

[72] Inventor **Mitsuo Inoue**
Ibaragi, Osaka, Japan
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 [73] Assignee **C.D.M. Kabushiki Kaisha**
Kishiwada City, Osaka Prefecture, Japan

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Primary Examiner—Allen N. Knowles
Assistant Examiner—John J. Love
Attorney—Oberlin, Maky, Donnelly & Renner

- [54] **FOUNTAIN APPARATUS**
5 Claims, 8 Drawing Figs.
- [52] U.S. Cl..... **239/17,**
239/22
- [51] Int. Cl..... **B05b 17/08**
- [50] Field of Search..... **239/16-**
—23, 67, 97, 98, 551

ABSTRACT: Fountain apparatus wherein the water rotates a waterwheel for driving the same, with the waterwheel being operatively connected to closure members, each associated with a water nozzle, through a series of gears and cams so as to sequentially emit water through the series of nozzles responsive to rotation of the waterwheel.

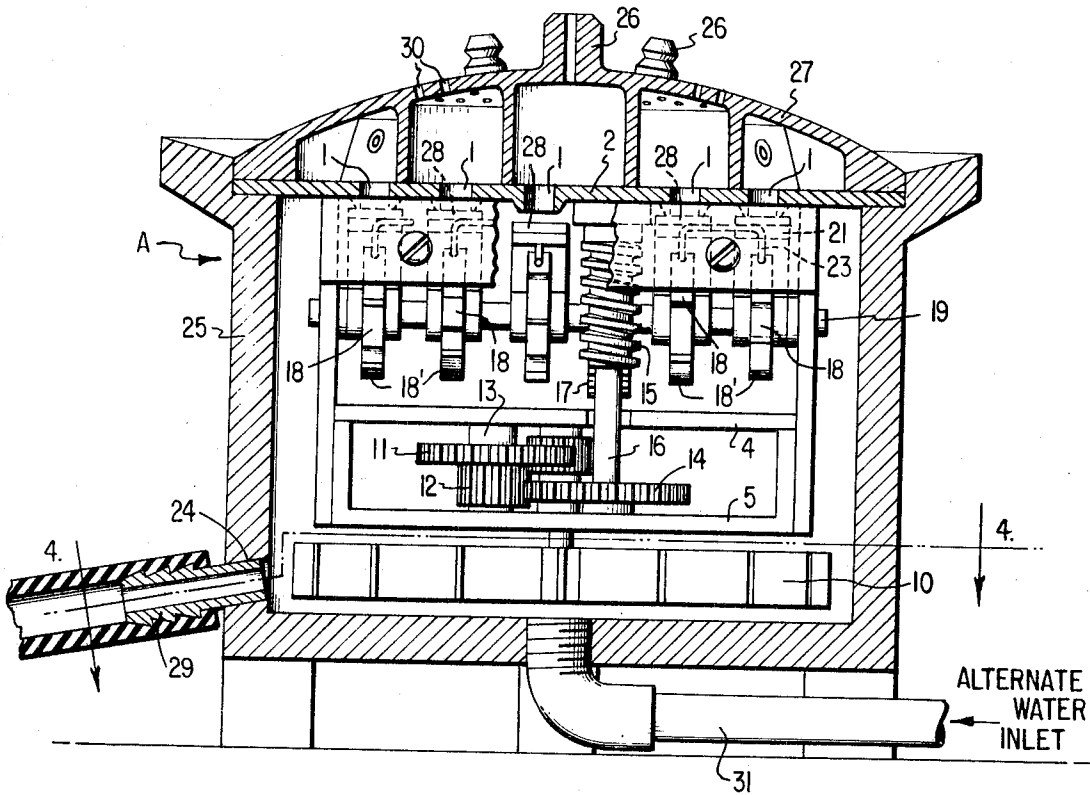


FIG. 1

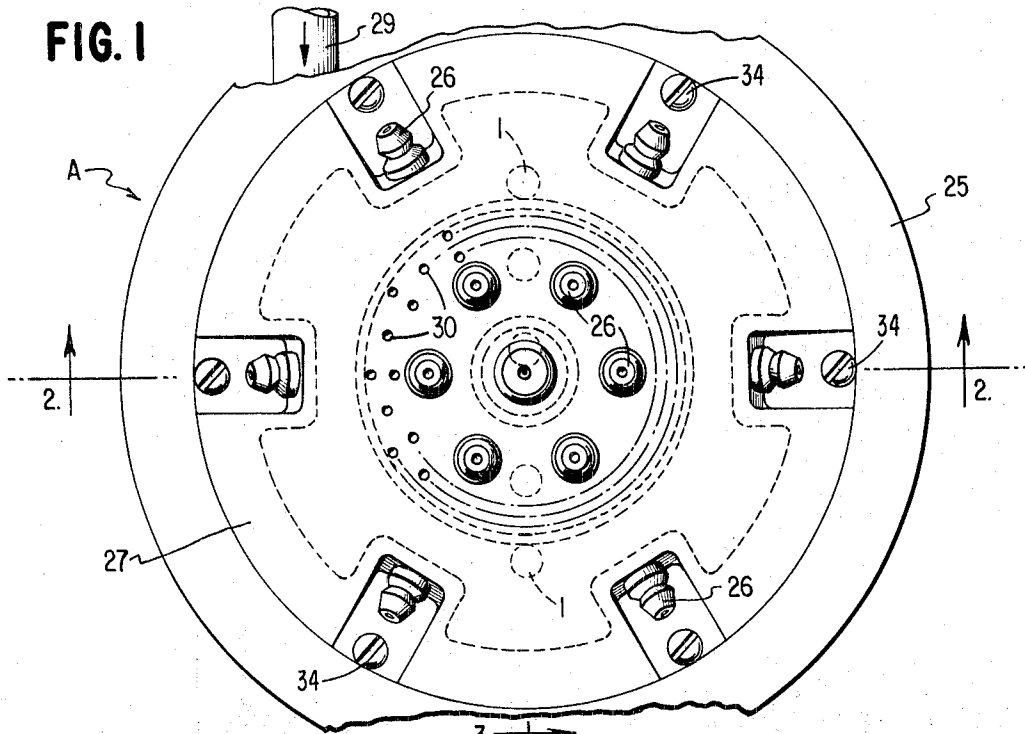
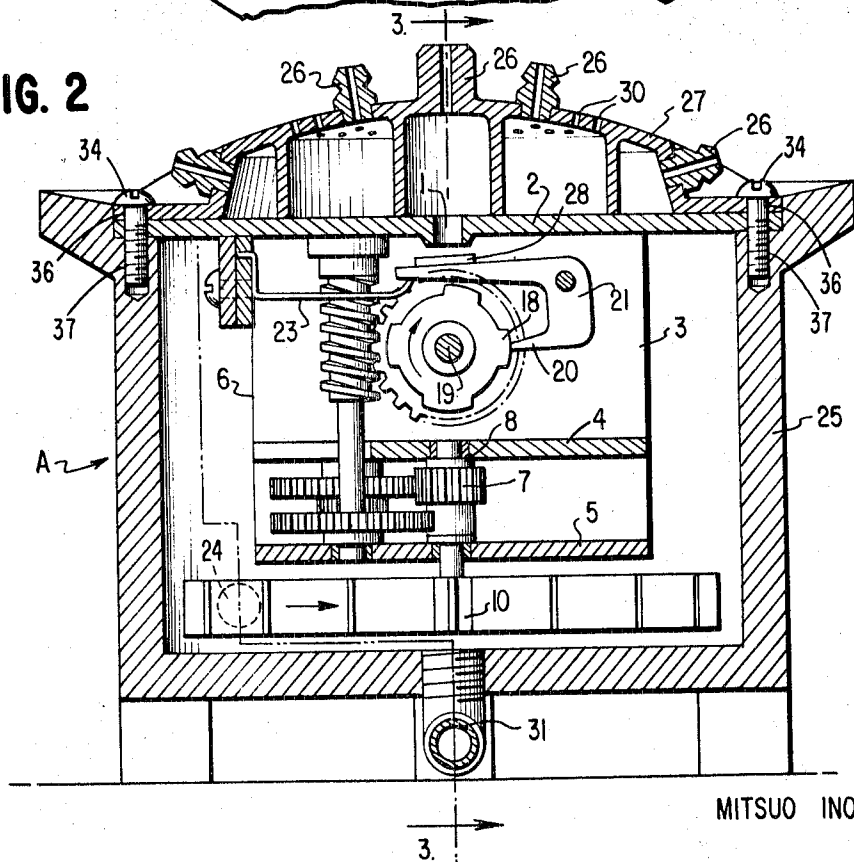


FIG. 2



INVENTOR

MITSUO INOUE

BY

Oberlin, Maky, Donnelly & Renner
ATTORNEYS

FIG. 3

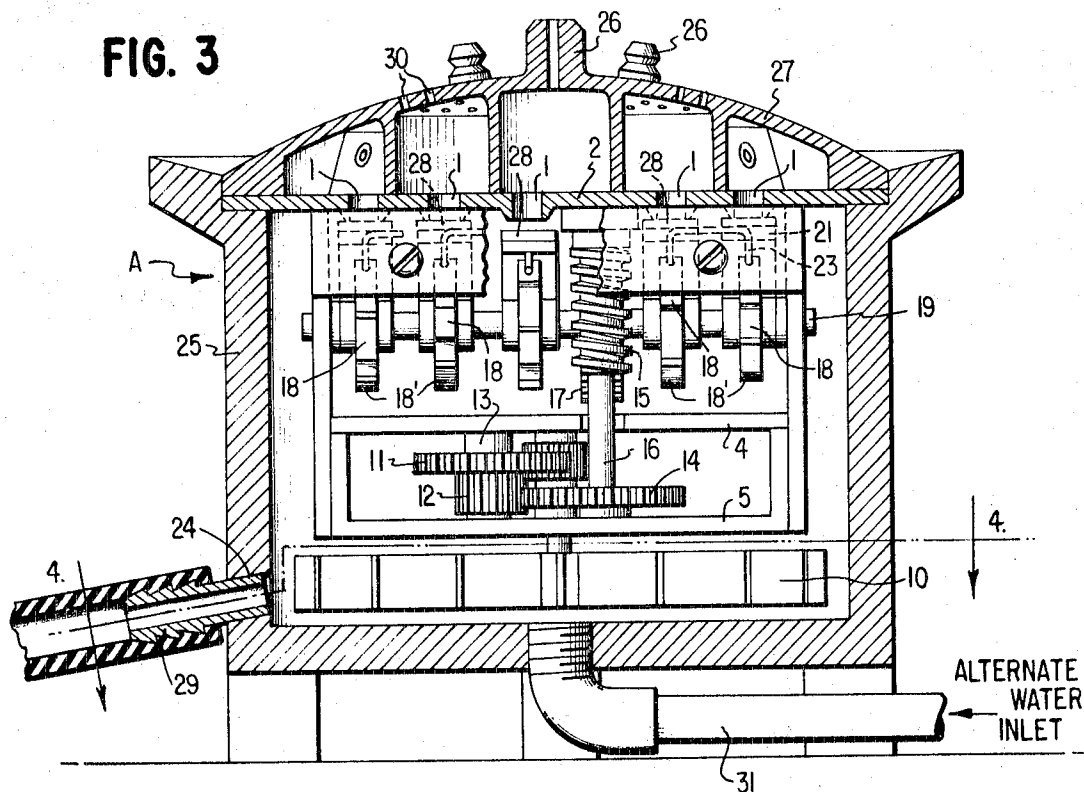
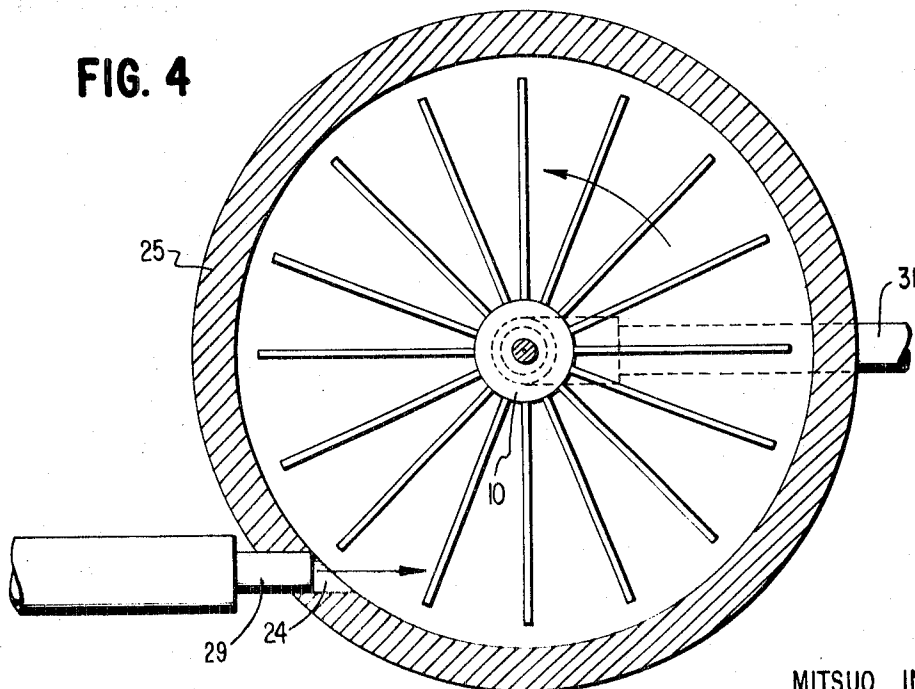


FIG. 4



INVENTOR
MITSUO INOUE

BY
Oberlin, Maky, Donnelly & Renner
ATTORNEYS

FIG. 5

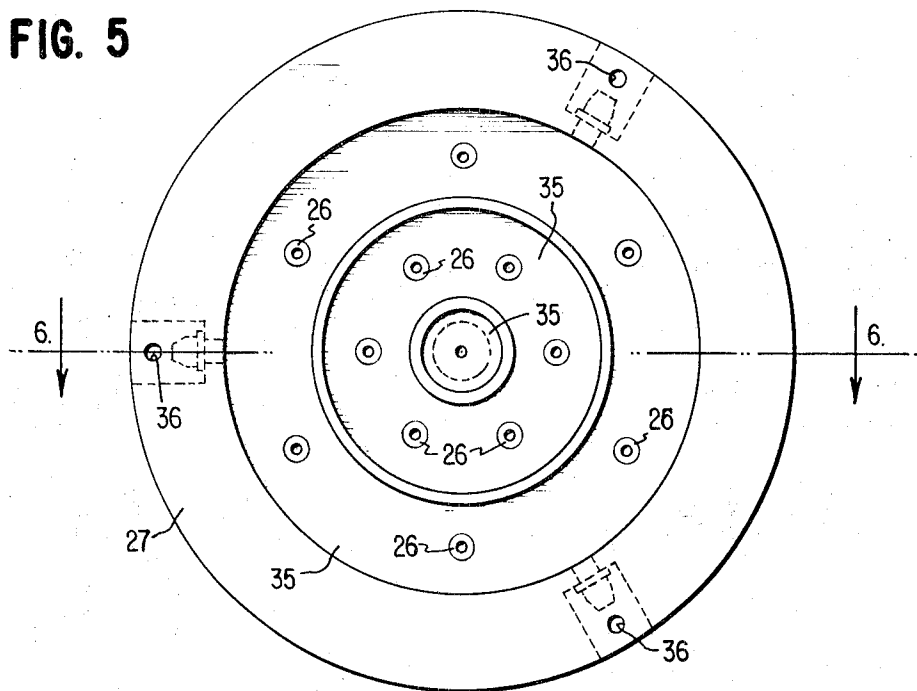


FIG. 6

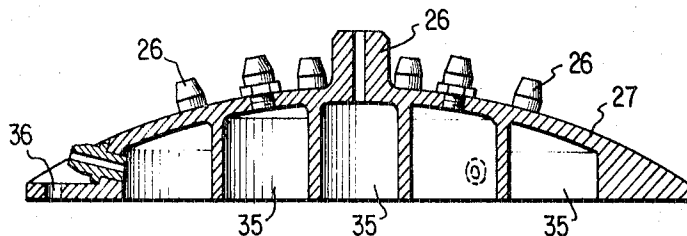


FIG. 7

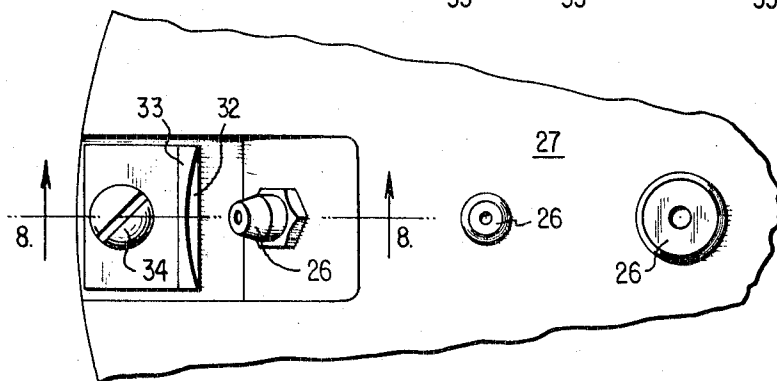
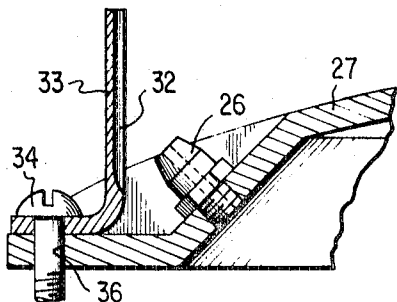


FIG. 8



INVENTOR
MITSUO INOUE

BY
Oberlin, Mabe, Donnelly & Kenner
ATTORNEYS

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FOUNTAIN APPARATUS

THE DISCLOSURE

Fountain apparatuses have previously been generally designed to spout water forcibly through nozzles by use of electric motors, with such apparatuses being characterized by requiring frequent maintenance and repair, in addition to the initial relatively high cost due to their complicated construction.

A principal object of the present invention is to provide a fountain apparatus in which the entire mechanism is simply constructed and utilizes water as the driving power for mechanism operation and as the jet water spouted out of the nozzles. In one form of the invention, water can be used simply as jet water without being utilized as the driving power.

Another object of the invention is to provide a fountain apparatus in which the water spouted therefrom can be atomized, when required, by means of a step plate provided removably in front of each nozzle. Alternatively, the apparatus can be used as an ordinary fountain merely by taking these step plates away.

A further object of the invention is the provision of fountain apparatus having an upper cover which is provided with water holes, the water running in through said water holes being distributed to each nozzle with said grooves connected to nozzles respectively. With conventional fountain apparatus, the water holes and nozzles are directly connected by pipes, with cleaning of the pipes requiring dismantling of the same, a difficult and troublesome task. By the above-mentioned construction according to the present invention, it is made very easy to clean the nozzles of the apparatus simply by removing its upper cover.

BRIEF DESCRIPTION OF THE DRAWINGS

The invention is described below in further reference to the annexed drawings in which:

FIG. 1 is a top plan view of a fountain apparatus according to the present invention;

FIG. 2 is a vertical sectional view of the FIG. 1 apparatus taken along line 2-2 of FIG. 1;

FIG. 3 is a vertical sectional view taken on line 3-3 of FIG. 2;

FIG. 4 is a horizontal sectional view taken along line 4-4 of FIG. 3;

FIG. 5 is a bottom plan view of a modified form of spray head cover;

FIG. 6 is a vertical sectional view taken along line 6-6 of FIG. 5;

FIG. 7 is a fragmentary plan view of a further modified form of spray head; and

FIG. 8 is a vertical sectional view taken on line 8-8 of FIG. 7.

DESCRIPTION OF THE PREFERRED EMBODIMENT

In the embodiment illustrated in FIGS. 1-3, the main body A of the fountain apparatus according to the invention is formed from a machine frame 6 which comprises an upper plate 2 having a series of water openings 1 provided therein. Side plates 3 extend downwardly from the upper plate 2, with middle plate 4 and bottom plate 5 extending between the side plates 3 to support by bearings a main rotating shaft 8. The shaft 8 has a small gear 7 fitted thereon, and a waterwheel 10 is fixed to the main rotating shaft 8 at the bottom end thereof which extends under bottom plate 5.

Between the middle plate 4 and bottom plate 5 is a secondary rotating shaft 13 supported by bearings and fitted with a large gear 11 and another small gear 12, the large gear 11 being engaged with the small gear 7. Between the upper plate 2 and bottom plate 5 there is a rotating transmission shaft 16 supported by bearings and carrying a large gear 14 and a worm gear 15, with the large gear 14 being engaged with the small gear 12 fitted on the secondary rotating shaft 13.

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A spur gear 17 is provided to engage the worm gear 15 fitted on the rotating transmission shaft 16, and a series of cams 18' having cam projections 18 of different shapes are fitted on a camshaft 19 and positioned at both sides of said spur gear 17. Pawls 20 are provided to engage with each cam projection 18 on the camshaft 19, and pivoted members 21 approximately L-shaped are supported between the side plates 3.

Springs 23 are provided to resiliently urge upwardly the adjacent arm of the pivoted members 21 thereby positively closing the series of water openings 1 formed in the upper plate 2. Rubber valve plates 28 are carried by the arms of the pivoted members 21 to seat around the openings 1 thereby completely closing the same as seen in FIG. 2. The springs 23 are mounted on an arm extending between the plates 3.

The main body A is mounted on a fountain frame 25 having an opening 24 cut upward obliquely and tangentially through the sidewall thereof. A water inlet pipe 29 is mounted in the opening 24 and coupled to a source of water supply. A cover 27 is provided on which are mounted a plurality of nozzles 26. A plurality of relatively small spray openings 30 are formed in the cover around the central group of nozzles. An alternative water inlet pipe 31 is provided in the central, bottom portion of the frame 25. Through adjustment of the cams 18' to provide access to all of the openings 1, it is possible to direct water through the alternative inlet 31 to the jet nozzles 26 without rotating the waterwheel 10.

DESCRIPTION OF ALTERNATIVE EMBODIMENT

FIGS. 7 and 8 show a modification of the embodiment example of the invention illustrated by FIGS. 1-3. In this modified embodiment, removable step plates 33, each generally L-shaped in cross section, are fixed in front of certain of the nozzles 26 on the upper cover 27 by means of screws 34. The vertical legs of the step plates 33 are in the form of concaved arc faces 32 whereby when water spouted from nozzles 26 hits said concaved arc faces 32, the spouted water will be scattered vaporized into the air. While capable thereby to atomize jet water from nozzles 26, said step plates 33 can be removed easily by taking off screws 34 in order to change the fountain into an ordinary one.

DESCRIPTION OF FURTHER EMBODIMENT

FIGS. 5 and 6 show a further embodiment of the invention, with the upper cover 27 in this form being provided with circular, semicircular or rectangular grooves 35 concurrent to water holes 1, thereby letting the water coming in through the water holes be distributed to each arcuate grouping or nozzles 26. It is therefore not necessary to connect the water holes 1 directly with nozzles 26 by means of pipes like conventional methods, and cleaning of the nozzles can be done very easily by simply removing the upper cover 27, which is retained in place by stop screws 36 which engage screw holes 37.

I claim:

1. Fountain apparatus comprising a fountain frame, a waterwheel mounted in said frame and adapted to be rotated by a source of water communicating with the interior of said fountain frame, a plurality of jet nozzles mounted in said frame above said wheel and adapted to receive said water and emit the same from said apparatus, and a plurality of openings associated with each of said nozzles, said openings being adapted to be closed by pivoted members operatively connected to said driving wheel through a series of gears and cams.

2. The fountain apparatus of claim 1 further including removable step plates provided in front of said jet nozzles.

3. The fountain apparatus of claim 1 wherein circular, semicircular or rectangular grooves concurrent to said openings are provided on the frame letting the water that comes in through said water holes be distributed to each nozzle with said grooves each linked to respective nozzles.

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4. The fountain apparatus of claim 1 further including an additional water hole provided at the bottom of the fountain frame through which water is conducted into said frame and spouted out of said jet nozzles when all of the same are open and said waterwheel is not rotating.

5. Fountain apparatus comprising a frame, a waterwheel mounted in said frame and adapted to be rotated by a source of water communicating with the interior of said fountain frame, a plurality of arcuately arranged jet nozzles mounted in said frame above said wheel and adapted to receive said water

and emit the same from said apparatus, and means in said frame defining a plurality of openings adapted to sequentially communicate with water entering said frame, said openings being axially aligned and each one thereof being associated with at least one of said nozzles by a predeterminedly shaped groove formed in said frame, and pivoted members operative-ly connected to said driving wheel for closing said openings in predetermined sequence.

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