

W. P. HUNTOON.

PLIERS.

No. 181,175.

Patented Aug. 15, 1876.

Fig. 1.

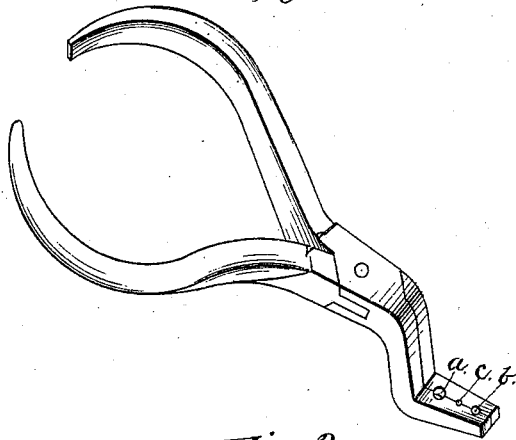
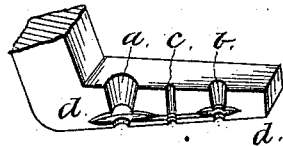


Fig. 2.



Witnesses:

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UNITED STATES PATENT OFFICE.

WILLIAM P. HUNTOON, OF STUART, IOWA.

IMPROVEMENT IN PLIERS.

Specification forming part of Letters Patent No. **181,175**, dated August 15, 1876; application filed June 3, 1876.

To all whom it may concern:

Be it known that I, WILLIAM P. HUNTOON, of Stuart, in the county of Guthrie and State of Iowa, have invented an Improved Pliers for Watchmakers' and Jewelers' Use, of which the following is a specification:

The object of my invention is to provide a tool that can be advantageously used as a pliers, and also as a vise in removing, fitting, and handling watch-hands and other small parts of delicate machinery. It consists in forming vertical and longitudinal intersecting grooves or cavities in the jaws of bent pliers, as hereinafter fully set forth.

Figure 1 of my drawing is a perspective view of a bent pliers having straight parallel mating jaws.

a b c represent a series of vertical grooves in the inside surface of each jaw.

Fig. 2 is a perspective view of one of the grooved jaws on an enlarged scale, illustrating the manner of forming the vertical and longitudinal intersecting grooves.

d d are longitudinal grooves or cavities, of conoidal form, near the lower edge of the jaw, intersecting and crossing the vertical grooves *a b c*. The grooves *a b* are smallest at the bottom, and flare and enlarge toward the top, as required, for the free passage of broaching-tools. These vertical grooves vary in size, and a graduated series, varying in number, may be uniform in each jaw.

The groove *c* is straight and uniform in size from top to bottom, as required, to gripe and hold pins, screws, and similar small and straight parts. A graduated series of these straight vertical grooves are designed to be formed in each jaw between the flaring grooves.

These grooves and cavities *a b c d* may be formed by milling, or by means of dies, or in any suitable way that well-tempered grooved jaws can be produced.

The size of the pliers and their jaws and grooves may vary, as desired.

In the practical operation and test of the utility of my invention, take the pliers in the hand and open the jaws to admit the disk or

flange of the hour or minute hand of a watch into the longitudinal groove *d* intersecting the vertical groove *a*, and then close the jaws.

By thus using my combination-tool as a pliers, you can readily seize and remove or pick up a watch-hand, and then retain it, as in a vise, to broach and fit it to its post, by simply turning your hand and inverting the jaws and the watch-hand. While thus inverted you can pass a tapering file, or any suitable broaching-tool, through the watch-hand to enlarge the hole therein. When you deem the hole large enough you can hold it to the post to try it, and if it does not fit, repeat the filing and trying on until it fits, when you can securely place the fitting watch-hand on its post. All this can be readily done without releasing the watch-hand from the gripe of the intersecting grooves a single time.

My improved jaw-tool is thus advantageously used as a pliers to pick up, remove, or replace a watch-hand, and as a vise to hold it in filing and fitting it in its place on the post.

The second-hand of a watch can be readily manipulated in the same manner by means of the smaller groove *b* and its intersecting groove *d*.

Jewel-plates, ratchets, collets, and similar small perforated parts of delicate machinery can be advantageously manipulated in a similar manner by means of my improved tool.

I am aware that pinchers and jaw-tools have been bent, and their jaws serrated and grooved; but I claim that my manner of intersecting at right angles a series of flaring or conical vertical grooves with conoidal longitudinal cavities or grooves in the jaws of bent pliers, to adapt them for the alternate and simultaneous uses of a pliers and vise, is novel and greatly advantageous.

I am also aware that straight vertical grooves are common in jaw-tools for holding pins, screws, &c.; but I claim that my tool, having a series of intersecting grooves, *a d*, for handling and holding perforated and disk-form articles, and also a series of straight vertical intervening grooves for handling and

holding straight pins and similar small objects, is a new and convenient combination-tool.

I claim as my invention—

1. In bent pliers, the vertical and conical grooves or cavities *a b*, intersected by the longitudinal and conoidal grooves or cavities *d d*, substantially as and for the purposes shown and described.

2. As a new combination-tool, the bent pli-

ers, having a graduated series of intersecting grooves, *a d* and *b d*, and also a graduated series of vertical straight grooves, *c*, substantially as and for the purposes shown and described.

WILLIAM P. HUNTOON.

Witnesses:

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