

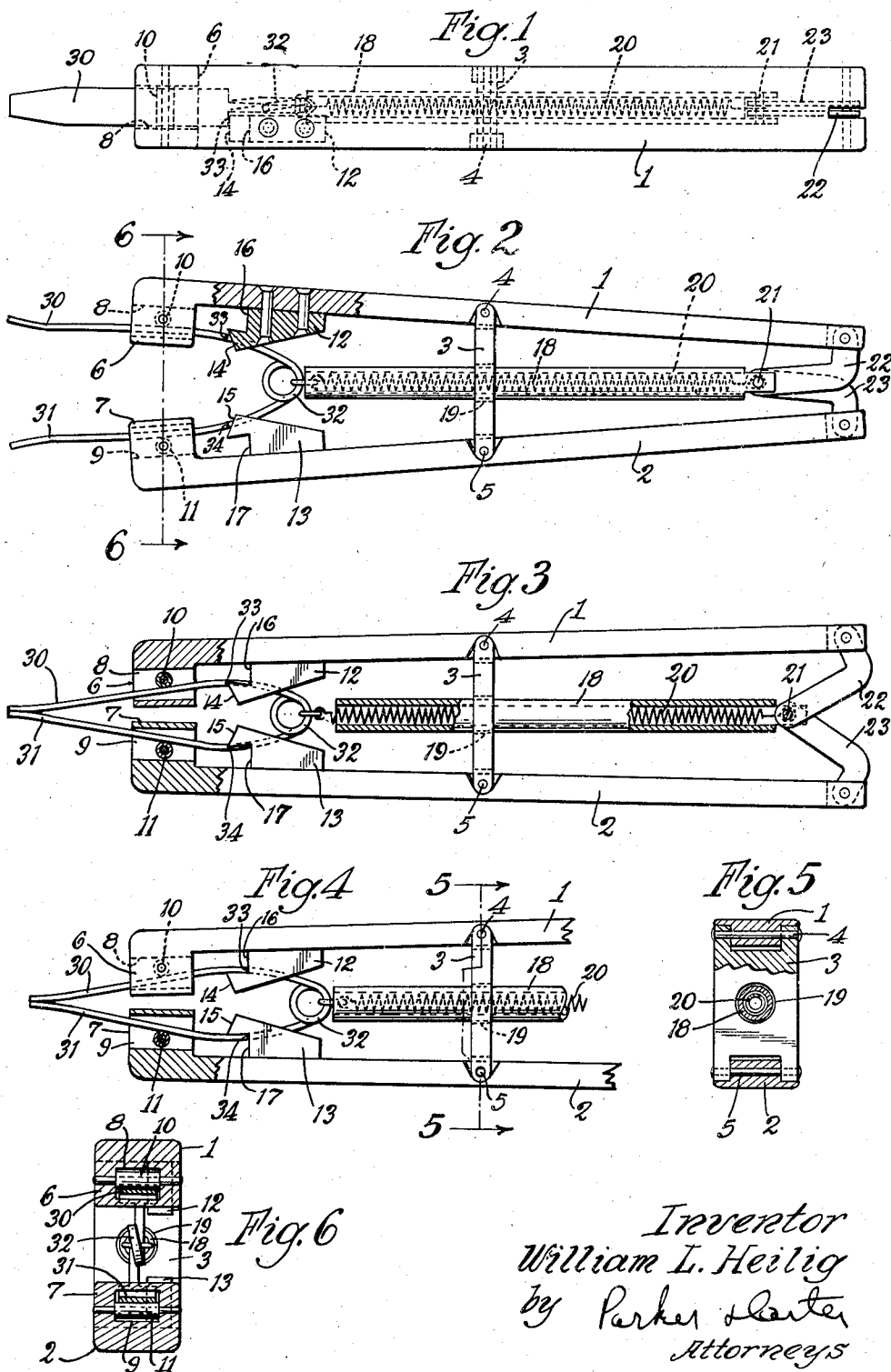
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W. L. HEILIG

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TWEEZERS

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Inventor
William L. Heilig
by Parker Slater
Attorneys

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TWEEZERS

William L. Heilig, Chicago, Ill.

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7 Claims. (Cl. 128—354)

My invention relates to an improvement in tweezers and has for one purpose the provision of tweezers for picking up small articles, removing hair or the like.

One object is the provision of such tweezers in which, in response to the normal closing operation, a pair of opposed gripping members have imparted to them a unitary sharp outward jerking movement.

Another purpose is the provision of improved trip means for such tweezers whereby, when a predetermined pressure is applied to the opposed tweezer members, they are jerked sharply backward in relation to the tweezers handle as a whole.

Another purpose is the provision of improved means for guiding the movable tweezers members of a tweezers assembly.

Other purposes will appear from time to time in the course of the specification and claims.

I illustrate my invention more or less diagrammatically in the accompanying drawing wherein:
Fig. 1 is a top view;

Fig. 2 is a side elevation with parts in longitudinal section;

Fig. 3 is a view similar to Fig. 2, with the parts in closed position;

Fig. 4 is a partial view similar to Fig. 3 illustrating the tweezers parts in retracted position;

Fig. 5 is a section on the line 5—5 of Fig. 4; and

Fig. 6 is a section on the line 6—6 of Fig. 2.

Like parts are indicated by like characters throughout the specification and drawing.

Referring to the drawing, 1 and 2 indicate handle and actuating portions connected together by a link or block 3 to which members 1 and 2 are pivoted as at 4 and 5, respectively. The members 1 and 2 are each provided with guide portions 6, 7 at the outer ends thereof, such guides forming passages 8 and 9 in which anti-frictional rollers 10 and 11 are positioned. 12 and 13 indicate abutment blocks having forward outwardly inclined abutment faces 14, 15 and inner abutment faces 16, 17, the purpose of which will later appear.

18 is a guide tube slidably mounted in a generally centrally located aperture 19 in the block or link 3. It contains a spring 20 secured at one end as at 21 in relation to an end of the guide 18. This outer end of the guide 18 is pivoted to angular links 22 and 23, the link 22 being pivoted at its opposite end to the side member 1 and the link 23 being pivoted at its opposite end to the side member 2. Thereby, the tube 18 is aligned midway between the members 1 and 2 and slides

slightly in the block 3 when the members 1 and 2 are moved toward or away from each other.

I illustrate the tweezers member proper as a spring element including opposed gripping ends 30 and 31 connected by a spring loop or coil 32 which may be secured to the free end of the spring 20. Normally, the loop 32 is thus held against the guide 18. Each gripping member 30, 31 is provided with a shoulder 33, 34 adapted to be opposed to the abutment blocks 12, 13, respectively. The parts are so proportioned that when the tweezers device is in the open position in which it is shown in Fig. 2, the shoulders 33 and 34 of the members 30 and 31 engage and are yieldingly drawn against the inclined abutment faces 14 and 15 of the blocks 12 and 13. The spring 20 serves to keep the parts in the position in which they are shown in Fig. 2.

When the operator moves the left hand ends of the members 1 and 2 toward each other, referring to the position in which the parts are shown in Figs. 2 and 3, the first result is to bring the gripping members 30 and 31 together, as shown in Fig. 3. In the course of this movement, the shoulders 33 and 34 move outwardly on the inclined faces 14 and 15 to the position in which they are shown in Fig. 3.

A slight additional compression exerted on the members 1 and 2 is sufficient then to trip the shoulders 33 and 34 and free them from the faces 14 and 15. The spring 20, which has meanwhile been somewhat expanded by the outward movement of the links 22 and 23, causes a sharp movement of the members 30 and 31 to the right, referring to the position of the parts as shown for example in Fig. 4. This outward movement terminates as the shoulders 33 and 34 engage the abutment surfaces 16 and 17, this being the position in which the parts are shown in Fig. 4.

In using the tweezers, for example as a depilatory, the user simply grips a hair between the members 30 and 31 by pressing the outer ends of the members 1 and 2 toward each other. This serves to engage the hair with the tweezers members sufficiently firmly for withdrawal. A slight continued movement, without any outward jerk on the part of the operator, then serves to free the shoulders 33 and 34 from the abutments 14 and 15, and the spring 20 snaps the tweezers members outwardly away from the surface of the body and the hair is removed.

When the pressure on the outer ends of the members 1 and 2 is released, the spring action of the tweezers member opens the device, until the shoulders 33 and 34 of the members 30 and 31

have cleared the outer edge of the inclined faces 14 and 15, whereupon the parts assume the position in which they are shown in Fig. 2.

It will be realized that whereas I have described and illustrated a practical and operative device, nevertheless many changes may be made in the size, shape, number and disposition of parts without departing from the spirit of my invention. I therefore wish my description and drawing to be taken as in a broad sense illustrative or diagrammatic, rather than as limiting me to my precise showing.

I claim:

1. In a tweezers device, a pair of handle members movable toward and away from each other, a gripping assembly, including opposed gripping members, mounted one on each of said handle members, means for moving said gripping members together into gripping contact in response to the movement of said handle members toward each other, means for normally holding said gripping members in extended position, and means for sharply retracting them after a predetermined approach toward each other of the handle members.

2. In a tweezers device, a pair of handle members movable toward and away from each other, a gripping assembly, including opposed gripping members mounted one on each of said handle members, means for moving said gripping members together into gripping contact in response to the movement of said handle members toward each other, means for normally holding said gripping members in extended position, including abutment members on said handle members and opposed abutments associated with said gripping members, and means for sharply retracting said gripping members after a predetermined approach toward each other of the handle members.

3. In a tweezers device, a pair of handle members movable toward and away from each other, a gripping assembly, including opposed gripping members mounted one on each of said handle members, means for moving said gripping members together into gripping contact in response to the movement of said handle members toward each other, means for normally holding said gripping members in extended position, and means for sharply retracting them after a predetermined approach toward each other of the handle members, including spring means interposed between said handle members and said gripping members.

4. In a tweezers device, a pair of handle members movable toward and away from each other, a gripping assembly, including opposed gripping members mounted one on each of said handle members, means for moving said gripping members together into gripping contact in response to the movement of said handle members toward each other, means for normally holding said gripping members in extended position, including abutment members on said handle members and opposed abutments associated with said gripping members, and means for sharply retracting said gripping members after a predetermined approach toward each other of the handle members, including spring means interposed between said handle members and said gripping members, said spring means being adapted normally to urge said abutments of said gripping members

against said abutments of said handle members.

5. In a tweezers device, a pair of handle members movable toward and away from each other, a gripping assembly, including opposed gripping members mounted one on each of said handle members, means for moving said gripping members together into gripping contact in response to the movement of said handle members toward each other, means for normally holding said gripping members in extended position, including abutment members on said handle members and opposed abutments associated with said gripping members, and means for sharply retracting said gripping members after a predetermined approach toward each other of the handle members, including spring means interposed between said handle members and said gripping members, said spring means being adapted normally to urge said abutments of said gripping members against said abutments of said handle members, said gripping members being adapted to clear said handle abutment members in response to a predetermined movement of said handle members toward each other, whereby said spring means is released to retract said gripping members.

6. In a tweezers device, a pair of handle members, a connecting link interposed between them, each handle member being pivotally mounted upon said connecting link at a point intermediate the ends of the handle member, a guide member slidably mounted in said link, additional link connections between one end of said guide member and an end of each of said handle members, opposed gripping members slidably mounted in the ends of said handle members, abutment means interposed between said gripping members and said handle members, adapted to maintain them normally in extended position, spring means associated with said guide member and interposed between said gripping members and said handle members, adapted to urge said gripping members to retracted position, and means for releasing said gripping members for movement toward said retracted position, in response to a predetermined approach of said handle members.

7. In a tweezers device, a pair of handle members, a connecting link interposed between them, each handle member being pivotally mounted upon said connecting link at a point intermediate the ends of the handle member, a guide member slidably mounted in said link, additional link connections between one end of said guide member and an end of each of said handle members, opposed gripping members slidably mounted in the ends of said handle members, abutment means interposed between said gripping members and said handle members, adapted to maintain them normally in extended position, spring means associated with said guide member and interposed between said gripping members and said handle members, adapted to urge said gripping members to retracted position, and means for releasing said gripping members for movement toward said retracted position, in response to a predetermined approach of said handle members, said releasing means being effective after the gripping members have reached a gripping contact with each other.

WILLIAM L. HEILIG.