(No Model.)

A. SCHATZ.

PARALLEL JAW PLIERS.

No. 571,021. Patented Nov. 10, 1896.

Fig. 1.

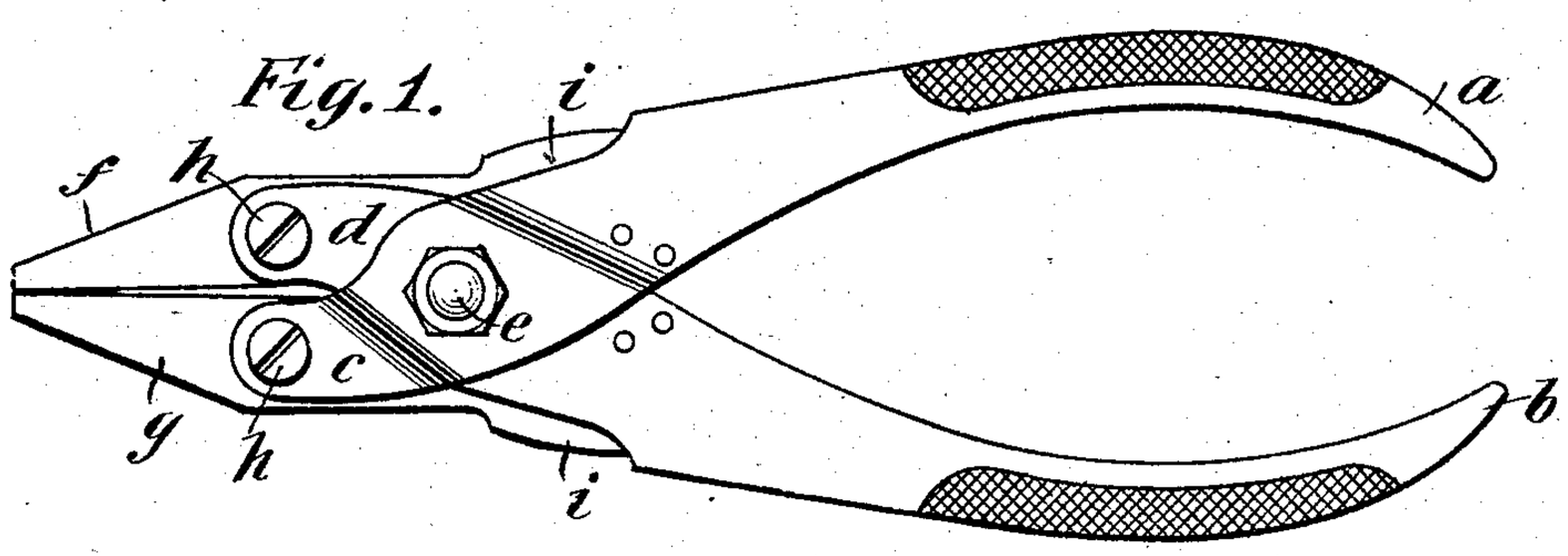


Fig. 2.

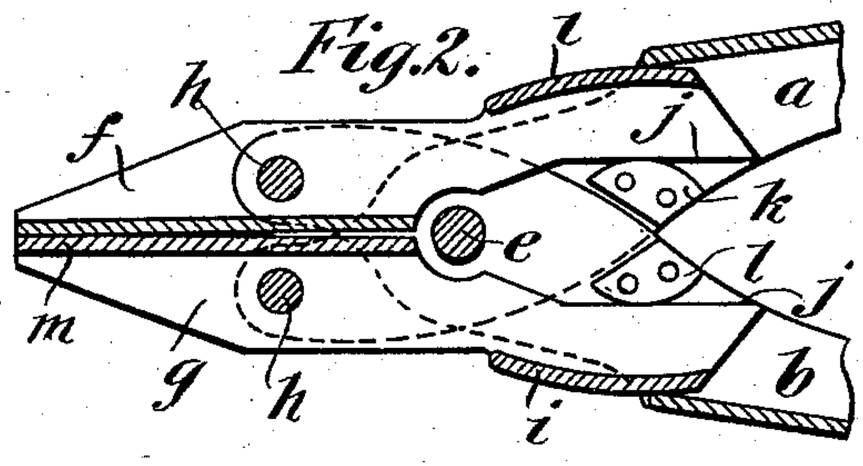


Fig. 3.

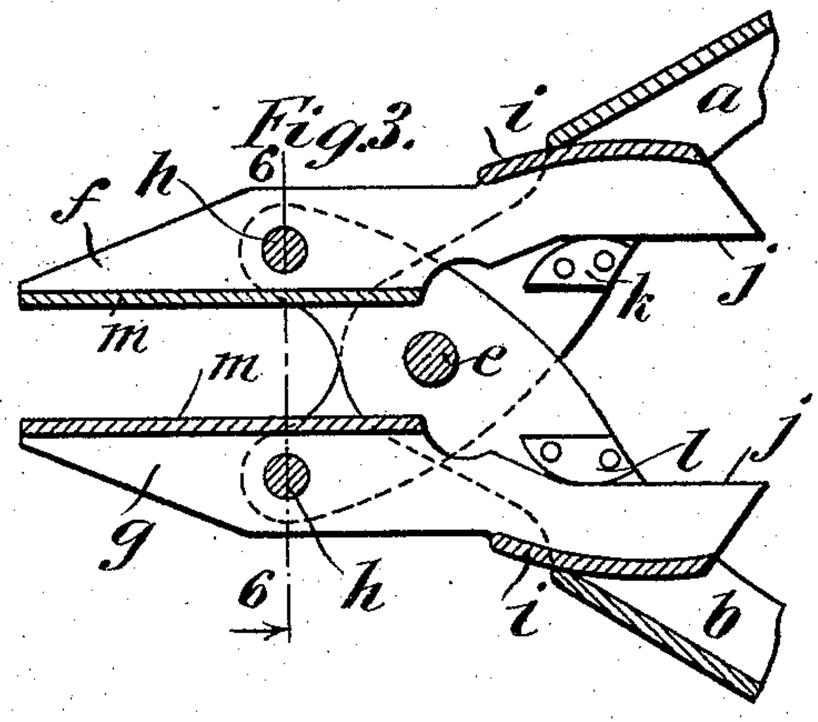


Fig. 4.

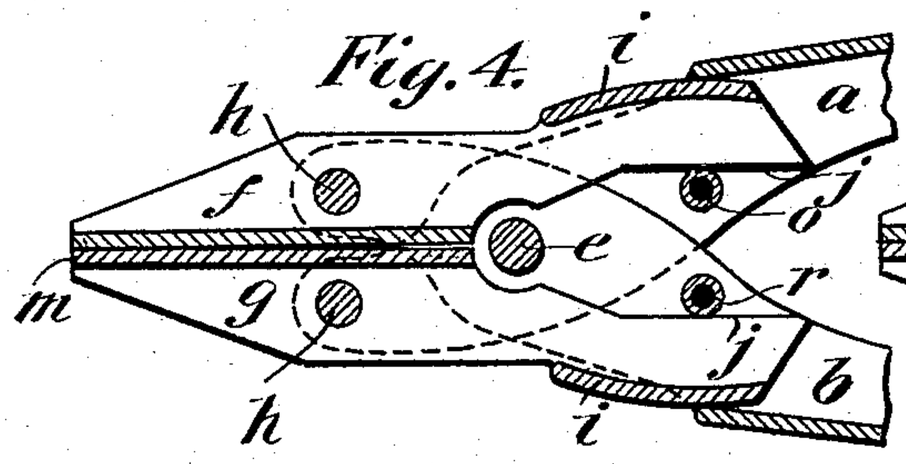


Fig. 5.

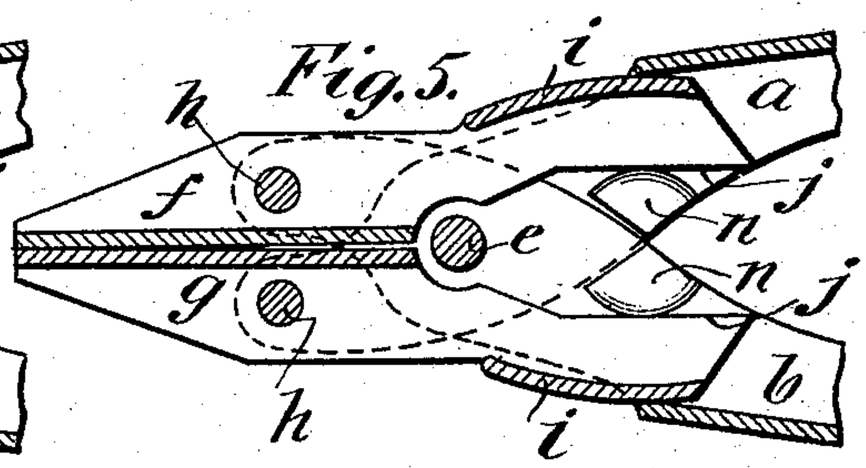


Fig. 6.

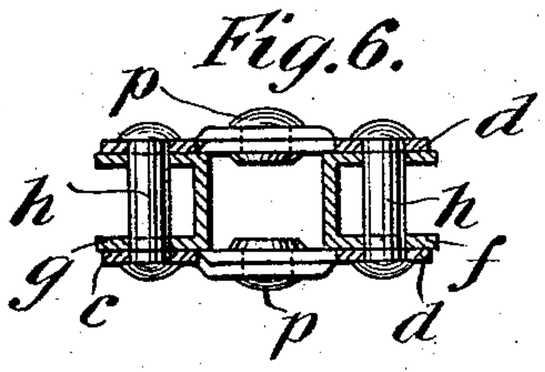
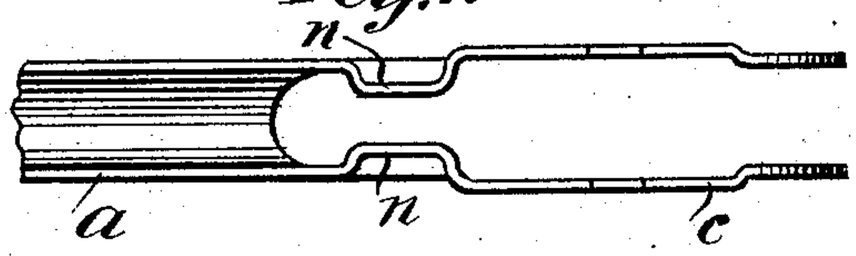


Fig. 7.



Witnesses
John P. Nordstrom
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UNITED STATES PATENT OFFICE.

ADOLF SCHATZ, OF NEW HAVEN, CONNECTICUT.

PARALLEL-JAW PLIERS.

SPECIFICATION forming part of Letters Patent No. 571,021, dated November 10, 1896.

Application filed January 16, 1896. Serial No. 575,753. (No model.)

To all whom it may concern:

Be it known that I, ADOLF SCHATZ, a citizen of the United States, residing in New Haven, county of New Haven, State of Connecticut, have invented certain new and useful Improvements in Parallel-Jaw Pliers, of which the following is a specification.

My invention relates to tools for wire and sheet-metal working; and it consists of a novel construction of parallel-jaw pliers wherein jaws pivoted in handles are guided in parallel motion by blocks or by rollers set in the handles, the splitting or slotting of the inner ends of the jaws being obviated.

My invention is illustrated in the accompanying drawings, wherein—

Figure 1 is an elevation of my improved parallel-jaw pliers. Fig. 2 is a horizontal section thereof, the jaws being closed. Fig. 3 is the same view with the jaws open. Fig. 4 is a section showing a modified form of the guiding devices. Fig. 5 is a similar view showing another method of producing the guides for the jaws. Fig. 6 is a transverse section on line 6 6 in Fig. 3. Fig. 7 is a side view of one handle, showing the depressions therein for guiding the jaws.

Similar letters of reference indicate corresponding parts in all views.

My improved parallel-jaw pliers consist of handles provided with forked ends crossing each other and pivoted together, and of jaws pivoted between the tines of the handles and sliding with their rear or inner ends between the arcs connecting the tines of the handles and guides secured to the handles.

Handles *a* and *b* are preferably made of sheet-iron or of steel. They may, however, also be cast of malleable iron. They may also be composed of several parts and of different materials, the forks holding the jaws being then preferably made of steel and suitably-shaped pieces of wood, celluloid, hard rubber, and the like secured to them. This last-mentioned method of construction is especially suitable for tools used in electrical wiring.

To the forked ends of handles *a* and *b* are pivoted by bolts *h* the jaws *g* and *f*, respectively, their rear ends being slid into the grip ends of the opposite handles and held there between the rim of the arcs connecting the tines *c* and *d* and between guides provided in the handles. These guides may be blocks *k* and *l*, riveted to the inner sides of the handles *a b* and having their bearing-surfaces curved to reduce the point of contact between them and, consequently, also the friction. Instead of riveting the separate guide-pieces *k l* to the sides of the handles *a b*, the guides may be obtained by depressions in the handles, as shown in Figs. 5 and 7. The dent *n* thus produced will, however, tend to reduce the strength of the tool to some extent, and therefore this method will be available only for light tools.

In Fig. 4 another modified construction of the guide is shown wherein rollers are employed in place of the guiding-blocks *k* and *l*.

These rollers *r* turn on pins *o* set in the handles. The edges *j* of the jaws glide on these rollers in the same manner as on the guides described above. Jaws *f* and *g* fit in between the forks *d* and *c* and may be solid or hollow, the latter being produced in similar manner as described in my Patent No. 557,615, granted April 7, 1896. The jaws, provided as usual with roughened gripping-surfaces *m* at their forward ends, are formed with straight edges *j* on their rear ends, engaging the guides *k l*. The backs of the rear ends slide under the arcs between the tines *c* and *d* and are correspondingly curved, so that they always fill the space between the guiding-blocks and the rim of the handle at all positions. The jaws do not jolt any, being not allowed any loose motion.

The parts of my improved parallel-jaw pliers are put together as follows: Handle *b* is slid crosswise between the tines of handle *a*, and both are pivoted together by bolt *e* set in their crossing-point. In constructing open-throat pliers the central pivot-bolt *e* is replaced by the two rivets *p*, as shown in Fig. 6, whereby the adjacent sides of the handles are joined and pivoted separately, and the throat is then free from obstruction. Then the jaws are slid between the tines of the forked handles, their rear ends being first pushed in the opening between guides and the arcs connecting the tines and then pivoted.

I claim as my invention and desire to secure by Letters Patent—

1. Parallel-jaw pliers, having jaws, pivoted

to the forked ends of crossed handles, the inner ends of the jaws, having rounded and appropriately-curved backs, and adapted to glide between guides, provided in the handles, and the edge of the arc, connecting the tines of the forked handles.

2. In parallel-jaw pliers, the combination with hollow handles and with hollow jaws, pivoted to the forked ends of the hollow handles, of guiding-blocks secured in the handles and engaging respectively the corresponding inner edges of the hollow jaws, thereby guiding the jaws in parallel motion.

3. In parallel-jaw pliers, having jaws rounded on suitably-curved backs of their inner ends, and these inner ends being adapted to glide between the edge of the arc, connecting the tines of the forked handles and between the guides, provided in the handles, the combination with the jaws, of hollow handles having suitable dents produced by depression of the edges of the handles, the edges of the dents guiding the jaws in parallel motion.

In witness that I claim the improvements described in the foregoing specification I have signed my name in the presence of two subscribing witnesses.

ADOLF SCHATZ.

Witnesses:
RICHARD I. ELLIOTT,
JOHN P. NORDSTROM.