J. W. BRANCH.

Saws.

No. 148,027. Patented March 3, 1874.

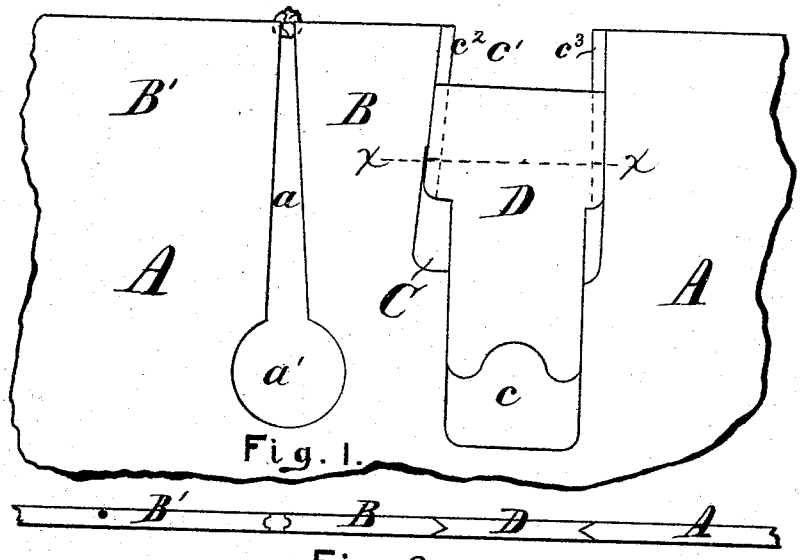

Fig. 1.

Fig. 2.

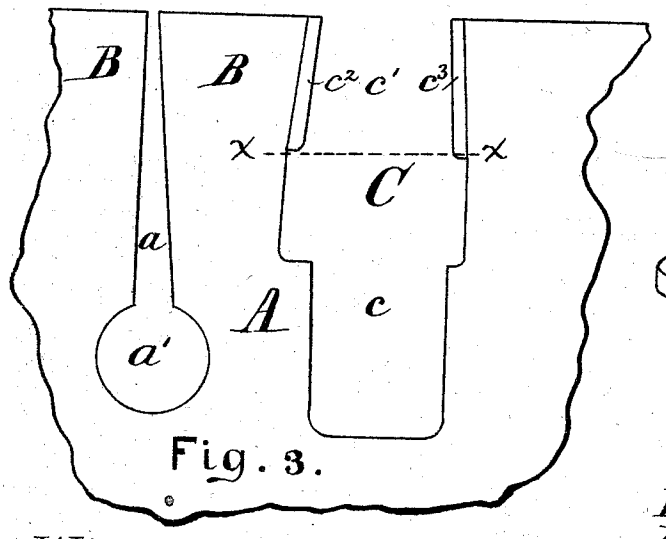

Fig. 3.

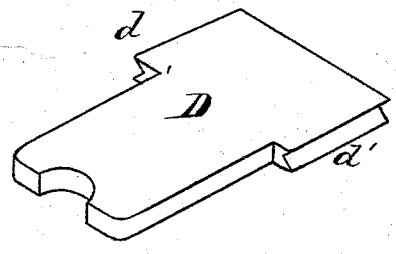

Fig. 4

Witnesses:
Charles Meisner.
J. W. Herthel.

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Joseph W. Branch
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UNITED STATES PATENT OFFICE.

JOSEPH W. BRANCH, OF ST. LOUIS, MISSOURI.

IMPROVEMENT IN SAWS.

Specification forming part of Letters Patent No. **148,027**, dated March 3, 1874; application filed December 8, 1873.

To all whom it may concern:

Be it known that I, JOSEPH W. BRANCH, of St. Louis, Missouri, have invented an Improved Saw, of which the following is a specification:

My invention relates to the combination, with an opening, in which the point or tooth is held in saw-plate, of part of the saw-plate, and inserted fastening device, all of which will now more fully appear.

Of the drawing, Figure 1 is a part of a saw-plate, showing my improvement as applied when used to hold a diamond and the like. Fig. 2 is an edge view of Fig. 1; Fig. 3, same view as Fig. 1, the inserted parts being left out; Fig. 4 being a perspective of the self-fastening device.

A is the saw-plate. I provide the saw-plate A with an opening, *a*. The opening *a* divides the saw-plate partially to the right and left, and forms my saw-plate holders B B′, as shown in Figs. 1, 2, 3. The opening *a* can terminate with a rounded base opening, *a′*, Figs. 1 and 3, so as to embrace an old curvature feature to prevent the tendency of the saw-plate, when used, from fracturing. From its base I, however, form the opening *a* to gradually narrow in its width until it reaches the outer edge of the saw-plate. In case of diamonds and similar mineral points, the gradual outer termination of the opening *a* is, therefore, such as to suit various sizes of said points, and form for same a seat, receptacle, or holder. The formation of the opening *a*, however, can readily be determined, and made as regards its relation to whatever it is intended to receive and hold. The opening *a*, created in saw-plate, has the further essential advantage of enabling me to utilize whatever spring action can be given to the divided or partial part of a saw-plate. The manner of my utilizing the spring action of the divided part of the saw-plate is to act as a force to more securely fasten and hold not only the diamond or other point or inserted tooth and the like, but also the inserted parts, which, specifically, are designed to act as fastening devices. In order, therefore, to make the divided part B of saw-plate to spring or operate in the direction of the point, as well as to utilize this movement to act as a fastening force to more securely hold an inserted fastening device, I further partially subdivide the said part B of saw-plate from the saw-plate A, or body proper, by the opening C, as shown in Figs. 1 and 3. The opening C I further form to adapt same to a self-fastening device, which it is intended to receive; hence said opening C consists of such constructive shape as, first, to receive an inserted device, and, second, to act as a means of permitting said inserted device to be made self-fastening. To receive an inserted device, the lower and greater part *c* of the opening C is designed, and consists of all that part of the opening C below the line *x x*, as indicated in Figs. 1, 3. D is the fastening device, and, in order to be inserted in the part *c* of the opening C, is of similar construction, shape, or outline as that of its opening. Here it will be noticed that I insert or lay the fastening device D in its receiving part, and this is done directly in the body of the saw-plate, in contradistinction to an insertion from its periphery inward. The device D, being thus merely laid in the body of the saw-plate, so far has but one direction in which to move, slide, or operate, and that is in the direction to the outer edge of the plate. In order, therefore, to cause the inserted device D, when acted upon in the direction of the periphery of the saw-plate, to act at same time as a self-fastening device, I form the remaining upper part c^1 of the opening C of such constructive shape as to gradually narrow from the line *x x* of its base until it reaches the outer periphery of saw-plate, as shown in Figs. 1 and 3. Further, to retain the fastening device D in the opening c^1, I form both its edges c^2 c^3 V-shaped, (see Figs. 1 and 3,) and correspondingly form the edges *d d′* of fastening device V-grooved. (See Fig. 4.) The edge c^2 of the upper part c^1 of opening C can be made still more forcibly to incline than that of its opposite edge c^1, this detail feature being to direct the fastening force or power on part of the fastening device still more directly and powerfully against its contiguous part plate-holder, or in the direction of its point.

The action of my improved saw is apparent. The point, tooth, and the like insertion is held in the body of the saw-plate. The fastening device is forced in the direction of the outer

edge of the saw. Therefore its very tendency or action on part of the saw to loosen is converted into a force, action, and power to more and more fasten said inserted device, which action or force at same time causes the holder part of saw-plate the more tightly, directly, and securely hold the inserted point. My invention, therefore, accomplishes a most direct, positive, and practical manner of securing and holding a diamond or other mineral point, tooth, and the like insertion for saw or similar purposes.

What I claim is—

The combination of saw-plate A, having an opening, *a*, parts of plates B B′, openings C *c* c^1, and fastening device D, to operate as and for the purpose set forth.

In testimony of said invention I have hereunto set my hand in presence of witnesses.

JOSEPH W. BRANCH.

Witnesses:
WILLIAM W. HERTHEL,
CHARLES F. MEISNER.