(No Model.) 2 Sheets—Sheet 1.

F. W. HEINKE.

COMBINATION TOOL.

No. 493,088. Patented Mar. 7, 1893.

Fig. 1.

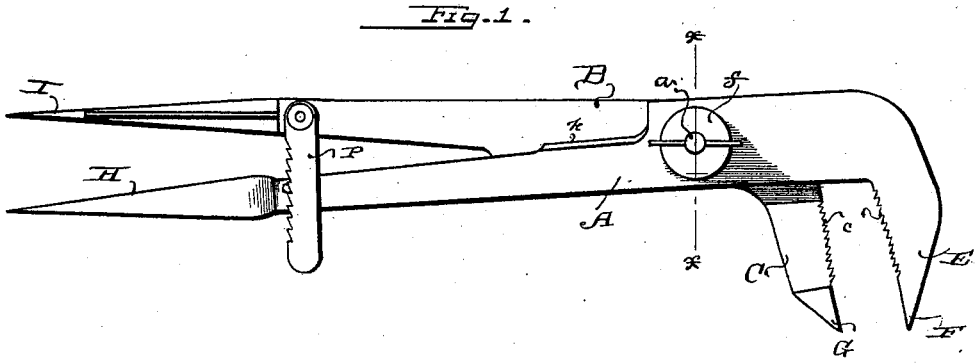


Fig. 2.

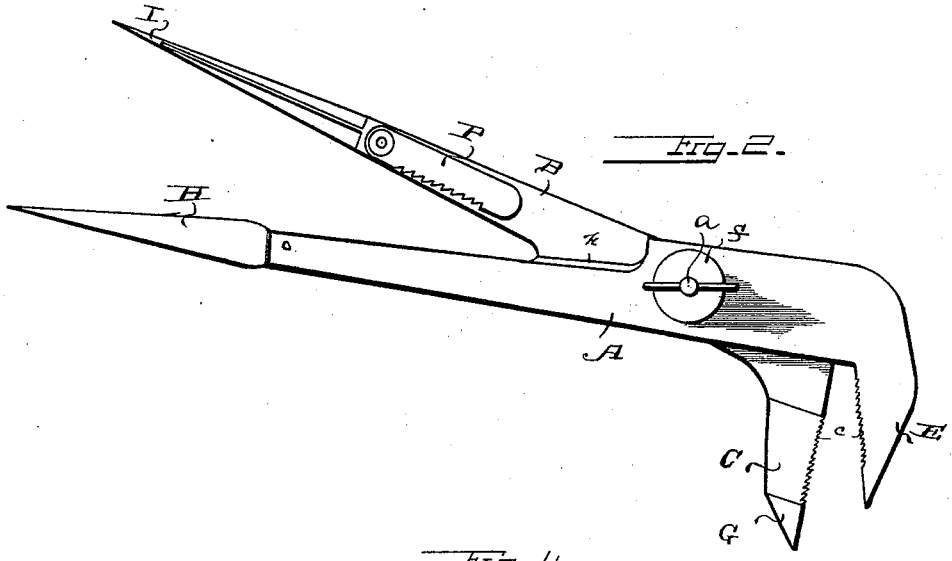
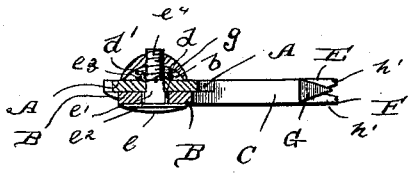


Fig. 4.



Witnesses:

Jesse Heller.

Phil. C. Masi.

Inventor.

F. W. Heinke,

by E. W. Anderson,

Attorney.

(No Model.) 2 Sheets—Sheet 2.

F. W. HEINKE.

COMBINATION TOOL.

No. 493,088. Patented Mar. 7, 1893.

Fig. 3.

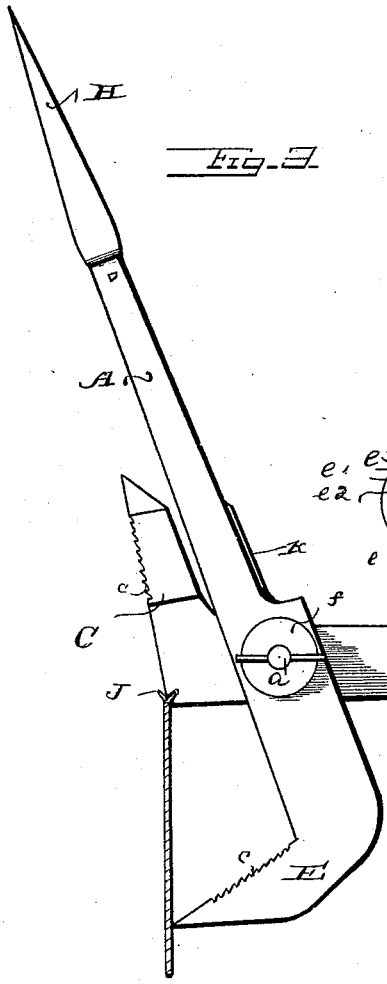


Fig. 5.

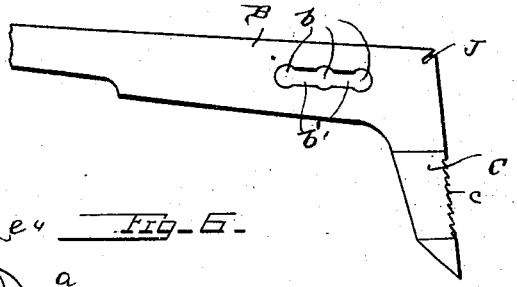
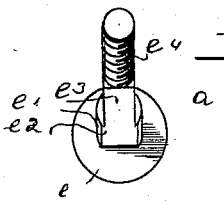


Fig. 6.



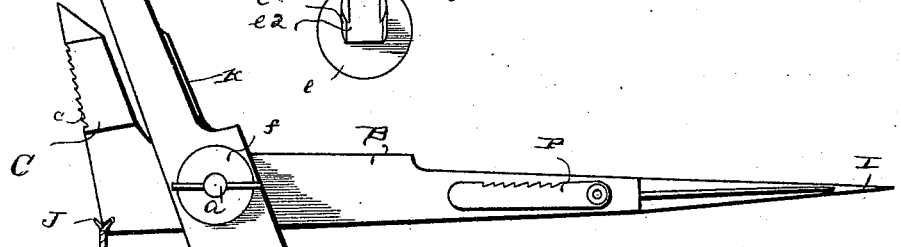


Fig. 7.

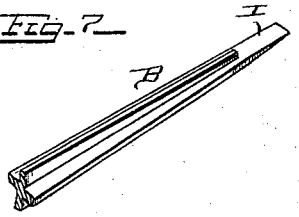
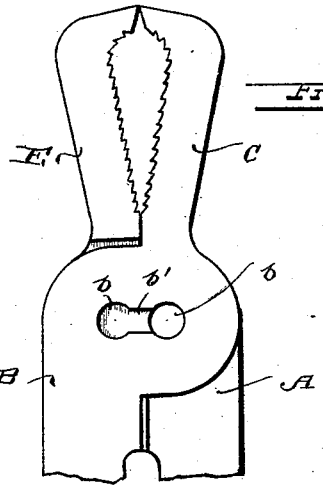


Fig. 8.



Witnesses:
Jesse Heller.
Phillemasi

Inventor.
F. W. Heinke
by E. W. Anderson
his Attorney.

UNITED STATES PATENT OFFICE.

FREDERICK W. HEINKE, OF SUMMERFIELD, KANSAS.

COMBINATION-TOOL.

SPECIFICATION forming part of Letters Patent No. 493,088, dated March 7, 1893.

Application filed July 5, 1892. Serial No. 438,906. (No model.)

To all whom it may concern:

Be it known that I, FREDERICK W. HEINKE, a citizen of the United States, and a resident of Summerfield, in the county of Marshall and State of Kansas, have invented certain new and useful Improvements in Combination-Tools; and I 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, reference being had to the accompanying drawings, and to letters of reference marked thereon, which form a part of this specification.

Figure 1 of the drawings is a side view showing position of the pipe wrench. Fig. 2 is a side view showing the shears. Fig. 3 is a side elevation showing the screw set. Fig. 4 is a section on line *x x* Fig. 1. Fig. 5 is a side view of part of the member B. Fig. 6 is a perspective of the pivot bolt. Fig. 7 is a detail in perspective of the screw driver and Fig. 8 is a partial side view of a modification.

This invention has relation to certain new and useful improvements in combination tools, the object being to provide a tool especially designed for plumbers' use; and combining in one article, the several different functions as follows:—(first) a pipe wrench; (second) a claw and double shank screw driver; (third) countersink; (fourth) reamer; (fifth) screw driver; (sixth) saw set; (seventh) shears, and (eighth) compasses.

With this object in view, the invention consists in the novel construction and combination of parts, all as hereinafter specified.

In the accompanying drawings, the letters A and B designate the two members which primarily comprise the device, adjustably and loosely connected by a pivot bolt *a*, in the manner hereinafter described. On the upper end of each of said members is formed a projecting head or jaw, that on the member A being designated by the letter E, and that on the member B by C. Said jaws on their adjacent faces are each transversely corrugated or toothed, as indicated at *c*, and constitute the wrench for pipes, round iron, burrs, &c.

The member B has on its shank, a short distance below its head or jaw C, a series of approximately cylindrical perforations *b*, which are connected to each other by the narrow straight slots *b'*. The pivot bolt *a*, herein-before referred to is designed to engage any one of said perforations and a single angular perforation *d* in the member A, said perforation on the outer face of the member being surrounded by a boss *d'*, as indicated in the drawings. Said bolt has the head *e*, the partially circular portion *e'*, having the bearing surface e^2, the angular portion e^3 for engagement with the perforation *d* and boss *d'*, and a threaded portion e^4 for engagement with thumb and cap nut *f*. Coiled around the boss *d'* is a spring *g*, which is inclosed by the thumb and cap nut *f*. By changing the bolt from one of the holes to another, it will be apparent that the jaws will be brought at different distances from each other for engagement with different sizes of pipes and other articles. To change the bolt from one hole to another, bring the members into position at right angles to each other, when the semi-angular portion *e'* of the head will slide through the connecting slots *b'*. When however, the members are brought into position for their operation, this angular portion will extend crosswise of the slot, preventing it from passing therethrough, the surfaces e^2 taking bearings on the walls of the perforations. The contiguous faces of the jaws are preferably toothed and slightly oblique, so that while taking a firm grip of a pipe or other object, said jaws will instantly release it, when the pressure is removed. When a pipe or other article is gripped by the jaws, owing to the oblique faces, it will be drawn farther between them, causing said jaws to take such a firm hold that they cannot slip.

On the extremity of the jaw E is formed a claw F, the prongs *h'* of which are beveled off to form a double shank screw driver, as indicated. The extremity of the jaw C is beveled to form the countersink G. On the extremity of the handle portion or shank of the member A is formed the prismatic ream H. On the extremity of the handle portion or shank of the member B is a screw driver I. The shank of the screw driver I may also be grooved, as indicated, to form a ream. On the angle formed by the jaw C and its shank is an oblique notch J, which is designed to be used as a saw set, as illustrated in Fig. 3. When used for this purpose, the shanks are spread until they are at a little more than right angles to each

other. The saw is held rigid, and a tooth thereof is inserted into the notch J. The point of the jaw E is then adjusted to a greater or less distance from the saw blade, according to the degree of set to be given the tooth, and the screw is tightened to lock the members together. The shank of member B is then moved until the point of the jaw E comes against the blade, as shown in Fig. 3, which movement gives the proper set to the tooth, as will be seen by reference to the said figure. This operation is repeated for each tooth.

k, *k*, are the cutting edges formed on the members just back of the point of their pivoted connection, and which when the handle portions or shanks are brought together, form cutters or shears. By opening the shanks, and tightening the thumb screw *f*, the tool may be used effectively for the purpose of a pair of compasses.

To the shank of the screw driver is pivoted a ratchet arm P the teeth of which are designed to engage with a catch projection on the shank of the reamer H for the purpose of holding the shanks when desired. When not in use, this arm is turned up on the shank out out of the way.

In Fig. 8, I have shown a modified form wherein the series of perforations *b* in the jaw B, are arranged crosswise of said jaw. The jaws also are somewhat different, projecting in the plane of the shanks, instead of at an angle thereto. In this form, said jaws may be used to serve the purpose of a pair of pinchers.

The tool may be made of any suitable size, is simple in constructon, and of low cost, and forms an effective device for the several purposes for which it is intended.

Having described this invention, what I claim, and desire to secure by Letters Patent, is—

1. A combination tool, comprising the members A and B, having an adjustable, pivotal connection, the jaws C, E, on said members, the beveled portions F and G on the extremities of said jaws, the handle portions of said members having the ream and screw driver formed thereon, and constructed to serve as a pair of compasses and as a pair of shears, substantially as specified.

2. In a combination tool, the combination with the member B, having a series of circular perforations *b* therein, connected to each other by slots, and the jaw A having a single angular perforation *d*, boss *d'*, and the spring coiled around said boss, of the pivot bolt engaging the perforation *d*, and arranged to engage any one of the perforations *b*, said pivot bolt having the partially circular bearing portion, the angular engaging portion, and the threaded extremity, and the screw and cap nut on said threaded portion and inclosing the boss and spring, said members having the jaws C, E, the saw set J, the claw and double shank screw driver F, the counter-sink G, the ream H, and screw driver I, said ream and screw driver being adapted for use as compass points, substantially as specified.

In testimony whereof I affix my signature in presence of two witnesses.

FREDERICK W. HEINKE.

Witnesses:
GEO. LOCH,
JOHN HUEBER.