

(No Model.)

2 Sheets—Sheet 1.

C. E. WYMAN.
ROCK CRUSHER.

No. 517,717.

Patented Apr. 3, 1894.

Fig. 1.

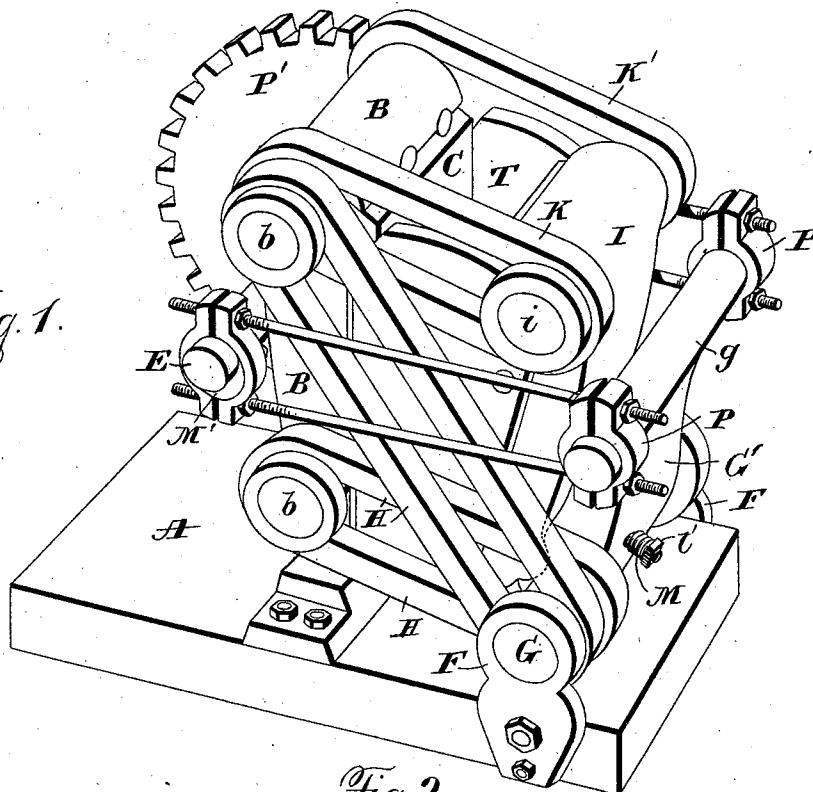
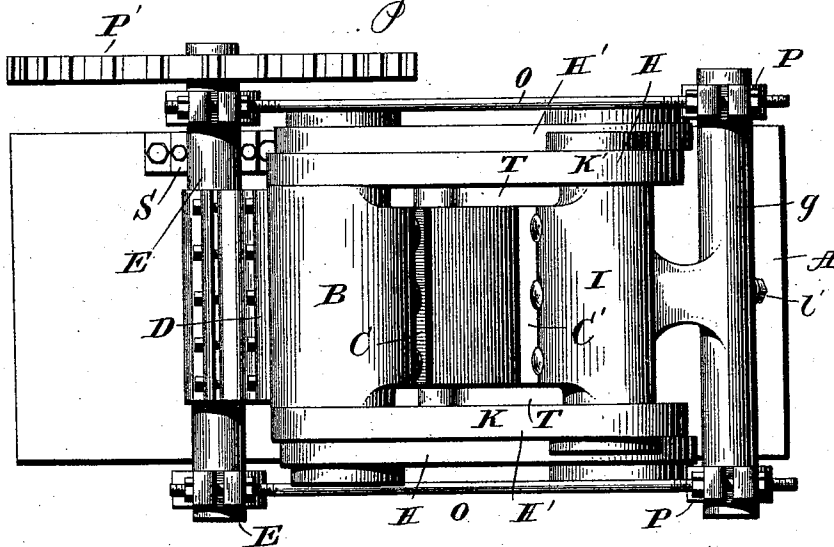


Fig. 2.



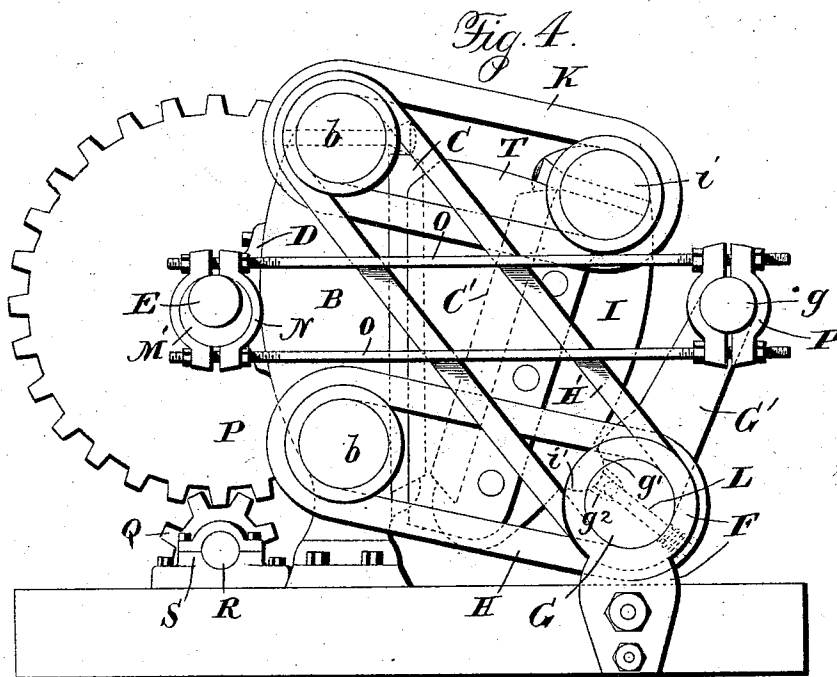
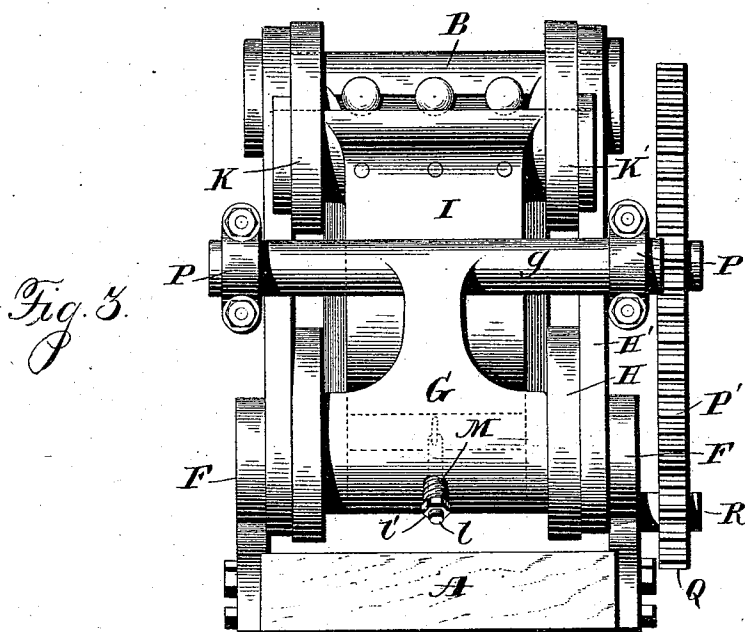
Witnesses:
Jas. E. Hutchinson.
Henry C. Hazard

Inventor.
Charles E. Wyman, by
Erindred Russell, his atty.

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UNITED STATES PATENT OFFICE.

CHARLES E. WYMAN, OF MARTINSBURG, ASSIGNOR OF ONE-HALF TO JOHN H. STOTSENBERG, OF NEW ALBANY, INDIANA.

ROCK-CRUSHER.

SPECIFICATION forming part of Letters Patent No. 517,717, dated April 3, 1894.

Application filed July 20, 1893. Serial No. 481,052. (No model.)

To all whom it may concern:

Be it known that I, CHARLES E. WYMAN, a citizen of the United States, residing at Martinsburg, in the county of Washington, and in the State of Indiana, have invented certain new and useful Improvements in Rock-Crushers; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, in which—

Fig. 1 is a perspective view of my machine as constructed for use. Fig. 2 is a plan view of the same. Fig. 3 is an end elevation of said machine, and Fig. 4 is a side elevation, the full lines showing one position of the operative parts and the dotted lines another position of the same.

Letters of like name and kind refer to like parts in each of the figures.

The design of my invention is to increase the efficiency of a rock crusher and to lessen its weight without decreasing its strength and durability so as, thereby, to render it readily portable and suitable for use in the construction of roads, to which end my said invention consists in the crusher having the construction and combination of parts hereinafter specified and claimed.

In the carrying of my invention into practice, I employ a frame that consists mainly of a rectangular base A to which is secured near its longitudinal center a standard B that extends vertically upward and upon each of its side edges is provided with two cylindrical bosses *b* and *b'*, respectively, which extend horizontally outward from its upper end and from near its lower end, as shown. Upon the front side of said standard is bolted a jaw-face C of chilled iron, while to its rear side is secured a box D that serves to journal a shaft E.

Between the standard B and the front end of the base A there is secured to each side edge of the latter a plate F which projects vertically upward and within the upper end of the same and the upper end of the opposite plate F is journaled a rock-shaft G having an upwardly extending arm G' that at its upper end is provided with a cross-bar *g* whose ends extend somewhat beyond the sides of said base. Between each of the bosses *b*

and *b'* and the corresponding end of said rock shaft is a link H and H', respectively, which links operate to insure the pivotal position of said shaft with relation to the standard B and to relieve the bearings F and F' from all strain.

Within the space between the standard B and the rock-shaft G is a jaw I which has the general form shown and upon its inner side has secured a chilled iron face C', that is similar to the jaw face C upon said standard. At its upper end, said jaw is provided with laterally extending trunnions *i* and *i'* around which and the bosses *b* and *b'* are secured links K and K' that operate as pivotal supports for the upper end of said jaw and insure the position of the same with relation to the upper portion of said standard. Upon the front side, near the lower end of the jaw I is formed or secured a semi-cylindrical rib *i'* which is arranged horizontally and engages with a correspondingly shaped recess *g'* that is formed in the inner side of the rock-shaft G. To such rib, at or near its longitudinal center, is secured a staple *g*² which from thence extends radially into a recess in said rock-shaft, where it is engaged by a hooked-end bolt L that extends outward through said shaft and is provided upon its projecting, threaded end *l* with a nut *l'* and between such nut and the contiguous face of said shaft is placed a spring M which exerts an outward pressure upon said bolt and operates to hold said rib *i'*, with a yielding force, in engagement with said recess *g'*. Secured upon said shaft E are two eccentrics M' and M' which are located at or near its ends, just outside of the plane of the links H and H', and are each encircled by a strap N that is connected by rods O and O' with a similar strap P which is journaled upon the corresponding end of the cross-bar *g* of the rock-shaft G. the arrangement being such that by the rotation of said shaft E, said rock-shaft will be turned back and forth within its pivotal bearings and the jaw I given a general vertical motion and its lower end moved toward and from the jaw C. Said shaft E is driven by means of a gear wheel P' which is secured upon one end thereof and meshes with a pinion Q upon a second shaft R which latter

shaft is journaled in suitable bearings S and S upon the bed-plate A and suitably connected with a source of power.

For the purpose of preventing the stone from falling sidewise from between the jaws, a heavy plate of chilled iron T is attached to each side of the movable jaw I and from thence extends rearward beside the fixed jaw a distance sufficient to cause it at all times to entirely cover the space between said jaws.

In operation the jaws have a rasping as well as a crushing motion and their resultant action secures a materially better effect with a given amount of power than could be obtained were the crushing motion alone employed. The frame constructed as shown is very light in weight while possessing great strength, there being no superfluous material and the metal being so disposed as to enable each portion to sustain the maximum strain without injury.

Having thus described my invention, what I claim is—

1. In a stone-crusher, the combination of a stationary jaw, a movable jaw, a link extending from the upper end of one jaw to the upper end of the other, and pivoted to both, to permit the movable jaw to move vertically, a rock shaft, and connections between the latter and the lower portion of the movable jaw, whereby the latter is moved toward and from the other, and vertically substantially as and for the purpose specified.

2. In a stone-crusher, the combination with the jaws thereof the shaft for vibrating one relative to the other, of journals for said shaft, and links extending from relatively fixed points to such shaft, to support the same substantially as and for the purpose shown.

3. The stone-crusher frame, consisting of a bed or base, a standard which constitutes or supports the stationary jaw, journal bearings for the actuating rock-shaft and links that connect such standard with said rock-shaft and with the movable jaw, substantially as and for the purpose set forth.

4. The stone-crusher described consisting of the bed-plate, the standard which constitutes or supports the stationary jaw, the rock-shaft, the movable jaw pivotally connected near one end to the periphery of such shaft, the links that connect the upper end of said movable jaw with the standard, the links which connect said standard with said rock-shaft, the driving shaft provided with eccentrics and the straps and rods that connect said eccentrics with the rock-shaft, substantially as and for the purpose shown and described.

In testimony that I claim the foregoing I have hereunto set my hand this 24th day of May, 1893.

CHARLES E. WYMAN.

Witnesses:

CHARLES F. VERY,
ERNEST WALKER.