

F. GUNDORPH.
TWEEZERS.
APPLICATION FILED OCT. 27, 1910.

1,004,871.

Patented Oct. 3, 1911.

Fig. 1.

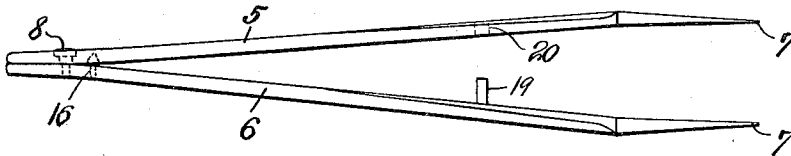


Fig. 2.

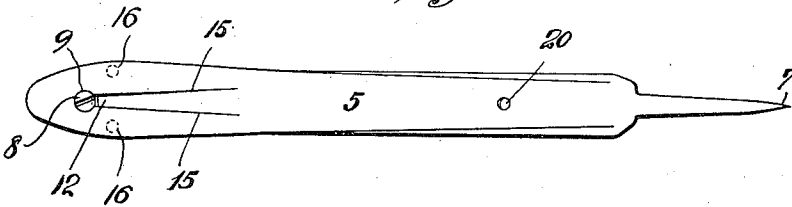


Fig. 3.

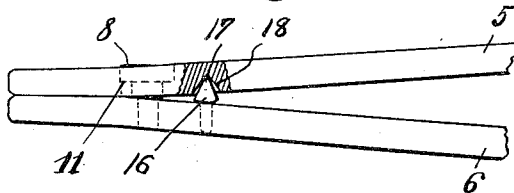
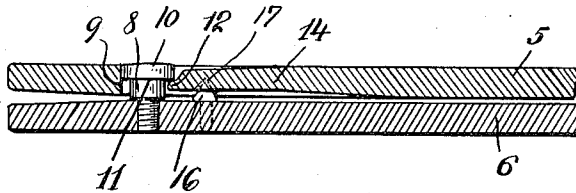


Fig. 4.



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UNITED STATES PATENT OFFICE.

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TWEEZERS.

1,004,871.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, FERDINAND GUNDORPH, a citizen of the United States of America, and a resident of Portland, Multnomah county, Oregon, have invented certain new and useful Improvements in Tweezers, of which the following is a specification.

This invention relates to tweezers and has for its objects to improve upon the construction of tweezers as there are commonly found in the art, with a view, primarily, of obtaining greater strength and rigidity so as to enable the operator to use the tweezers with a firm grip, thus facilitating the work. This is of particular advantage in the trade of the jeweler and watchmaker, though, of course, a pair of tweezers constructed according to this invention and as illustrated in the accompanying drawing is not limited in its use to any particular trade, nor is its detailed construction limited to the one depicted in the drawing.

In this latter Figure 1 is a side view of a pair of tweezers embodying my invention. Fig. 2 is a plan view. Fig. 3 is an enlarged detail view of the hinge, and Fig. 4 is an enlarged detail view of the spring and adjacent parts.

In the several views the reference characters 5 and 6 represent the two tweezer jaws ending in the usual nipper points 7, 7. The jaws are secured together by means of a screw 8 which passes through an aperture 9 in the jaw 5 and is screwed into the other jaw 6 as shown. The head 10 of the screw is enlarged to form a shoulder 11 which overlaps the free end 12 of the spring 13. The latter engages the screw under the head as shown. The spring is integral with the jaw 5 which latter is cut out or thinned as at 14 to form the spring.

It will be observed that the end 12 of the spring is the only part of the jaw 5 which is directly secured to the jaw 6. By this arrangement greater resiliency combined with strength is obtained. Further it will be noted that the slits 15 between which the spring is formed form a continuation of the aperture 9.

The jaws are pivoted one upon the other in the following manner. 16, 16 represent pivot points in the form of pins forced into

the jaw 6 and having the conical shaped pivot heads 17 entering corresponding sockets 18 in the jaw 5. As is clearly shown in Fig. 3 the action of the spring forces the jaws apart, and as the latter are closed, the one jaw 5 rocks upon the said pivot heads 17. This results in a very light action at the pivot and at the same time the jaws may be made very rigid as shown. In the usual form of tweezers the jaws are necessarily light and springy and generally taper continuously from the pivot to the nipper points. It should also be observed that only the nipper points contact when the jaws are closed because the pivot heads prevent the inner surfaces of the jaws from contacting as is clearly understood from Fig. 4. Hence the most minute articles may be gripped firmly, yet gently, as the entire gripping force is exerted at the nipper points.

In order to obtain the best possible hinge or pivot action, the free end of the heads 17 should preferably be on a level with the shoulder 11 on the screw 8. To prevent lateral displacement there is provided a guiding pin 19 in the one jaw adapted to enter a guiding opening 20 in the other jaw.

The above described construction possesses several advantages, viz. strength, great resiliency, easy action and low cost of manufacture.

I claim:—

1. A pair of tweezers comprising a pair of jaws, a spring formed integral with the one jaw, and a screw and pivot points carried by the other jaw for securing the jaws together and for pivoting the said first named jaw to the other one.

2. A pair of tweezers comprising a pair of jaws, a screw in engagement with the one jaw, and a spring formed in the other jaw and engaging under the head of the said screw for normally keeping the said jaws apart.

3. A pair of tweezers comprising a pair of jaws, a screw inserted in the one jaw, a spring formed in the other jaw and engaging under the head of the said screw for normally keeping the said jaws apart and means for pivoting the one jaw upon the other.

4. A pair of tweezers comprising a pair of jaws, a screw having a head for securing

the one jaw to the other, and pivot points for pivoting the one jaw upon the other, the extreme ends of the said pivot points being in substantially the same plane as the under
5 side of the said screw head.

5. A pair of tweezers comprising a pair of jaws, means for securing the one jaw to the other, said means being carried by said other jaw intermediate its ends, and a

spring engaging said means for normally 10 keeping the jaws apart.

Signed at New York, N. Y. this 26' day of October 1910.

FERDINAND GUNDORPH.

Witnesses:

E. VAN ZANDT,
IVAN KONIGSBERG.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents,
Washington, D. C."