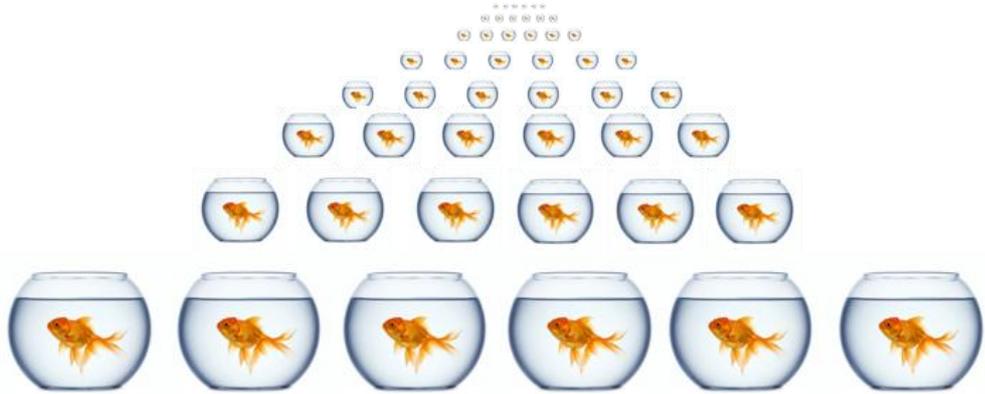


Feeding thousands of small aquaria in a discrete amount of time



Description of the invention

We have developed a small and practical pneumatic device that delivers pulsed amounts of fish food. The device enables the operator to feed a fish tank with a precise amount of food in the time of a second thus allowing to deliver food to thousands of tanks, arrayed in racks, in a precise amount of time.

Which need does it respond to?

Precise feeding of laboratory animals is crucial for animal welfare. Aquatic animals have an additional problem as the food released in the water dissolves and degrades very fast. For this reason, aquatic animals need to be fed several times a day. The amount of food released each time in a tank containing the animals has to be proportional to the number of animals per tank and their stage of development (weight). Different operators can have different perception of fish needs and, moreover, every single pinch of food released has an intrinsic huge variability. This device removes the intrinsic variability of manual feeding which is due to interpersonal and intrapersonal variability. Use of small aquatic animals such as Zebrafish and Medaka is becoming increasingly popular to model complex biological processes and diseases. Feeding hundreds or thousands of small aquaria arrayed in cabinets is a challenging technical problem. Animals need to be properly fed few times a day and the amount of food has to be precisely delivered to avoid organic wastes, over and underfeeding.

Market size and application

There are thousands of Research Institutions, Companies and Universities whose laboratories are using Zebrafish and Medaka for biological research and for development of new strategies and drugs against human diseases. Most of these laboratories are feeding the fish tanks erratically with a big waste of food and time: every tank has to be fed manually taking a pinch of food and releasing it in a small hole in the lid of the aquaria. This process is imprecise and the amount of food can vary greatly from pinch to pinch of the same operator and from pinches of different operators causing variability between tanks of the same institution.

Commercialization and Advancement status

Few working prototypes of our invention have been built and tested; the invention is the subject of an Italian patent application with the scope for international coverage. We are seeking industrial partners to support commercialization of the technology.

Titolarità del brevetto: Università di Padova

Inventore Proponente: Prof. Francesco Argenton - Dipartimento di Biologia

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Disponibilità alla licenza: Italia

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