(Model.)

J. BORTON & P. L. DAWSON.

MINING TOOL.

No. 262,728. Patented Aug. 15, 1882.

Fig. 1.

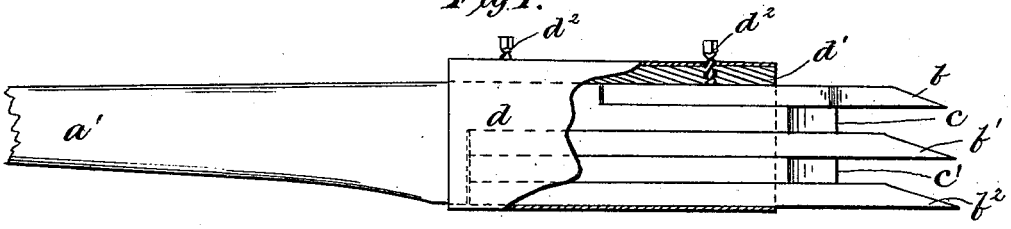


Fig. 2.

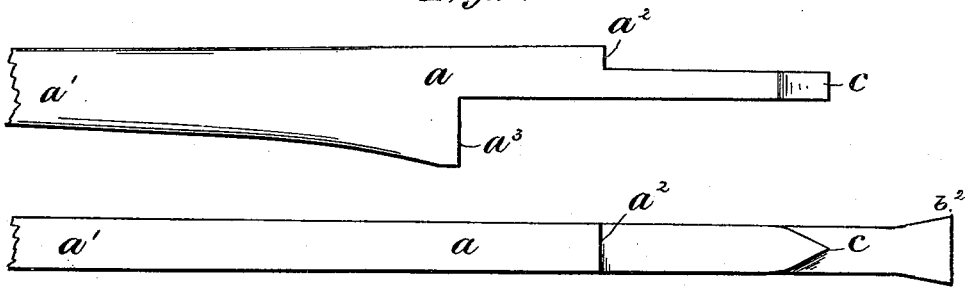


Fig. 3.

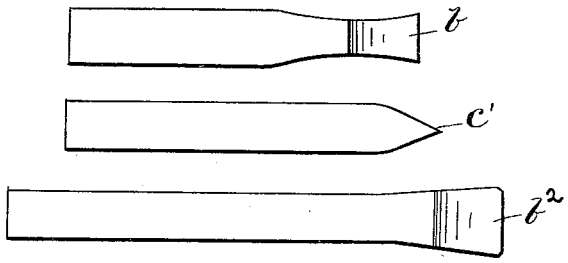
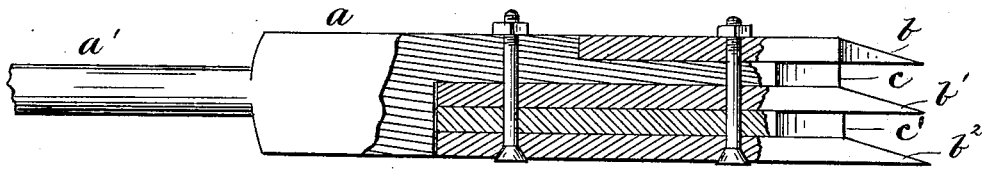


Fig. 4.



Witnesses
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UNITED STATES PATENT OFFICE.

JOB BORTON AND PALMER L. DAWSON, OF BARNESVILLE, OHIO.

MINING-TOOL.

SPECIFICATION forming part of Letters Patent No. 262,728, dated August 15, 1882.

Application filed February 18, 1882. (Model.)

To all whom it may concern:

Be it known that we, JOB BORTON and PALMER L. DAWSON, citizens of the United States, residing at Barnesville, in the county of Belmont and State of Ohio, have invented certain new and useful Improvements in Mining-Tools; and we do hereby 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 letters or figures of reference marked thereon, which form a part of this specification.

This invention relates to improvements in drills or picks employed in coal-mining; and it consists in the construction and arrangement of the several parts, as will be hereinafter fully described, and pointed out in the claims.

In the drawings, Figure 1 is a side view with part of the sleeve or collar broken away to show the position of the several bits and separating-blocks. Fig. 2 shows side and plan views of the stock. Fig. 3 shows the bits and separating-blocks in detail; and Fig. 4 shows a modification in the manner of securing the bits, stock, &c., together. In this view we also show one of the end bits pointed, as will be described.

a is the stock, formed on the end of handle *a'*. On one edge of this stock is formed a shoulder, a^3, and on the opposite edge and in advance of the shoulder a^3 is formed a shoulder, a^2, these shoulders being square, as shown in Fig. 2. We extend the stock forward between shoulders a^2 a^3 to provide the extension *c*. The end of this extension *c* is beveled equally on its opposite sides to an edge in line with the shoulders a^2 a^3, as clearly shown in Fig. 2. The shoulder a^2 is formed on what, for convenience of reference, we call the "upper edge" of the stock, and it is made in advance of the shoulder a^3, so that when the sleeve, hereinafter described, is applied thereto the set-screws d^2 d^2 will bear one on the stock and the other on the cutter or bit, hereinafter described, forming a connection between the stock and bit *b*, as well as clamping them one to the other, and giving a more secure fastening than is otherwise attained.

b is a bit the outer end of which may be pointed or formed to an edge, as shown, while its rear end is abutted against the shoulder a^2.

b' b^2 are cutters or bits having their outer ends sharpened to an edge at right angles to the edge of extension *c*, and their rear ends abutted against shoulder a^3. The cutting-edge of cutter b^2 is made broad, and its sides are beveled backward, as shown in Fig. 2.

d is a sleeve made of sufficient length to extend from slightly in rear of shoulder a^3 nearly to the beginning of the bevel on the forward ends of the separating-blocks *c*, as shown. In the inner side of the top of said sleeve is made fast a block, *d'*, to furnish a bearing for the threads of set-screws d^2 d^2, as shown. The object of this sleeve is to secure the bits and separating-blocks rigidly together. Through the sleeve and block *d'* we form threaded openings, in which are placed the set-screws d^2 d^2, the one of which presses on the top bit and the other on the stock *a*, and as they are tightened down they draw up the opposite side of sleeve and clamp the several parts securely together. By releasing the screws the several parts may be detached. We prefer to construct this sleeve of sheet metal, and when so constructed it is desirable that a block, *d'*, of wood or other suitable material, should be provided to furnish bearing for the threads of screws d^2; but it will be understood we could construct this sleeve of metal, and make the top part heavy enough to furnish bearing for the threads of said screws.

In Fig. 4 is shown a modification in the construction of the device, wherein, instead of employing the sleeve *d*, we clamp the bits, separating-blocks, and stock together by bolts passed through them and secured by nuts, as shown. We prefer, however, the construction shown in Fig. 1, and hereinbefore described.

b b' b^2 are the bits. They are formed with the cutting-edges arranged parallel to each other, and are cut away slighly at their sides, so as to give proper clearance.

c' is a filling-piece placed between the cutters b' b^2, and having its rear end abutted against the shoulder a^3, and its forward end beveled to an edge corresponding to and in line with the edge of extension *c* and at right angle to the cutter b' b^2. This piece c' and the extension *c*,

being placed in rear of the edge of the cutters and formed at right angles thereto, serve to prevent clogging of the cutters by lumps of coal being held between them.

The staff or handle of our tool may be made of any length desired, according to the character of the work to be performed, and it will often be advantageous to form the stock with a socket and means for clamping the end of a handle, so that when working in close quarters in a mine a short handle may be used at first, and then a longer one substituted as the hole is drilled deeper.

Our device is especially useful in making an inboring in coal where it is desired to cut a groove or trench under the bulk of the coal that is intended to be removed. It is often desired to make an inboring three or four or more feet deep, and it is very laborious work to do this with a pick, besides the pick will cause a great deal of slack, which is avoided by our device, as our tool cuts a clean groove and produces very little slack.

A great inconvenience is met by the breaking of tools and dulling of their cutting-edges, and in our device we have constructed the tool so that when one of the bits becomes broken or dulled it can be replaced in a moment by another, and where a miner has several bits he can be working with one while the others are being sharpened, and loses only the few minutes time required to change the bits.

We have shown only three cutting-bits and two separating-blocks; but it will be understood that more can be employed when desired.

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

1. The combination of the stock a, having on one edge the lateral shoulder a^3 and on its opposite edge the lateral shoulder a^2, formed on a line in advance of the shoulder a^3, and having an extension, c, beveled to an edge on the line with the shoulders a^2 a^3, the cutter b resting against the shoulder a^2, and a series of cutters, b' b^2, abutted against the shoulder a^3, and a removable piece, c', placed between the cutters b' b^2, and having its end beveled to an edge in line with the shoulders a^2 a^3, the cutting-edges of the extension c and piece c' being at right angles to the cutting-edges of the blades, and abutted against the flat sides of said blades and to a line intermediately between the edges thereof, and a clamping device, substantially as set forth.

2. The combination, with the stock a, having on one edge the lateral shoulder a^3 and on the opposite edge the lateral shoulder a^2, formed on a line in advance of the shoulder a^3, and a series of cutting and filling pieces abutted against the shoulders a^2 and a^3, of an adjustable sleeve, d, placed over the end of the stock and over the cutters, and held by set-screws d^2 d^2, substantially as set forth.

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

JOB BORTON.
PALMER L. DAWSON.

Witnesses:
HARRISON BRADY,
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