

H. H. HARVEY.
Bush-Hammers.

No. 158,074.

Patented Dec. 22, 1874.

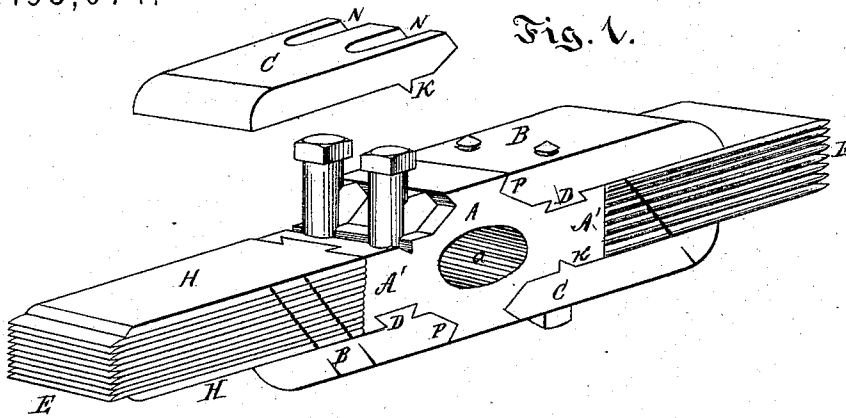


Fig. 2.

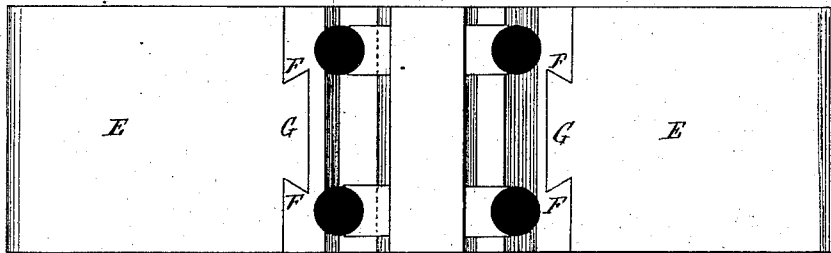


Fig. 3.

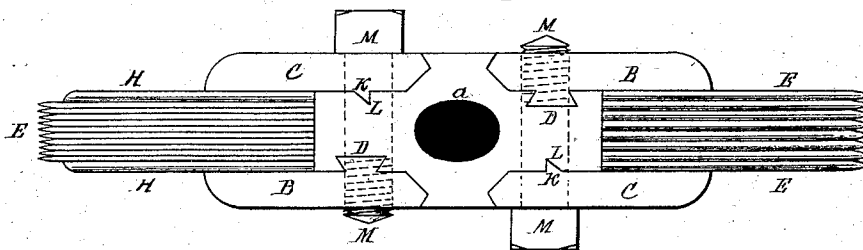
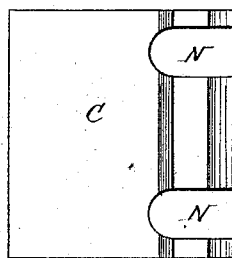


Fig. 4.



Witnesses:

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Inventor:

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UNITED STATES PATENT OFFICE.

HENRY H. HARVEY, OF AUGUSTA, MAINE.

IMPROVEMENT IN BUSH-HAMMERS.

Specification forming part of Letters Patent No. 158,074, dated December 22, 1874; application filed December 11, 1874.

To all whom it may concern:

Be it known that I, HENRY H. HARVEY, of Augusta, in the county of Kennebec and State of Maine, have invented certain new and useful Improvements in Bush-Hammers, of which the following is a specification:

The present invention relates to certain improvements in millstone-hammers or furrowing-tools, designed to render the same more effective and superior than others heretofore constructed. The invention consists chiefly in a millstone-hammer, comprising a head or "poll," clamping-jaws, a series of cutters or blades, and counter-jaws, the cutters being provided with dovetail projections at their rear ends, which fit into a correspondingly-shaped groove or seat cut in the vertical end pieces of the hammer-head, and the clamping-jaws being located at the top and bottom sides of the head for securing the cutters or blades between the same. The jaws are detachably secured to the head, one pair by means of dovetail projections and grooves and bevel-surfaces on the head and jaws, and the other pair of jaws by means of bevel-surfaces, angular ribs, and grooves; and bolts passing the jaws and hammer-head. The invention further consists in the employment of supplementary or counter jaws or plates, which are interposed between the main clamping-jaws and the cutters or blades, for the purpose of strengthening the same and for removing the direct pressure of the clamping-jaws from the cutters. The invention further consists in making the cutters of a tapering or wedge-shaped form, or thicker at the rear than at the front, so as to strengthen the same and prevent their working loose in a forward direction when the hammer is in use. The invention finally consists in providing the jaws, which are removed for inserting and removing the cutters, with slots or open-ended bolt-holes, so that they can be removed by simply loosening the fastening-bolts, which pass through both jaws and head, detachable bearing-blocks being used for closing the open ends of the bolt-holes, when the jaws are in position.

In the accompanying drawing, Figure 1 is a perspective view of a millstone-hammer, constructed according to my invention, one of the jaws being raised. Fig. 2 is a plan or top

view, with the clamping-jaws and their fastening-bolts removed. Fig. 3 is a side elevation of my improved hammer, and Fig. 4 is a detached plan view of one of the clamping-jaws.

The head or poll A of the hammer is made solid, and is provided with a handle-opening, a, and with end extensions A', which support the detachable jaw-plates B B C C in such a manner as to cause the same to be flush or even with the main or central portion of the head. The jaws B B are provided with dovetail projections D on their under sides, which fit into corresponding grooves cut in the opposite sides of the extensions of the hammer-head. By these means the jaws B, when fitted in place, will be retained in position independently of other fastening devices. The jaws C C are removable, to permit the cutters or blades E, clamped between the same and the jaws B B, to be inserted into a seat or groove, F, cut in the end faces of the extensions of the hammer. Said grooves or seats F are formed by means of a planing or grooving tool, and it is principally for permitting the use of such a tool that the jaws B B are made detachable or separate from the head. The groove or cutter-seats formed for the head are made of a dovetail shape, and the rear ends of the cutters E are provided with dovetail projections or extensions G, which fit into said seats. Each series or set of cutters is interposed between two supplementary or counter jaws, H H, which are made considerably thinner than the main jaws. These counter-jaws are also provided with dovetail projections, which fit into the seats in the head, in the same manner as the cutters or blades. The object of these counter-jaws is to strengthen and bind the cutters together and to remove the direct pressure of the jaws from the same. The jaws C C are provided on their reverse faces with angular ribs K, which fit into correspondingly-shaped grooves L, cut in the extensions of the hammer-head. The object of these ribs and grooves is to prevent the jaws from slipping when the fastening-bolts M are set against them. The fastening-bolts are passed through the holes N in the clamps C C, which holes are cut out at their ends, then through the head extensions, and finally the screw into the clamps B B. Both clamps and the entire

series of cutters are thus secured by the same bolts. The object in using the open bolt-holes is to permit the jaws C to be removed by simply loosening the bolts, and without changing the position of the other parts and that of the bolts. The vertical end faces of the central or main portion of the hammer-head are provided with inclined surfaces or under-cut recesses for the reception of the correspondingly reversely-beveled ends P of the jaws B and C. By fitting the jaws in the manner set forth their vertical displacement is rendered impossible, and a perfect and strong finish of the tool is also produced thereby. The cutters E are made thin at their front or cutting edges, which project beyond the counter-clamps, and they gradually increase in thickness toward their rear ends, so as to present a tapering or wedge-like appearance. When cutters of the form described are fitted and tightly clamped between the retaining-jaws it will be impossible for them to work forward even in the slightest degree. The bolt-slots in the clamping-plates C C are closed, when the bolts are in position, by means of detachable bearing-blocks P, which have tapering or beveled ends, the same

as the adjacent ends of the jaws and for a like purpose.

What I claim is—

1. The combination of the head A, having extensions A' and dovetail seats F in its end faces, with the detachable clamping-jaws B C, fastening-bolts M, and cutters or blades E, provided with dovetail projections, substantially as herein described.

2. The clamping-jaw B, provided with a dovetail projection and beveled rear end, and the head A, having a dovetail seat and beveled groove, in combination with the cutters E and clamping-jaws C, substantially as described.

3. The jaw C, having bolt-holes laterally opened, in combination with the head A, cutters E, bolts M, and jaw B, substantially as described.

In testimony that I claim the foregoing I have hereunto set my hand.

HENRY H. HARVEY.

Witnesses:

W. S. CHOATE,

A. L. PERRY.