

Sept. 9, 1969

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3,465,621

LOCKING TWEEZERS

Filed Nov. 29, 1967

FIG 1

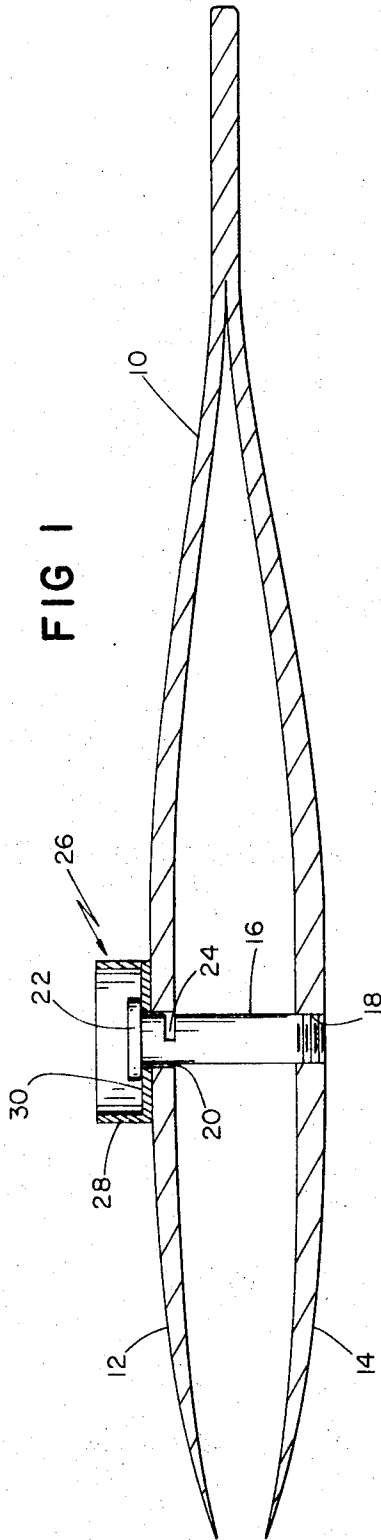
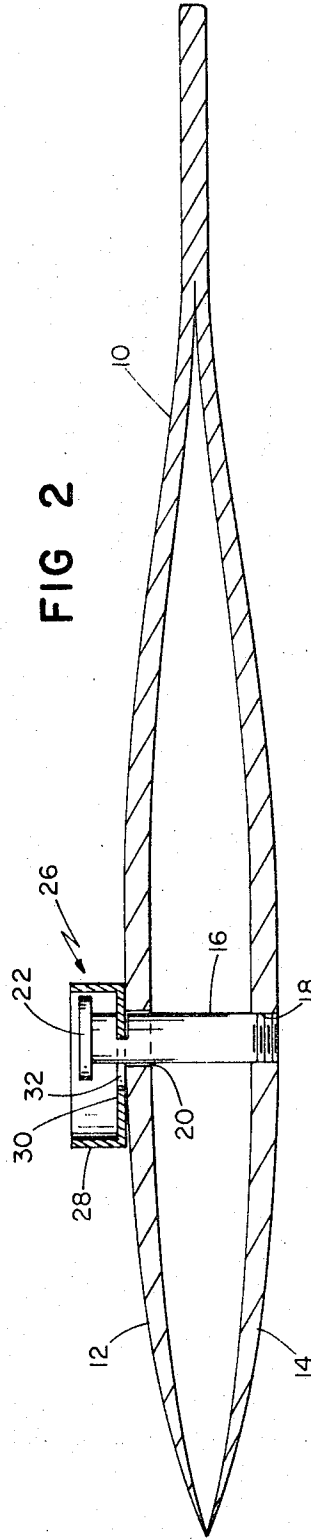


FIG 2



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**LOCKING TWEEZERS**

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 Filed Nov. 29, 1967, Ser. No. 686,551  
 Int. Cl. B25b 9/02

U.S. Cl. 81-43

5 Claims

**ABSTRACT OF THE DISCLOSURE**

A pair of tweezers with a slotted pin threadedly secured to the bottom clamping member and passing through a hole in the top clamping member and a cup-like member with a hole in its base plate received on the pin and slidable transversely thereof held in place by a flange at the end of the pin outside the top clamping member, the base plate being arranged to slide into the pin slot when the tweezers are closed to hold the tweezers in the closed position.

The invention relates to tweezers that may be locked in the closed position.

The operation of closing and then locking in the closed position a pair of tweezers has generally been difficult to do with one hand. Such an operation is invaluable for many minute operations in technical and assembly procedures. It is an object of this invention to provide locking tweezers that may be operated and locked with one hand. It is another object to provide such tweezers with a locking mechanism that is always in an available position while the tweezers are open.

The invention features a transversely slotted pin secured to the bottom clamping member of a pair of tweezers and passing through a hole in the top clamping member and a locking member outside the top clamping member slidable on the pin, including an element for sliding transversely into said slot when the tweezers are closed to hold the tweezers in a closed position. In preferred embodiments the locking member is a cup-like member with an open top, cylindrical side wall and round flat base plate, the latter having a hole slightly larger than but similar to the cross-section of the pin, and the pin is threadedly secured to the bottom clamping member and also has a flange at its end outside the top clamping member for holding the base plate between it and the top clamping member when the tweezers are in the open position.

Other objects, features and advantages will be apparent from the following description of a preferred embodiment of the invention, and the drawings thereof, of which:

FIG. 1 is a longitudinal sectional view of a pair of tweezers embodying the invention in the open, unlocked position; and

FIG. 2 is a longitudinal sectional view of the tweezers in a closed, locked position.

As shown in FIG. 1, the tweezers comprise top 12 and bottom 14 spring clamping members joined by resilient end portion 10.

A pin 16 has one end threaded to mate a threaded hole 18 in the bottom clamping member 14 about midway of its length. The opposite end of the pin 16 passes through a hole 20 in the top clamping member 12 and is topped by a flange 22. The pin 16 has a deep transverse slot 24 a short distance from the flange 22.

A cup-like member (designated generally by numeral 26), open at the top, is sized and shaped so that the user's thumb can comfortably find and manipulate it. It has a cylindrical side wall 28 and a round, flat base plate 30

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with a hole 32 of diameter slightly larger than that of the pin 16 and smaller than that of the pin's flange 22. The base 30 is located between the flange and the top clamping member 12.

In operation the tweezers are closed on an object in the usual way, with the thumb directly over the cup-like member 26. The distance of the slot 24 from the flange 22 of the pin and the height of the cylindrical wall 28 of member 26 are chosen so that flange 22 will not rise above the cylindrical wall 28 to interfere with manipulation of member 26.

To lock the tweezers, the base 30 of member 26 is slid into the pin slot 24 and pressure on the tweezers is released (see FIG. 2). The frictional force created by the tension of the tweezers will keep the tweezers locked. The slot preferably ordinarily faces the front or end of the tweezers so that manipulation of member 26 is in the longitudinal direction, a natural movement of the thumb. A fine adjustment of the opening at which the tweezers are locked is possible by moving the threaded end of the pin 12 in the track of the threaded bottom clamping member hold 18 (a slot in the face of the threaded end will facilitate this adjustment). If this is done, of course, the slot may face in any direction, but manipulation of the cup member 26 will still be possible.

To release the object the base 30 of the cup member 26 is slid back out of the slot 24 and pressure on the tweezers is released so that they open thus restoring the cup base 30 to its original position snugly fit between the pin flange 22 and the top clamping member 12. In this position the cup member 26 is always available for locking purposes. No attention need be given the cup member to be sure it is in a position from which it can be moved to lock the tweezers.

Other embodiments will occur to those skilled in the art and are within the following claims.

What is claimed is:

1. In a pair of tweezers including an end portion resiliently joining top and bottom clamping members, said top member having a hole therein, locking mechanism comprising:

a transversely slotted pin arranged to be secured to said bottom clamping member and to pass through said hole in said top clamping member, and a locking member outside said top clamping member slidable on said pin, including a locking element for sliding transversely into said slot when said tweezers are closed to hold said tweezers in a closed position.

2. The combination of claim 1 wherein said pin includes a flange at its end outside said top clamping member for holding said locking element between it and said top clamping member while said tweezers are in an open position.

3. The combination of claim 1 wherein said locking member is a cup-like member with an open top and a cylindrical side wall and said locking element is a round, flat base plate with a hole slightly larger than but similar to the cross-section of said pin.

4. The combination of claim 1 wherein said slotted pin is threadedly secured to said bottom clamping member for adjustment of said locked position.

5. In a pair of tweezers including an end portion resiliently joining top and bottom clamping members, said top member having a hole therein, locking mechanism comprising:

a transversely slotted pin adapted to be threadedly secured to said bottom clamping member and to pass through said hole in said top clamping member, and a cup-like locking member with an open top, a cylindrical side wall, and a round flat base plate out-

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side said top clamping member having a hole slightly larger than but similar to the cross-section of said pin, slidable on said pin for sliding transversely into said slot when said tweezers are closed to hold said tweezers in a closed position,  
 5 said pin being provided with a flange at its end outside said top clamping member for holding said base plate between it and said top clamping member while said tweezers are in open position.

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