S. L. MARSDEN
Stone-Breaker.

No. 198,849. Patented Jan. 1, 1878.

fig 1

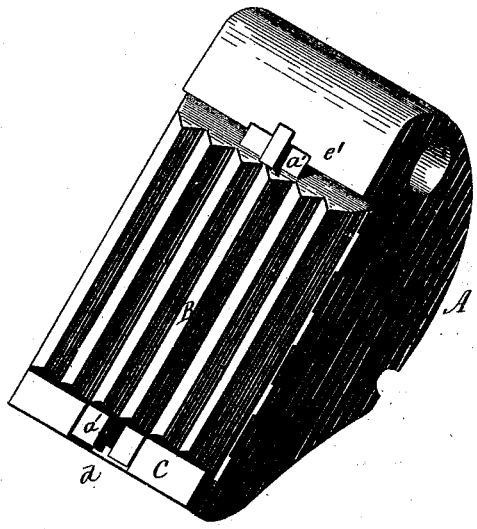


fig 2

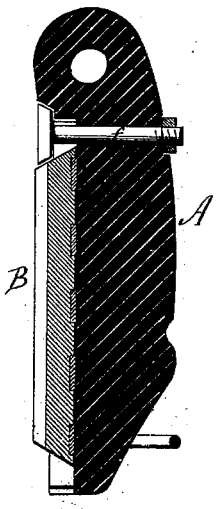
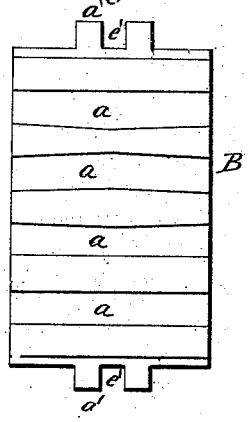


Fig 3



Witnesses.
J. H. Shumway
M. A. Nilson.

Saml L. Marsden
Inventor
By atty.
Wm. G. Eaton

UNITED STATES PATENT OFFICE.

SAMUEL L. MARSDEN, OF NEW HAVEN, CONNECTICUT, ASSIGNOR TO BLAKE CRUSHER COMPANY, OF SAME PLACE.

IMPROVEMENT IN STONE-BREAKERS.

Specification forming part of Letters Patent No. **198,849**, dated January 1, 1878; application filed July 27, 1877.

To all whom it may concern:

Be it known that I, SAMUEL L. MARSDEN, of New Haven, in the county of New Haven and State of Connecticut, have invented a new Improvement in Stone-Crushers; and I do hereby declare the following, when taken in connection with the accompanying drawings and the letters of reference marked thereon, to be a full, clear, and exact description of the same, and which said drawings constitute part of this specification, and represent in—

Figure 1, perspective view; Fig. 2, vertical central section; Fig. 3, rear view of the jaw-plate.

This invention relates to an improvement in the construction of the jaws for stone-crushing machines, such as Blake crusher, and applicable to others. The jaw-plate or working faces of the jaws wear rapidly and require frequent changing. The fitting of the jaw-plate to the jaws is an expensive part of the machine. Various devices have been resorted to to facilitate this fitting, such as casting the jaws onto wrought-iron bars, to be subsequently planed, (it will be understood that the jaws require to be chilled, hence the metal of the jaw is too hard throughout to work the rear surface advantageously;) but in practice it is difficult to prevent the springing of the jaw-plate when the surface of the wrought metal is cut away, as in fitting the plate to the jaw.

The object of this invention is to avoid these difficulties; and it consists principally in casting the jaw-plate with several recesses on the rear surface, and then filling those recesses with "Babbitt" or similar metal, and also in the method for securing the jaw-plate as hereinafter described.

A represents one of the movable jaws of a Blake crusher. Across its face is a recess, dovetail or hook shaped at the bottom, as shown; B, the jaw-plate, the working surface of which is formed in ribs, or any of the known forms. The rear surface of the jaw-plate is cast with recesses *a*, more or less in number, and of any desirable shape, a quarter of an inch in depth, more or less. These recesses are subsequently filled with Babbitt or other similar metal, and so as to project above the rear surface of the plate.

The shape of the recesses should be irregular, so as to interlock the filling with the body. Then this soft metal is planed or dressed to fit the jaw-plate to its seat in the jaw.

The filling metal being applied after the jaw-plate is chilled, all liability to spring or change the shape of the plate is avoided, and the soft metal is more easily worked than the iron bars heretofore used.

When jaw-plates are cast upon wrought-iron bars to accomplish the same purpose, a great strain is necessarily brought upon the plate, as it shrinks upon the iron bars. This also tends to an easy breaking of the jaw, as by concussion or otherwise, which is entirely avoided by the use of the filling metal described.

It is desirable and practically essential that the jaws should be made reversible—that is, so that, when the lower end has been worn away, the jaw-plate may be turned end for end, and present a new and practically unworn surface at the bottom, where the greatest wear comes. For this purpose the upper and lower ends are shaped alike, and to correspond to the dovetail or hook shaped portion C on the jaws, so that either end may fit that seat.

At the center or other convenient point the jaw-plate is constructed with a lug, *a'*, and the seat C, at the lower end of the jaw, is constructed with a corresponding cavity, *d*; and there is also at the upper end a similar cavity, *e'*, to receive the lug at that end of the jaw-plate. These lugs and cavities locate the jaw-plate in its proper relative position, and prevent transverse misplacement. The lugs *a'* are divided, or formed with a recess, *e'*, and at the upper end of the jaw a perforation is made corresponding to the recess *e'*, and through which a bolt, *f*, is passed, the head of which overhangs the end of the jaw, as seen in Fig. 2, and so as to secure it in its place, this simple bolt being all the security that is necessary in addition to the lugs and cavities before mentioned.

In previous constructions the jaw-plate has

rested in a seat at the bottom, and been held at the top by a clamp. No claim is therefore made to such construction broadly.

I claim—

1. The method, herein described, of seating the jaw-plates of stone-crushers, consisting in casting the jaw-plate with recesses in its back, and filling said recesses with soft metal, and subsequently dressed off to form the bearing-surface, substantially as described.

2. In a stone-crusher, the combination of the jaw *x x*, the jaw-plate, constructed with projecting lugs at both ends, and the jaw with a seat for said plate at the lower end, and a cavity to receive either of said lugs, with a bolt through the jaw, the head of which engages the upper lug, substantially as described.

SAML. L. MARSDEN.

Witnesses:

JOHN E. EARL,

H. A. KITSON.