon the same rod R. The jaws A B crush against the solid abutment-plate S.

The driving-shaft T is mounted in suitable boxes *t* at the top of the main frame U. The shaft T carries an eccentric, V, and toggle-rod E.

C and D are the toggle-arms, their inner ends being fulcrumed upon the toggle-rod E and their outer ends in sockets in the backs of the vibrating jaws and in the abutment-plate F, respectively.

The general arrangement and mode of operation of the toggle-rod and toggle-arms in actuating the vibrating jaws of a crusher do not differ from other crushers of this class; but the particular structure and mode of operation of the toggle-arm C, in connection with two jaws, A B, whereby said toggle-arm is alternately fulcrumed on one and then upon the other of said jaws, and thereby divides the labor of crushing between the up and down stroke and utilizes all the power which is applied to the shaft T, are unlike any other organization of a crusher, so far as I know.

The toggle-arm C is preferably made bifurcated, and terminates in knuckles c' c^2, which are seated in sockets c^3 c^4, respectively, in the backs of the jaws A B. The effect of the reciprocation of the toggle-rod E, therefore, is to alternately bring the upper and lower branch of the arm C in line with the arm D, and thereby alternately advance the jaws B A.

The arm B is fulcrumed in a socket in the side of a wedge-shaped block, F, and is susceptible of a longitudinal adjustment by means of a correspondingly wedge-shaped back in block, G, which may be advanced or receded by means of a screw, *g*.

It is apparent that the arm C can be made in separate parts, arranged in parallel planes, with their seats at the toggle-rod end coincident in axes, or side by side; but I prefer to construct the arm C in one piece, as shown.

The jaws are caused to retreat and remain in proper engagement with the toggle by the tension-rods R′ and springs S, as usual.

Having described my invention, what I claim as new is—

1. A crusher provided with two jaws, combined with a toggle, the part whereof on one side has a single seat upon the toggle-rod and separate seats upon said jaws, whereby said jaws are caused to advance alternately, one during the upstroke and the other during the downstroke of the toggle-rod, substantially as set forth.

2. In a crusher, two jaws combined with a toggle, one arm whereof is constructed at one end with separate seats upon said jaws and at the other end with a single seat upon the toggle-rod, as and for the purpose set forth.

3. The crusher provided with two vibrating jaws, combined with an actuating-toggle, C D, the arm C whereof has two knuckles, c' c^2, fitted to corresponding sockets c^3 and c^4 in the backs of the jaws A B, as and for the purpose set forth.

CHARLES M. BROWN.

Witnesses:
H. H. SCOVILLE,
COLLINS EATON.