

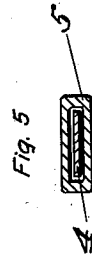
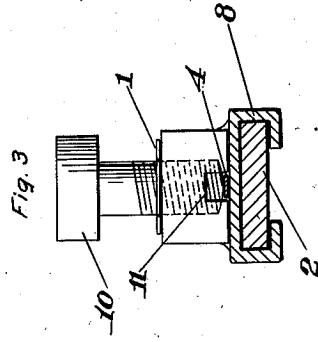
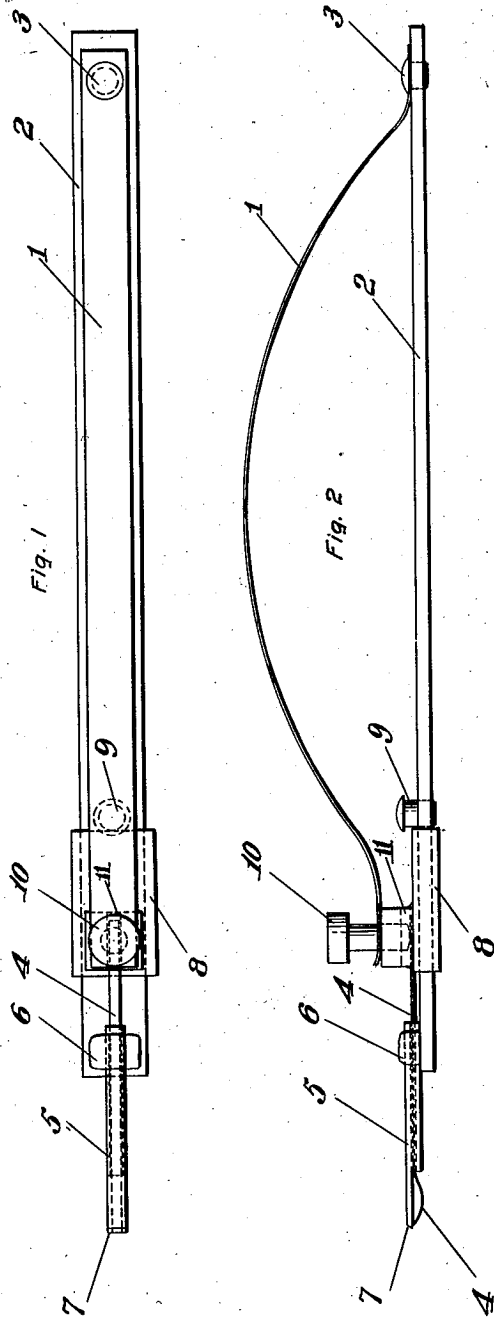
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QUEEN BEE GRAFTING TOOL

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## QUEEN BEE GRAFTING TOOL

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7 Claims. (Cl. 6-12)

In the raising of queen bees the general practice is to transfer the young larvae from the honeycomb to wax artificial queen cell cups. This operation is generally called transferring or queen grafting.

Grafting is usually performed with a tool made from a piece of wire being drawn out to a point at one end, said point being bent at right angles to the shank and slightly flattened. In picking up the larvae the tool point becomes coated with the larvae food which acts as a glue and makes it very difficult to dislodge said larvae. Hence the tool point must be very small, allowing larvae to project considerably over the tool point so that upon scraping the point upon the bottom of the artificial cell cup the larva will make sufficient contact to be dislodged by means of friction, which must be sufficient to loosen the larva from the tool point where its food causes it to adhere. With such a small point it is difficult to pick up the larva from its original bed. This method is slow and tedious. Utmost speed is essential as the quality of the queens grafted depends somewhat on the time these larvae are kept away from the hive.

The present invention relates to improvements in queen grafting tools in which the larvae are automatically removed from the transferring needle at the will of the operator and the objects of the improvements are: 1. To provide a larger flat surface with which to pick up the larva including all or part of its food. 2. To deposit the larva and food in the artificial queen cell by means of an automatic device. 3. To increase the speed and ease of the operation. 4. To lessen the possibility of injury to the larvae.

On the drawing: Figure 1 is a plan view of the tool. Figure 2 is a side view. Figure 3 is a cross section of the carriage 8. Figure 4 is a side view of the guide tube showing tongue 4 extended. Figure 5 is a cross section of the guide tube.

Guide tube 5 is fastened to body 2 at point 6. Spring 1 is fastened to body 2 at point 3. Carriage 8 slides on body 2 between stop 9 and the end of guide tube 5. Tongue 4 is detachable and is placed in position by inserting through guide tube 5 and is made fast to carriage 8 by thumb screw 10, passing over same through slot 11.

The tool is held in the hand in an upright position similar to a lead pencil, point down, with the thumb or one finger used to depress spring 1 which moves carriage 8 on body 2, forcing tongue 4 over chisel edge 7 to an extended position as in Figure 4. When released, spring 1

draws tongue 4 back to original position as in Figure 2. Due to the natural curling tendency of the tongue point, the projecting end assumes a curve similar to the curve at the bottom of a honey cell, passing underneath the larva and part of its food. Upon releasing the pressure on spring 1 the larva with its food is dislodged by chisel bevel 7.

It will be understood that I do not wish to restrict myself to the particular construction illustrated upon the accompanying drawing as these constructions may be considerably varied without departing from my invention.

Having thus fully described my invention, its utility and mode of operation, what I claim and desire to secure by Letters Patent of the United States is:

1. In a queen bee grafting tool, a body having an apertured guide member thereon, a flexible tongue having its end inserted in said guide member, and means to move said tongue in said guide member, the free end of said tongue being normally curved.

2. In a queen bee grafting tool, a body having a guide member thereon, a flexible tongue having its end inserted in said guide member and means to move said tongue in said member, the end of said member being bevelled, said tongue passing over said bevelled end, the end of said tongue being normally curved where it passes over the bevelled end.

3. In a queen bee grafting tool, a body having a guide tube thereon, a carriage slidable on said body, said carriage having an aperture therein, a flexible resilient tongue having one of its ends inserted in said aperture, and means to hold said tongue in said aperture, the end of said tube being bevelled, said tongue passing over said bevelled end, the free end of said tongue being normally curved where it passes over the bevelled end.

4. In a queen bee grafting tool, a body having a guide tube secured to one end thereof, a carriage slidable on said body in one direction, said carriage having a slot therein, and a flexible resilient tongue having one of its ends inserted in said slot, said tongue passing through said tube, the end of said tube being bevelled, said tongue passing over said bevelled end, the free end of said tongue being normally curved where it passes over the bevelled end.

5. In a queen bee grafting tool, a body having a guide tube secured to one end thereof, a carriage slidable on said body, said carriage having a slot therein, a thumb screw threaded in the carriage and having the end thereof passing into

said slot, and a flexible resilient tongue having one of its ends inserted in said slot and adjustably held by said screw, said tongue passing through said tube, the end of said tube being bevelled, said tongue passing over said bevelled end, the free end of said tongue being normally curved where it passes over the bevelled end.

6. In a queen bee grafting tool, a body having a guide tube secured to one end thereof, a carriage slidable on said body, a stop on the body to limit the movement of the carriage in one direction, said carriage having a slot therein, a thumb screw threaded in the carriage and having the end thereof passing into said slot, a flexible resilient tongue having one of its ends inserted in said slot and adjustably held by said screw, said tongue passing through said tube, one face of said tube being removed, the end of said tube being bevelled, said tongue passing over said bevelled end, the free end of said tongue being normally curved where it passes over the bevelled

end and means to withdraw the tongue into the tube.

7. In a queen bee grafting tool, a body having a guide tube secured to one end thereof, a carriage slidable on said body, a stop on the body to limit the movement of the carriage in one direction, said carriage having a slot therein, a thumb screw threaded in the carriage and having the end thereof passing into said slot, a flexible resilient tongue having one of its ends inserted in said slot and adjustably held by said screw, said tongue passing through said tube, one face of said tube being removed, the end of said tube being bevelled, said tongue passing over said bevelled end, the free end of said tongue being normally curved where it passes over the bevelled end and a spring engaging said screw at one end and engaging the handle at the other end and normally flexed to withdraw the tongue into the tube.

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