

No. 652,404.

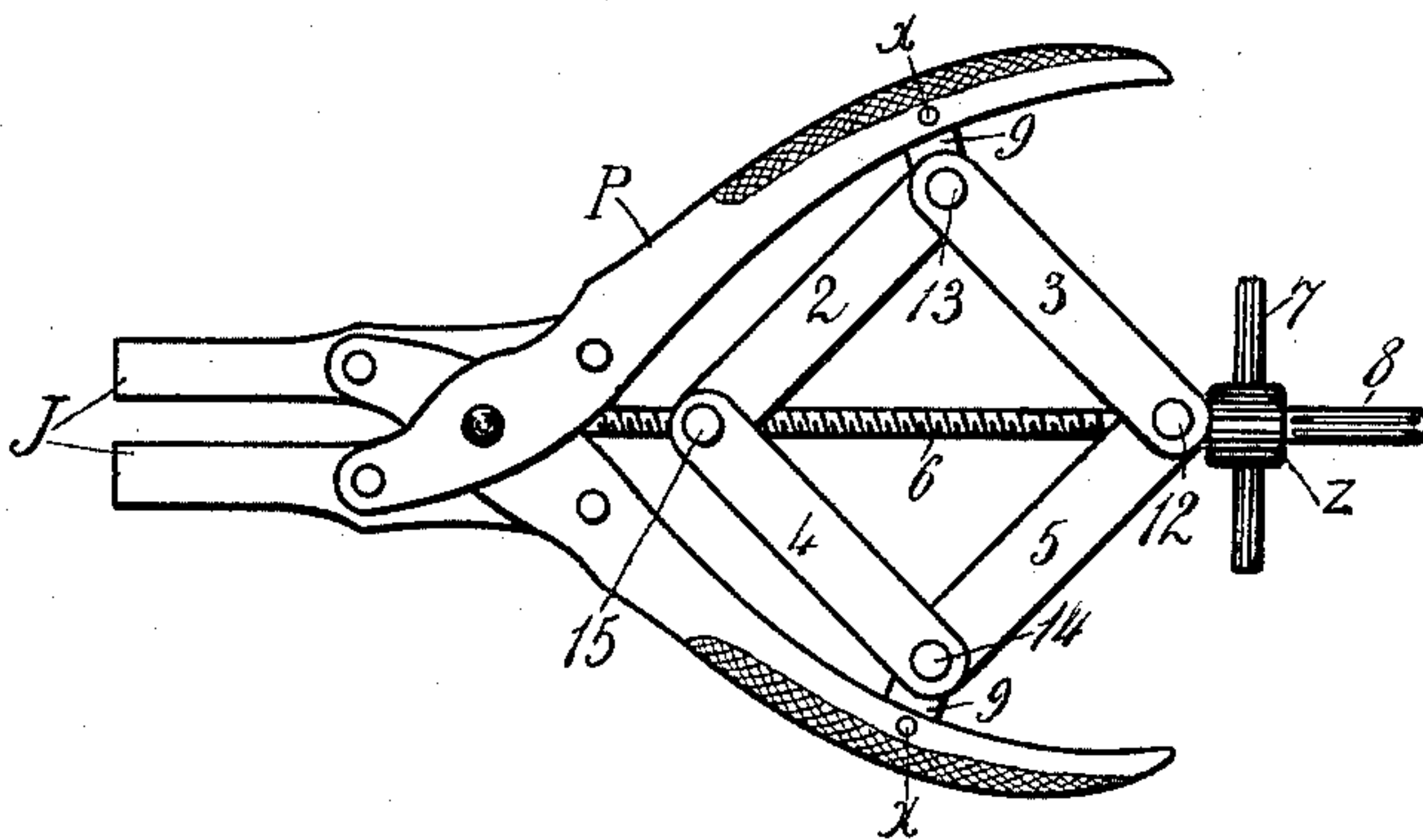
Patented June 26, 1900.

L. C. SHARP.  
DENTAL APPLIANCE.

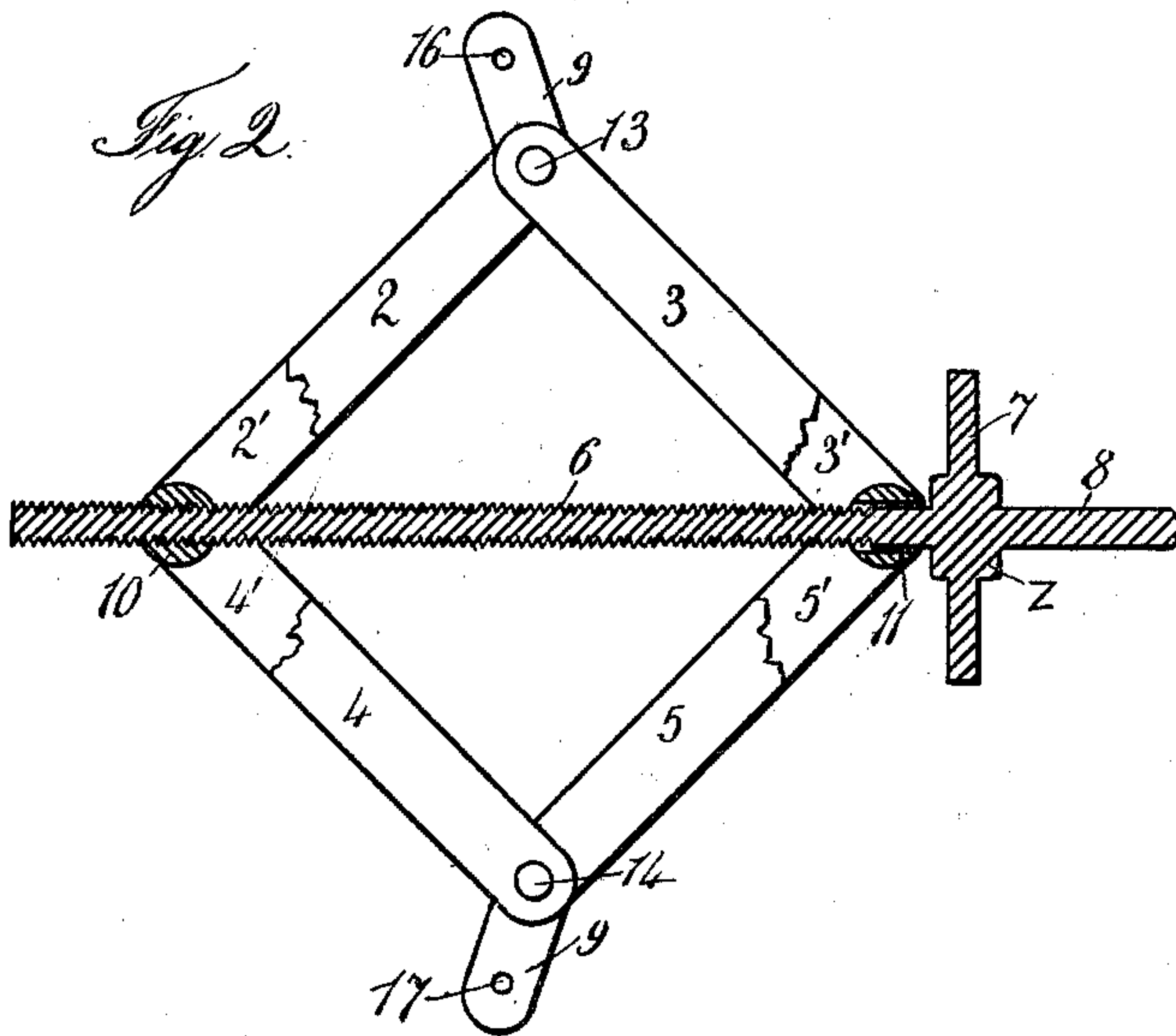
(Application filed Oct. 17, 1899.)

(No Model.)

*Fig 1*



*Fig 2*



WITNESSES

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# UNITED STATES PATENT OFFICE.

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## DENTAL APPLIANCE.

SPECIFICATION forming part of Letters Patent No. 652,404, dated June 26, 1900.

Application filed October 17, 1899. Serial No. 733,869. (No model.)

*To all whom it may concern:*

Be it known that I, LEE C. SHARP, residing at Omaha, in the county of Douglas and State of Nebraska, have invented certain useful  
5 Improvements in Dental Appliances; and I do hereby declare that the following is 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,  
10 reference being had to the accompanying drawings, which form a part of this specification.

This invention relates to an improvement in dental appliances by means of which a pair  
15 of forceps may be gradually opened or expanded and held under force, as will be described more fully hereinafter.

In the accompanying drawings I have shown in Figure 1 a side elevation of a pair of forceps provided with my improvement, while  
20 Fig. 2 shows an enlarged detached detail of the power mechanism used in my invention.

The aim of my invention is more particularly to provide dentists' pliers with a power  
25 mechanism, so that the forceps may be opened under power and held at any point.

In the furtherance of the object of my invention I provide an ordinary pair of forceps P, having suitable jaws, with a toggle system in the form of two similar ears 9, which  
30 by means of suitable pins  $\alpha$  are pivotally secured to the handles of the pliers, as is shown in Fig. 1. These ears 9 in turn are provided with the pins 13 and 14. To one ear are secured the bars 2 and 2' and 3 and 3', as is  
35 shown more clearly in Fig. 2. To the bars 2 2' and 3 3' are next secured the bearings 10 and 11, the bearing 10 being in the form of a trunnion having the projecting pins 15 and  
40 the bearing 11 having the projecting trunnions 12, by means of which trunnions the bearings are secured to the bars 2 2', 4 4', 3 3', and 5 5', the bearing 11 being adapted to loosely receive the stem 6 of an adjusting-  
45 screw, while the bearing 10 is threaded so that this screw 6 may wind through the same.

The counterpart ear 9 is provided with a pin 14 to be united to the bars 4 4' and 5 5', so that as the handles of the forceps are opened  
50 outward the bars 2 2' and 4 4' are brought nearer to the bars 3 3' and 5 5', the bearing 15 being carried rearward—that is, away from the jaws—which movement also carries forward the screw 6, while the bearing 11 is carried  
55 ried forward toward the jaws, this bearing

rapidly working over the screw 6, so that these pliers can be used as any ordinary pliers can, as the toggle mechanism in no way affects the use of the pliers when they are used to grasp something between the jaws, while  
60 when they are made to hold something by inserting the jaws J into an opening these jaws may be expanded under power to bind within the opening or ring into which the jaws are inserted and not only held there under power,  
65 but the jaws may be used as formers in working the screw 6 by means of the lever 7, by means of which a slow but very powerful force is exerted upon the handles of the pliers to open the jaws. To quickly carry back the  
70 screw after the jaws have been opened, it is simply necessary for the operator to grasp the stem 8 to rapidly revolve the screw 6.

In operating the screw 6 the head  $\alpha$  works against the rear bearing 11 to force the bars  
75 3 and 5 toward the jaws, while the screw 6 feeds the bearing 10 toward the rear end of the forceps or toward the head  $\alpha$  in forcing outward the handles of the pliers.

Having thus described my said invention, 80 what I claim as new, and desire to secure by United States Letters Patent, is—

1. The combination with a pair of pliers, of two sets of toggle-bars secured to and uniting the handles of the pliers, a threaded bearing  
85 removable at the union of one set of toggle-bars, and a second free bearing at the union of the second set of toggle-bars, and a threaded screw adapted to freely work through said bearing and threading into said threaded  
90 bearing as and for the purpose set forth.

2. The combination with a pair of pliers of the following instrumentalities, to wit: the ears 9, 9, pivotally secured to the handles of said pliers, the pins 13, and 14 secured to  
95 said ears 9, 9, the bars 2 and 3 extending from said pin 13, the bars 4 and 5 extending from said pin 14, the threaded trunnion-bearing 10 uniting said bars 2 and 4, the hollow trunnion-bearing 11 uniting said bars 3 and  
100 5, and the threaded screw 6 loosely passing through said trunnion-bearing 11 and threading into said trunnion-bearing 10, as and for the purpose set forth.

Signed in the presence of two witnesses.

LEE C. SHARP.

Witnesses:

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