L. SCHOENING.

PLIERS.

APPLICATION FILED FEB. 20, 1914.

1,122,165. Patented Dec. 22, 1914.

Fig. 1.

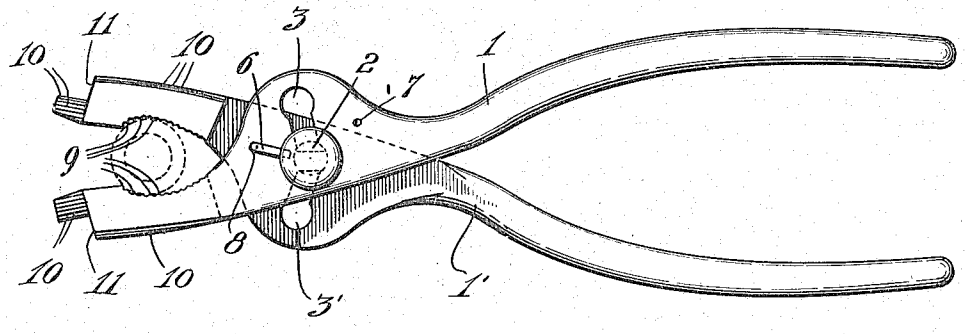



Fig. 2.

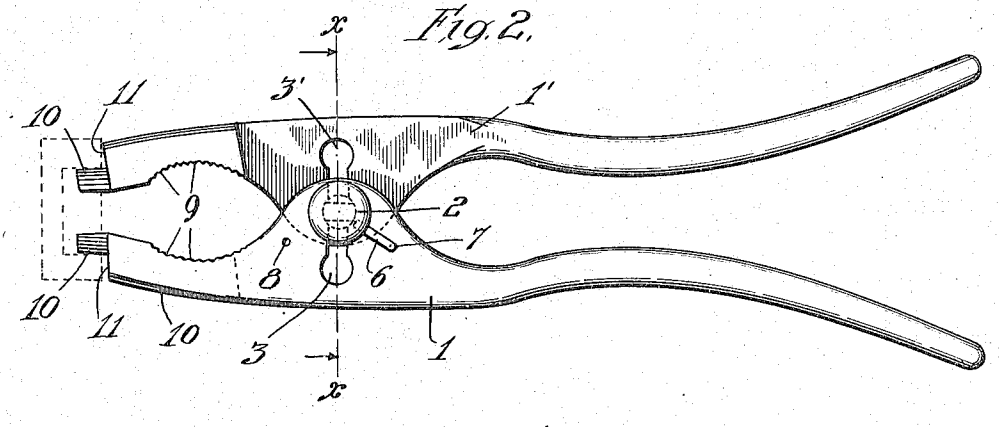
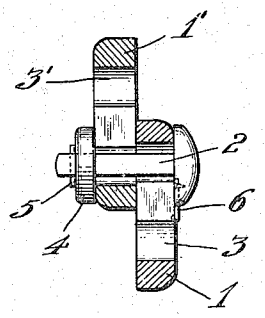



Fig. 3.




Witnesses:
H. S. Buell
A. A. Olson

Inventor,
Louis Schoening,
by Joshua R. H. Potts
his Attorney.

# UNITED STATES PATENT OFFICE.

LOUIS SCHOENING, OF CHICAGO, ILLINOIS.

## PLIERS.

1,122,165. Specification of Letters Patent. Patented Dec. 22, 1914.

Application filed February 20, 1914. Serial No. 819,915.

*To all whom it may concern:*

Be it known that I, LOUIS SCHOENING, a citizen of the United States, and a resident of the city of Chicago, county of Cook, and State of Illinois, have invented certain new and useful Improvements in Pliers, of which the following is a specification.

My invention relates to improvements in pliers and has for its object the production of a device of this character in which the levers may be relatively shifted in order to adapt the device for use for inside or outside gripping.

A further object is the production of a pliers as mentioned which will be of durable and economical construction and efficient in use.

Other objects will appear hereinafter.

The invention consists in the combinations and arrangements of parts hereinafter described and claimed.

The invention will be best understood by reference to the accompanying drawing forming a part of this specification, and in which—

Figure 1 is a side elevation of a pliers embodying my invention, the plier levers being adjusted to adapt the same for outside gripping. Fig. 2 is a view similar to Fig. 1 showing the plier levers shifted to adapt the same for inside gripping, and Fig. 3 is a section taken on line *x*—*x* of Fig. 2.

The preferred form of construction as illustrated in the drawing comprises a pair of similar levers 1 and 1′, said levers being pivotally connected intermediate their ends by a fulcrum pin 2. Said fulcrum pin engages slots 3 and 3′ formed in said levers 1 and 1′ respectively. Said slots are elongated, the elongation being in a direction transversely of the levers, and said slots are of the keyhole type, that is enlarged at their opposite ends for coöperation with the pin 2 which is flattened at its opposite sides. With this arrangement it will be seen that said levers may be unlocked to permit of relative shifting or locked in positions of relative shifting by simply rotatably adjusting said pin, it being clear that, when said pin is in engagement with the enlarged ends of slots 3 and 3′ and positioned transversely relative to the narrow central portions of said slots, as shown in Figs. 1 and 2, said levers will be locked in positions of relative shifting and when said pin is adjusted to position the flat sides thereof in alinement with the narrow central portions of said slots, movement of said pin in said slots and hence relative shifting of the levers is permitted. Said slots are of such lengths that said levers may be shifted to a position in which the same cross each other at the fulcrum point as shown in Fig. 1 or in which said levers extend substantially parallel with each other in spaced relation as shown in Fig. 2. In the first position of said levers it will be seen that the device constitutes an outside pliers whereas when said levers are shifted to the position shown in Fig. 2, the device constitutes an inside pliers.

The fulcrum pin 2 is provided at one end with a head as shown and at the other end thereof is provided a collar 4 which is locked in position by a cotter pin 5. Provided upon the head of pin 2 is a spring finger 6 the outer end of which is bent inwardly to adapt the same to releasably engage recesses or depressions 7 and 8 provided upon the outer side of lever 1 in order to releasably lock said pin in locking position relative to the slots 3 and 3′ as will be readily understood. Said spring finger also facilitates rotative adjustment of the pin 2 in effecting locking or unlocking of the levers 1 and 1′.

The outer ends of levers 1 and 1′ are provided at their inner sides with transversely extending teeth 9 for outside gripping and at their outer sides with longitudinally extending teeth 10 for inside gripping. Also the outer ends of said levers are stepped as at 11 in order to adapt the same for insertion into openings of various diameters. The opposite ends of levers 1 and 1′ are curved and rounded in order to constitute handles.

With a construction as set forth it will be seen that a device is provided which is adapted to perform the double function of an inside and outside pliers and in which the shifting of the plier levers so as to adapt the same for service in either capacity may be readily and easily effected.

While I have illustrated and described the preferred form of construction for carrying my invention into effect, this is capable of variation and modification without departing from the spirit of the invention. I, therefore, do not wish to be limited to the precise details of construction set forth, but desire to avail myself of such variations and

modifications as come within the scope of the appended claims.

Having described my invention what I claim as new and desire to secure by Letters Patent is:

1. A device of the class described comprising a pair of levers; a fulcrum pin pivotally connecting said levers, said levers being provided with slots for engagement by said fulcrum pin, said slots being elongated in a direction transversely of said levers, whereby said levers may be relatively shifted, said slots being of key-hole formation and said pin being flattened, whereby said levers may be locked in positions of relative shifting or unlocked to permit of shifting adjustment by rotatably adjusting said pin; and a resilient finger on said pin adapted to engage recesses in one of said levers for releasably locking said pin in positions of rotative adjustment, substantially as described.

2. A device of the kind described comprising a pair of levers, each having a lateral ear thereon and each ear overlapping the other ear, there being a slot in each lever extending laterally thereof into the ear of such lever and the ends of said slots being enlarged; a pin disposed through the slots of said levers, said pin when in the enlargements of the slots in said ears locking said levers substantially parallel with each other and when in the enlargements of said slots in said handles locking said levers in crossed relation; and a spring catch locking said pin in operative condition, substantially as described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

LOUIS SCHOENING.

Witnesses:

JOSHUA R. H. POTTS,

HELEN F. LILLIS.