

Aug. 17, 1965

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3,200,846

FLUID CONTROL DEVICE

Filed Feb. 15, 1962

2 Sheets-Sheet 1

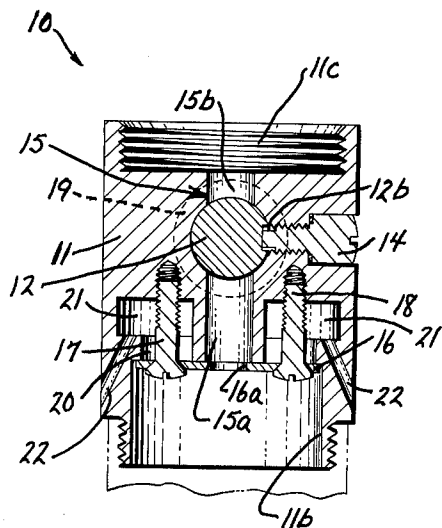


**FIG. 1**

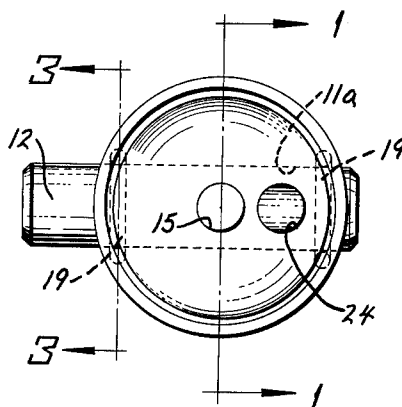


**FIG. 2**

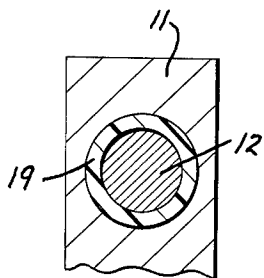


**FIG. 3**

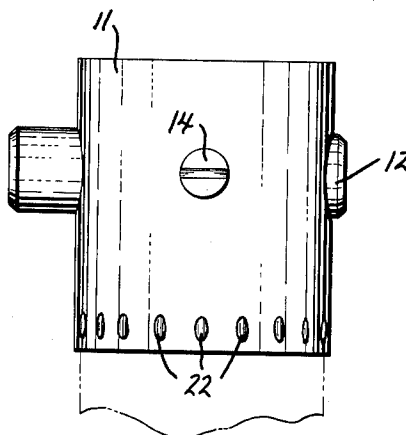


**FIG. 4**

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2 Sheets-Sheet 2

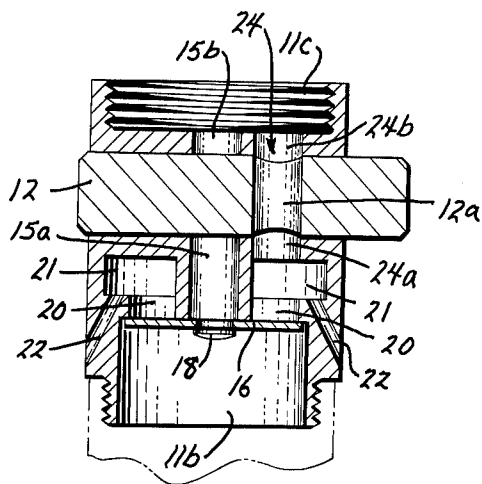


**FIG. 5**

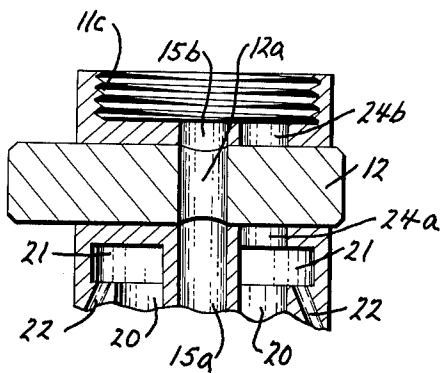


**FIG. 6**

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3,200,846

## FLUID CONTROL DEVICE

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Filed Feb. 15, 1962, Ser. No. 173,401

1 Claim. (Cl. 137-625.48)

The present invention relates to a fluid control device, and more particularly to a new and novel combination flow-spray structure for use with water faucets or the like.

As is known, various types of aerators have been employed heretofore to control, for example, the splashing of water. The applicant herein has invented a new and novel combination flow-spray device which is usable with the aforesaid aerators, or by itself, but, in any event, the present invention provides for the control of water in either a continuous stream or as a spray.

Briefly, the new and novel fluid control device forming the instant invention is defined as a structure which is readily engageable with a faucet or similar member through which water or other fluids flow, where by simple linear action, the fluid flow can be readily changed from a continuous stream to that of a spray, and conversely. Additionally, the instant device permits the use of the aforementioned aerators, so that selection can be made of either aerated water, or, as stated hereabove, water in the form of a spray.

Accordingly, the principal object of the present invention is to provide a new and novel fluid control device.

Another object of the present invention is to provide a new and novel combined flow-spray structure which is readily usable with faucets or other fluid carrying members.

A further object of the present invention is to provide a new and novel combination flow-spray device for a fluid which, through simple linear action, controls the form of the fluid as it is dispensed from the device.

A still further and more general object of the present invention is to provide a new and novel combination flow-spray device which is readily manufactured, easily installed, and which represents a minimum of maintenance.

Other objects and a better understanding of the present invention will become more apparent from the following description, taken in conjunction with the accompanying drawings, wherein

FIG. 1 is a view in vertical section, taken at line 1-1 of FIG. 2 and looking in the direction of the arrows, showing the combination flow-spray structure forming the instant invention;

FIG. 2 is a top plan view of the applicant's new and novel flow-spray structure;

FIG. 3 is a view in vertical section, partly fragmentary, taken at line 3-3 of FIG. 2 and looking in the direction of the arrows, showing further details of the combination flow-spray structure of FIGS. 1 and 2;

FIG. 4 is a view in side elevation of the combination flow-spray structure of FIGS. 1, 2 and 3;

FIG. 5 is a view in vertical section of the applicant's invention, corresponding to the view of FIG. 4, showing the control lever therefor in position for spray action; and,

FIG. 6 is another view in vertical section, partly fragmentary, however, and also corresponding to the view of FIG. 4, showing the control lever for the instant invention in position for providing a continuous stream of fluid.

For the purposes of promoting an understanding of the principles of the invention, reference will now be made to the embodiment illustrated in the drawings and specific language will be used to describe the same. It will nevertheless be understood that no limitation of the scope of the invention is thereby intended, such alterations and

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further modifications in the illustrated device, and such further applications of the principles of the invention as illustrated therein being contemplated as would normally occur to one skilled in the art to which the invention relates.

Referring now to the figures, the applicant's new and novel fluid control device 10 comprises a body 11 having a passageway 11a extending laterally therethrough. Disposed within and movable along the aforesaid passageway 11a is an operating or control member 12 which has a passageway 12a extending normally to its longitudinal axis. The control member 12 typically has a groove 12b along its outer surface, where such groove 12b is adapted to receive the head of a control screw 14 which is recessed in the body 11. As will be apparent from the following description, the preceding groove 12b and control screw 14 arrangement is provided to limit sliding movement of the control member 12. Additionally, washers 19 are provided at opposite ends of the control member 12 for purposes of fluid seal (see FIG. 4).

Extending axially through the body 11 is a passageway 15, divided into portions 15a and 15b, where portion 15a communicates with a recess 11b disposed at one end of the body 11, while portion 15b communicates with a recess 11c at the other end of the body 11. As should be evident from the figures recess 11b has a partly threaded outer surface, while recess 11c is internally threaded. In this latter connection, it should be understood that the internally threaded recess 11c is provided to secure the instant invention to a type of fitting (not shown) which has external threads, while the threaded portion surrounding the recess 11b is adapted to receive an aerator (shown by fragmentary phantom lines in FIGS. 1, 4 and 5), if so desired.

As should be apparent from FIGS. 1 and 5, the recess 11b at one end of the body 11 has an inner wall defined by a plate 16, where such plate 16 is retained in position by screws 17 and 18. The plate 16 has an opening 16a therein to provide the aforescribed communication between portion 15a of the passageway 15 and the recess 11b.

The body 11 also comprises other cut-out portions 20 and 21, where the plate 16 serves as a partition to close any communication between the aforesaid cut-out portions 20 and 21 and the recess 11b in the body 11. In this latter connection, downwardly and outwardly extending openings 22 are provided proximate the edge wall of the cut-out portion 21, which openings 22 serve to provide direct communication between the cut-out portions 20 and 21 and the outside of the flow-spray structure (see also FIG. 4). Additionally, a passageway 24, defined by portions 24a and 24b, provides depending upon the position of the control member 12, to be discussed herebelow, communication between the cut-out portion 21 and the internally threaded recess 11c of the body 11 (see FIGS. 5 and 6).

In use, and with particular reference to FIGS. 5 and 6, the instant flow-spray device 10 is typically threaded onto external threads at the end of a faucet, such threaded engagement being at the internally threaded recess 11c of the body 11. If desired, an aerator is threaded onto the external threads surrounding the recess 11b. In any event, and with fluid flow, such as water, for example, and with the control member 12 in the position of FIG. 5, fluid passes through a path defined by the internally threaded recess 11c, portion 24b of passageway 24, passageway 12a in the control member 12, portion 24a of passageway 24 and into the cut-out portions 20 and 21. Thereafter, the water, or other fluid, flow continues through the openings 22, to thereby provide a spray effect.

As should be evident from the drawings, and as stated

above, the plate 16 plays an important part in preventing any fluid flow into the recess 11b.

When the control member 12 is moved to the position of FIG. 6, a path of fluid flow is created defined as the internal threaded recess 11c, portion 15b of passageway 15, passageway 12a in the control member 12, portion 15a of the passageway 15, the opening 16a in the plate 16, and the recess 11b of the body 11. In other words, water flows in a continuous stream, in contrast to the spray effect achieved when the control member 12 is in the position of FIG. 5.

From the preceding, it should be apparent that the applicant herein has provided a new and novel flow-spray structure which simply and conveniently permits the selective control of fluid flowing therefrom either in the form of a spray or a continuous stream. The desired end results are achieved by the sliding linear movement of a control member, where such structure affords convenience in assembly as well as a minimum of maintenance.

The flow-spray structure described hereabove is susceptible to changes within the spirit of the invention. For example, instead of the internally threaded portion 11c of the body 11, external threads may be provided around the outer surface of the device in the same area to thereby permit the threading of the unit into a faucet which has internal threads at its end. Similarly, the recess 11b may be internally threaded to permit the assembly of the body 11 with an aerator having external threads along its upper end. Additionally, and although not shown by the figures, washers, or like devices, are used in the assembly of the structure with the faucet,

or water-carrying member, and with the aerator, as necessary or desired. Thus, the above description should be considered as illustrative and not as limiting the scope of the following claim.

I claim:

A fluid control device comprising a body having a first fluid carrying passageway extending therethrough, a separate second fluid carrying passageway substantially parallel to said first passageway and opening into a cut-out portion disposed within said body, outlets extending between said cut-out portion within said body and the outside of said device, and a linearly slidable control member having a portion defining a fluid flow path for completing the said first or the said second fluid carrying passageways through the selective movement of said linearly slidable control member in a direction lateral to said first and said second fluid carrying passageways.

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