Automated Drosophila Maintenance System

Tech ID: 30553 / UC Case 2017-265-0

BACKGROUND

Drosophila spp., also known as fruit flies, are widely used in genetic research. Drosophila lines (e.g. flies with a particular mutation) can only be stored as live animals – they cannot be frozen and remain viable. So to maintain the stocks, the live flies are manually transferred from an old vial to a new vial on a regular basis (every 1-2 weeks). Some Drosophila labs maintain hundreds or even thousands of individual lines and so maintenance of these lines can be very time consuming. A UC Santa Cruz Drosophila researcher has developed a simpler and more efficient method of transferring the flies that requires significantly less hands-on work.

TECHNOLOGY DESCRIPTION

This invention involves a system of caps and tubes that can be set up in series. The caps include channels that allow larvae to move through the bottom of one tube to the bottom of another tube and adults to move from the top of one tube to the top of another tube (see illustration).

APPLICATIONS

Drosophila (and other insect) laboratory studies and experimentation

ADVANTAGES

- Significantly more efficient and less time consuming compared to standard practices
- Physical separation between parent flies and progeny
- Prevents accidental release of flies

INTELLECTUAL PROPERTY INFORMATION

Country	Type	Number	Dated	Case
United States Of America	Issued Patent	12,065,670	08/20/2024	2017-265
United States Of America	Published Application	2022145245	05/12/2022	2017-265
United States Of America	Published Application	20190127688	05/02/2019	2017-265

Additional Patent Pending

VISUAL MEDIA

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INVENTORS

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OTHER INFORMATION

KEYWORDS

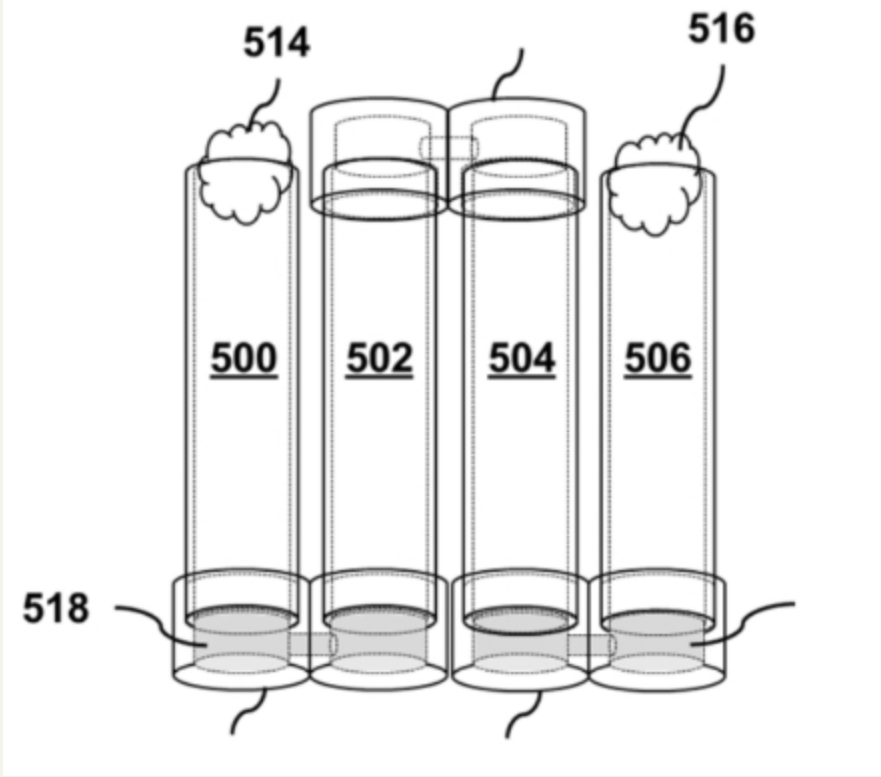
Drosophila, Fruit-flies, Breeding, Drosophila Breeding, Fruit-fly Breeding, Automated System, Automated Breeding System, Inexpensive, Breeding Device

CATEGORIZED AS

- **Agriculture & Animal Science**
  - Devices
  - Processing and Packaging
- **Biotechnology**
  - Genomics
- **Materials & Chemicals**
  - Other
- **Research Tools**
  - Other

RELATED CASES

2017-265-0, 2023-940-0



A drawing of one form of the invention: adults are placed in the first vial and lay eggs in fly food at the bottom of the vial. The larvae move through the channel in the cap at the bottom of the first vial into the second vial; and pupate and metamorphose into adults in the second vial. Then the adults in the second vial move through the channel in the cap at the top of the second vial into the third vial, and the process repeats.

RELATED TECHNOLOGIES

- Semi-Automated Insect Culturing Device

ADDITIONAL TECHNOLOGIES BY THESE INVENTORS

- Semi-Automated Insect Culturing Device

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