Sept. 23, 1969 V. SIANO 3,468,343

SPOUT OPERATED MIXING VALVE

Filed Oct. 5, 1967

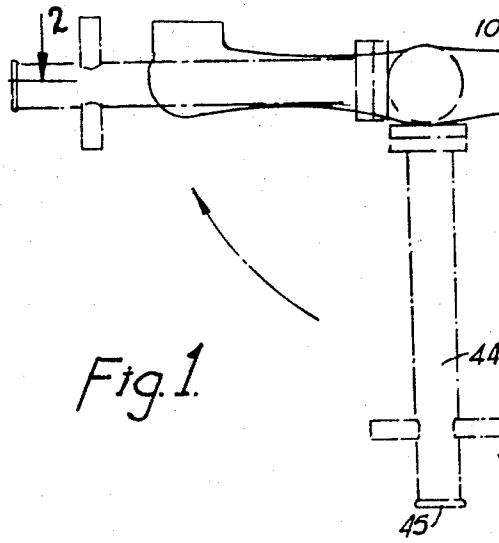



Fig. 1.

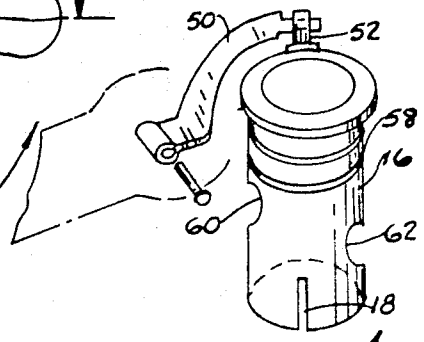



Fig. 4.

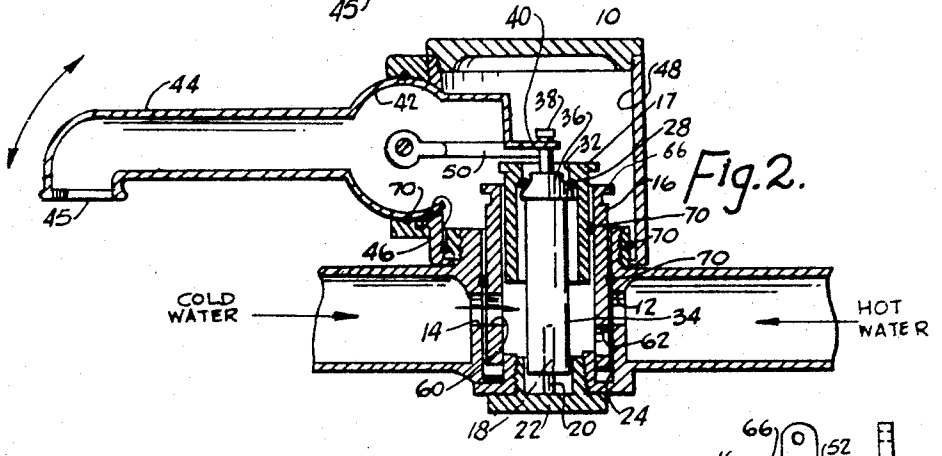



Fig. 2.

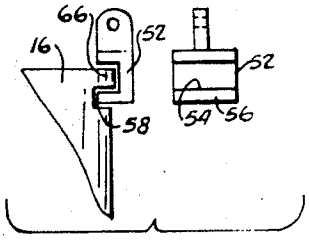



Fig. 5.

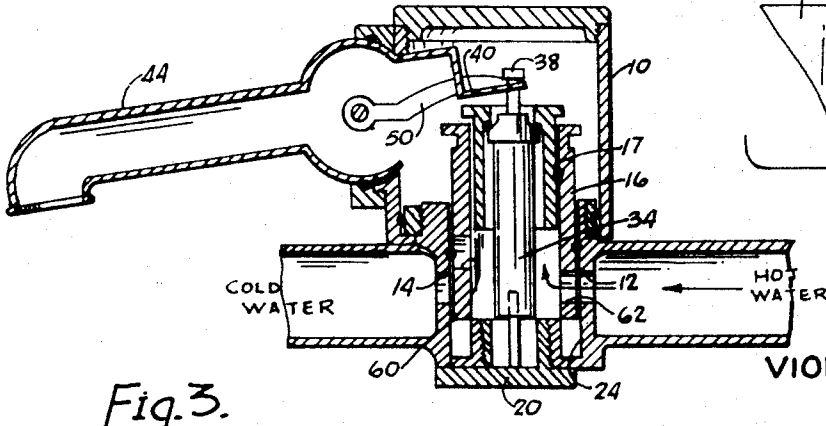



Fig. 3.

INVENTOR.
VIOLET SIANO

United States Patent Office 3,468,343 Patented Sept. 23, 1969



3,468,343

# SPOUT OPERATED MIXING VALVE

Violet Siano, 264 Milton Ave.,
Ballston Spa, N.Y. 12020

Filed Oct. 5, 1967, Ser. No. 673,178
Int. Cl. F16k 19/00
U.S. Cl. 137—636.2 5 Claims

## ABSTRACT OF THE DISCLOSURE

A swinging spout faucet or valve adapted to be connected to hot and cold sources wherein the volume of water flow is controlled by manually pivoting the spout about one end in a vertical plane and the temperature of the water is controlled by manually pivoting the spout about the same end in a horizontal plane.

## Summary of the invention

My valve comprises a valve body having a first inlet port adapted to be connected to a hot water source, a second inlet port adapted to be connected to a cold water source and an outlet port. A hollow spout is provided with a discharge end through which water is discharged for use and an opposite open end disposed adjacent the outlet port. First means connects the opposite spout end to the outlet port and responds to pivotal motion of the spout in a vertical plane about the opposite end to regulate the volume of water discharged through the spout. Second means in the body associated with the inlet ports and connected to the opposite spout end responds to pivotal motion of the spout about its opposite end in a horizontal plane to control the temperature of the discharge water by mixing the hot and cold water in desired proportions.

## Brief description of the drawings

In the drawings:

FIG. 1 is a top view of my valve;

FIG. 2 is a view through 2—2 in FIG. 1 with the spout in horizontal position;

FIG. 3 is a view similar to FIG. 2 but showing the spout in lowered position;

FIG. 4 is a detail view of certain parts used in my valve; and

FIG. 5 is an additional detail view of some of the parts shown in FIG. 4.

## Detailed description of preferred embodiments

Referring now to FIGS. 1–5, there is shown a valve body **10** having a vertical cylindrical opening **24** with an inlet port **12** in the wall of the opening connected to a hot water pipe and an oppositely disposed inlet port **14** in the wall of the opening connected to a cold water pipe. A first vertical hollow cylinder **16** open at both ends is disposed in the opening and has a bottom vertical slot **18** engaging a finger **20** on a cap **22** sealing the bottom of opening **24**.

Cylinder **16** adjacent but below the lip **66** at the top end contains a second hollow concentric cylinder **17** which contains an inner O ring **28** disposed against an inner shoulder, the opening **32** of which defines an outlet port. A vertical member **34** disposed axially in the cylinder **17** has a tapered head **36** which serves as a seat. Head **36** has a raised extension **38** which engages a slot in a plate **40** connected to end **42** of spout **44** having an opposite discharge end **45**. End **42** fits movably into opening **46** in the body which communicates via chamber **48** to the outlet port. The center of end **42** is connected to one end of a curved arm **50**. The other end of arm **50** engages a fitting **52** having a cut out portion **54** into which the lip **66** fits, the bottom of portion **54** having an extension **56** riding in an upwardly spiraling outer groove **58** in the cylinder periphery.

As a result, when the spout is pivoted in a horizontal plane, the movement of arm **50** causes fitting **52** to describe an arc about the cylinder while extension **56** remains in the groove **58**. This action raises or lowers the cylinder, depending upon the direction of pivot. Cylinder **16** has two oppositely disposed openings **60** and **62** which are at different vertical levels. The vertical movement of the cylinder moves these openings vertically with respect to the corresponding inlet ports whereby the water flow through one port and the associated opening is either increased or decreased while the flow of water through the other port and associated opening is either decreased or increased. As a result the total flow of water from both sources upward between the cylinder and the vertical member **34** remains constant but the relative proportions of hot and cold water is varied, thus providing the mixing action.

As the spout is pivoted in a vertical plane, the plate **40** moves extension **38** up or down to control the volume of water flow. (In the position shown in FIG. 3, the flow of water is cut off.) Additional O rings **70** provide seals against leakage. The slot in plate **40** is sufficiently long to permit the spout to be horizontally pivoted without moving member **34**.

While I have described my invention with particular reference to the drawings, my protection is to be limited only by the terms of the claims which follow.

Having thus described my invention, I claim as new and desire to secure by Letters Patent:

**1.** A valve adapted to be connected to separate sources of hot and cold water, said valve comprising:

a valve body having a first inlet port adapted to be connected to the hot water source, a second inlet port adapted to be connected to the cold water source and an outlet port;

a hollow spout having a discharge end through which water is discharged and an opposite open end disposed adjacent the outlet port;

first means connecting said opposite spout end to the outlet port and responsive to a pivotal movement in a vertical plane of said spout about the discharge end to regulate the volume of water discharged through the outlet port into the spout; and

second means in said body associated with the inlet ports and connected to said opposite spout end, said second means being responsive to a pivotal movement in a horizontal plane of said spout about the discharge end to control the temperature of the water discharged through the outlet port into the spout by mixing hot and cold water in desired proportions.

**2.** A valve as set forth in claim **1** wherein the water flow through the spout is cut off when the spout below the horizontal, the volume of flow increasing as the spout is manually pivoted upwards.

**3.** A valve as set forth in claim **2** wherein equal volumes of hot and cold water are mixed when the spout

extends perpendicularly outwards from the body, the ratio of hot to cold water being increased from unity when the valve is pivoted in the horizontal plane in one direction from the perpendicular position and being decreased from unity when the valve is pivoted in the horizontal plane in the opposite direction from the perpendicular position.

4. A valve as set forth in claim 3 wherein said first means includes a vertical member having a seat engageable with said outlet port, said member being movable in a vertical plane by vertical pivotal motion of the spout to move the seat toward and away from the outlet port to decrease or increase the flow of water.

5. A valve as set forth in claim 4 wherein said second means includes a vertical hollow tube having a first opening movable into and out of registration with the first inlet port and a second opening movable into and out of registration with the second inlet port, said tube being



moved vertically up and down in accordance with the horizontal pivoting of the spout to partially open one of the water passages and partially close the other to vary the temperature without altering the total volume of water flow.

**References Cited**

UNITED STATES PATENTS

| | | | |
|---|---|---|---|
| 2,373,702 | 4/1945 | Moen | 137—636.2 |
| 2,504,610 | 4/1950 | Wolf | 137—636.1 X |
| 3,168,113 | 2/1965 | McJohnson | 137—636.1 |
| 3,342,214 | 9/1967 | Paneral | 137—636.4 |
| 3,385,324 | 5/1968 | Wolf | 137—636.4 |


CLARENCE R. GORDON, Primary Examiner

U.S. Cl. X.R.

137—607