(No Model.)

P. KIRKWOOD, J. WEAR & J. MURDOCK.

ORE BATTERY.

No. 264,305. Patented Sept. 12, 1882.

Fig. 2.

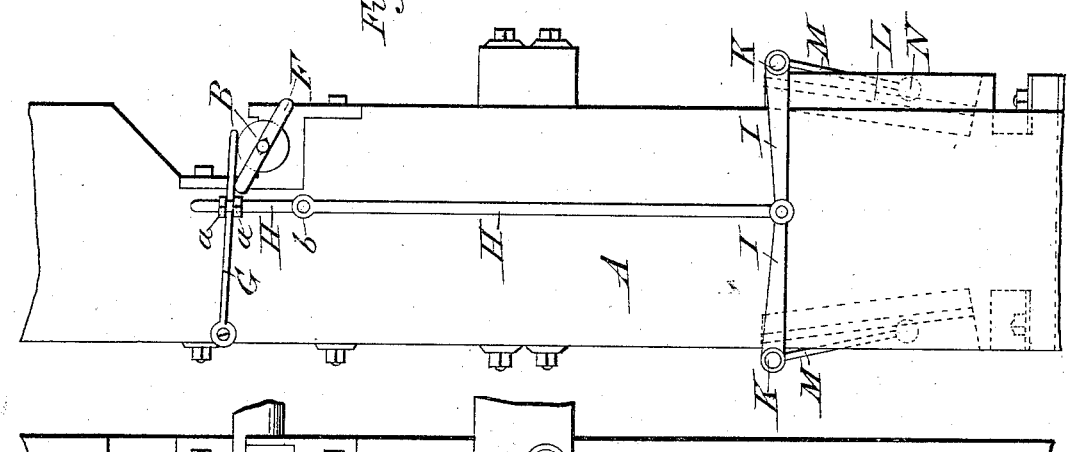
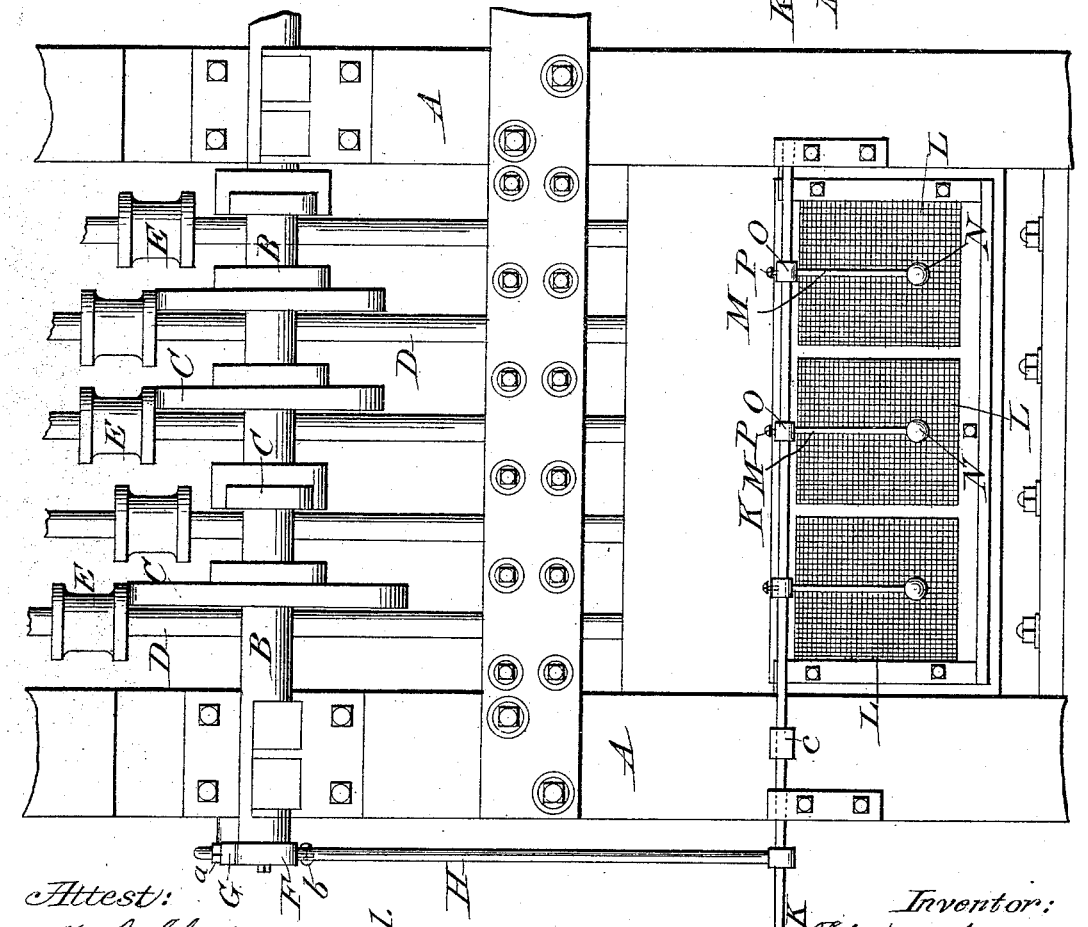


Fig. 1.



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UNITED STATES PATENT OFFICE.

PETER KIRKWOOD AND JOSEPH WEAR, OF BUTTE CITY, MONTANA TERRITORY, AND JAMES MURDOCK, OF PARK CITY, UTAH TERRITORY.

ORE-BATTERY.

SPECIFICATION forming part of Letters Patent No. 264,305, dated September 12, 1882.

Application filed May 24, 1882. (No model.)

To all whom it may concern:

Be it known that we, PETER KIRKWOOD and JOSEPH WEAR, of Butte City, Silver Bow county, Montana Territory, and JAMES MURDOCK, residing at Park City, in the county of Summit and Territory of Utah, citizens of the United States, have invented certain new and useful Improvements in Ore-Batteries; and we do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters and figures of reference marked thereon, which form a part of this specification.

This invention relates to improvements in ore-batteries or machines for stamping and crushing ores and separating the pulp; and it consists in the construction and arrangement of parts, as hereinafter more fully described and claimed.

In the annexed drawings, illustrating the invention, Figure 1 is a partial side view of an ore-battery embodying our improvements, and Fig. 2 is an end view of the same.

Like letters of reference indicate like parts.

The letter A denotes the battery-posts.

B is a horizontal shaft, carrying cams C, and D shows the stamp-stems, which are provided with collars E, the cams being so arranged upon the shaft as to come in contact with the collars, thus raising the stamp-stems and allowing them to fall at proper intervals in the ordinary manner.

On one or both ends of the shaft B is a cam, F, that is adapted to come in contact with and raise the end of a lever, G, which is pivoted to the battery-post, as shown in Fig. 2. The lever G is passed through and secured in an elongated slot in the upper end of a jointed connecting-rod, H, the lower end of which is is pivoted to the inner ends of the arms I I, which are secured at their outer ends to the horizontal rock-shafts K K, that are journaled one on each side of the battery-frame above the screens L L.

To the rock-shafts K, which are preferably square in cross-section, are attached at suitable intervals the beater-rods M, which carry at their lower ends the elastic hammers N, that are composed of rubber or other suitable material. The rods M are provided at their upper ends with collars O, having square openings adapted to fit the shafts K, and are secured thereon by means of the set-screws P, so as to be readily adjusted to any desired position. These hammers are preferably arranged at or about the center of the screens L L, as shown in Fig. 1, and by striking the same will cause the fine pulp to pass outward, while the coarse pulp lying against the inside of the screens is forced back under the stamps. The screens are thus cleansed at each stroke of the hammers, and the capacity of the battery is largely increased. Each hammer is arranged to give one blow for each blow of the corresponding stamp, and the cam F is so adjusted as to cause the hammers to strike their respective screens while the stems are rising, so that each screen will be clean to receive the pulp driven outward by the next blow of the stamp.

It will be seen that when the shaft B is revolved by any suitable power applied thereto the cams C will cause the stamp-stems D to reciprocate, while the cam or cams F, acting upon the lever or levers G, which in turn raise and lower the rod or rods H, will cause the arms I to impart a rocking movement to the shaft K, thus actuating the hammers.

The lever G, which is passed through a slot in the upper section of the connecting-rod H, is adjustably secured to said rod by means of nuts *a a*, so that the strike of the hammers may be readily regulated.

It will be observed that the upper and lower sections of the connecting-rod H are connected by a pivot-joint, *b*, which enables the rod to be reciprocated vertically in a uniform manner, thereby imparting a regular movement to the hammers attached to the rock-shafts. Each of these rock-shafts is provided with a coupling, *c*, so that the shaft and hammers may be readily detached when desired.

Having thus described our invention, what we claim as new, and desire to secure by Letters Patent, is—

1. In an ore-stamp battery, the combination,

with the screens L, of the rock-shafts K, having hammers N adjustably attached thereto, arms I, secured to shafts K, connecting-rod H, and pivoted lever G, and mechanism for operating said lever and attached devices, substantially as shown and described.

2. The combination of the battery-posts A, shaft B, having cam F, the pivoted lever G, jointed connecting-rod H, rock-shafts K, arms I, secured thereto and pivoted to the connecting-rod, and the hammers N, having rods or handles M, adjustably secured to the rock-shafts and adapted to strike the screens at intervals, substantially as described.

In testimony whereof we affix our signatures in presence of two witnesses.

PETER KIRKWOOD.
JOSEPH WEAR.
JAMES MURDOCK.

Witnesses to P. Kirkwood and Joseph Wear:
L. E. DANJEN,
CHARLES S. WARREN.

Witnesses for James Murdock:
DAN MACDONALD,
THOMAS MORTON.