

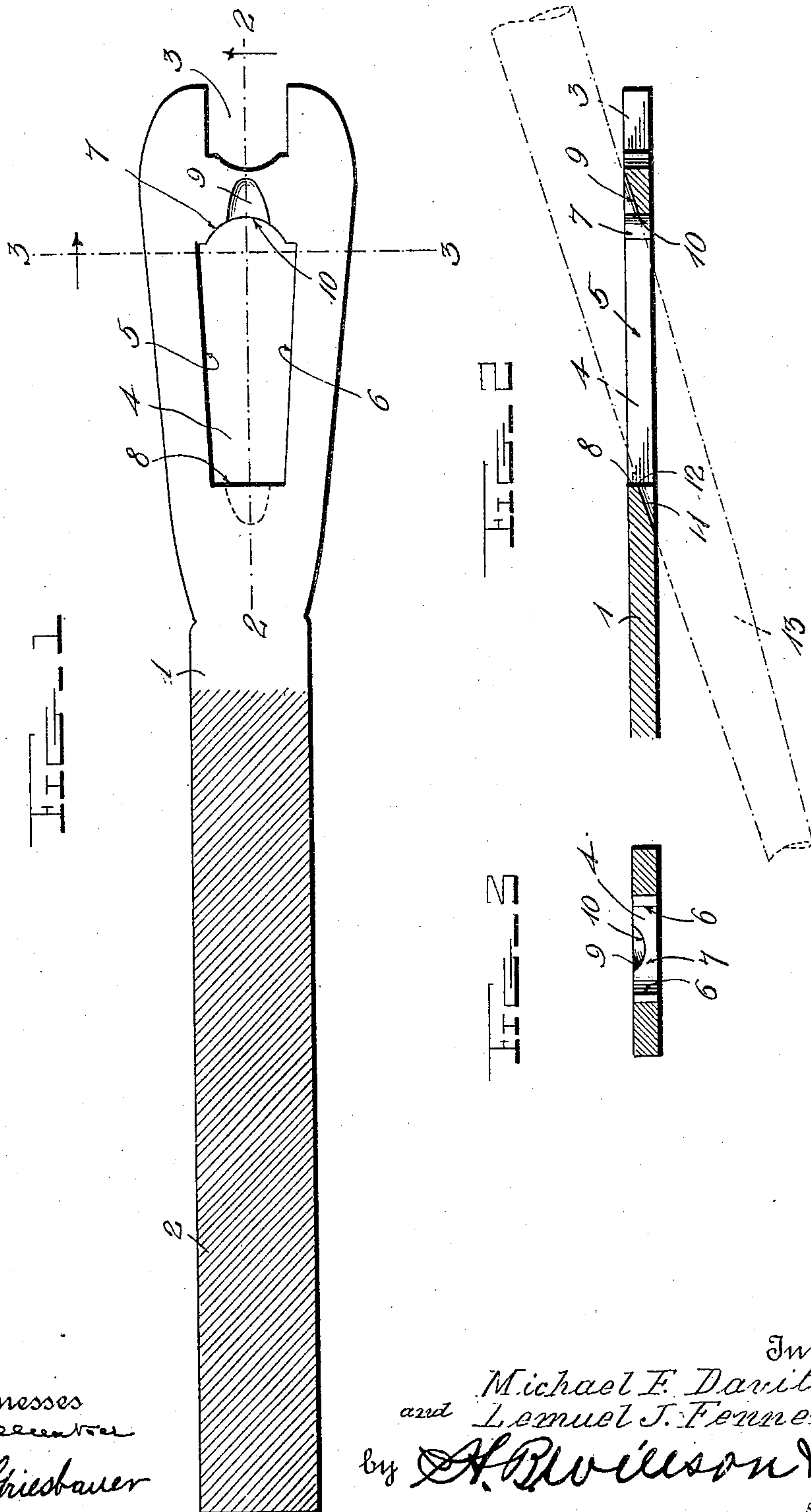
M. F. DAVITT & L. J. FENNER.

COMBINATION TOOL.

APPLICATION FILED NOV. 25, 1907.

898,839.

Patented Sept. 15, 1908.



Witnesses

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# UNITED STATES PATENT OFFICE.

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## COMBINATION-TOOL.

No. 898,839.

Specification of Letters Patent.

Patented Sept. 15, 1908.

Application filed November 25, 1907. Serial No. 403,776.

*To all whom it may concern:*

Be it known that we, MICHAEL F. DAVITT and LEMUEL J. FENNER, citizens of the United States, residing at Dickson City, in the county of Lackawanna and State of Pennsylvania, have invented certain new and useful Improvements in Combination-Tools; 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.

This invention relates to hand tools, and has for its object to provide a tool of this kind wherein is combined a wrench and a device for cleaning the needles used by miners in putting fuses in blasting charges, the tool being provided with a flat file, which serves as a handle.

Herein we have described a preferred embodiment of our invention, and while we have mentioned minute details, we do not limit ourselves to these, as the details and proportions may be greatly varied without departing from the spirit and scope of the invention.

In the annexed drawing, forming a part of this specification, and in which like reference numerals refer to like parts throughout the several figures;—Figure 1 is a plan view; Fig. 2 is a longitudinal sectional view; and Fig. 3 is a section on the line 3—3 of Fig. 1, looking in the direction of the arrow.

As shown, our combination tool consists of a shank 1, provided at one end with a flat file, which serves as a handle, and at the other end with an enlarged head, having an open-ended wrench socket 3 and an inclosed tapering combined wrench and cleaning socket 4. The socket 4 is bounded on its sides by two nut receiving faces 5, 6, converging toward the handle end of the slot. The outer end of the socket 4 is provided with a rounded face 7, and the handle or inner end is provided with a squared face 8.

Beginning on the flat face of the enlarged head of the tool and passing into the rounded face 7, is a cut-away portion, forming a curved surface 9. The surface 9 is an irregular segment of a cylindrical surface, lying at an angle to the length of the tool, as shown. The meeting of this surface with the curved face 7 forms a cutting edge 10. The face 8 is cut by a similar curved surface 11 lying on the opposite flat side of the tool, the meeting of the face 8 and the curved surface 11, forming another cutting edge 12. The cutting edges 10 and 12 are so disposed that they

both may engage at the same time the surface of a miner's fuse needle 13, passed diagonally through the opening 4. On account of the dampness of the mines, this needle becomes rusted, and it is very necessary that some efficient means be provided to clean the same. A needle placed through the opening 4 as above described, is quickly and effectually cleaned of all rust or foreign substances.

In the work of blasting in mines, the miners' implements are, for obvious reasons, kept several hundred feet from where the blast is to be made, and it is highly desirable to provide a small compact tool which can be easily and quickly carried away in the pocket before the blast explodes. Our invention provides such a device, and also one which can be easily and cheaply manufactured, and which will be strong and durable.

Having described our invention, what we claim is:—

1. In a device of the class described, a shank having at one end a handle and having an enlargement at the other end, said enlargement having openings adapted to receive nuts, one of said openings comprising a tapering slot having a square face at one end and a rounded face at the other end, each of said faces being cut away to form a concaved cylindrical surface meeting said faces to form a curved cutting edge, said curved cutting surfaces being on opposite flat sides of the tool, whereby the cutting edges are oppositely disposed.

2. In a tool of the class described, a shank having flat sides and a slot therein, said slot being provided with cutting edges formed by the meeting of a cylindrical plane, with a plane having lines perpendicular to said flat sides.

3. In a device of the class described, a shank having a slot therein, the faces of said slot being substantially perpendicular to the faces of said shank, cutting edges at each end of said slot, said edges being formed by cut-away portions forming cylindrical surfaces meeting said faces.

In testimony whereof we have hereunto set our hands in presence of two subscribing witnesses.

MICHAEL <sup>his</sup> F. DAVITT.  
LEMUEL J. FENNER. <sup>mark</sup>

Witnesses:

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