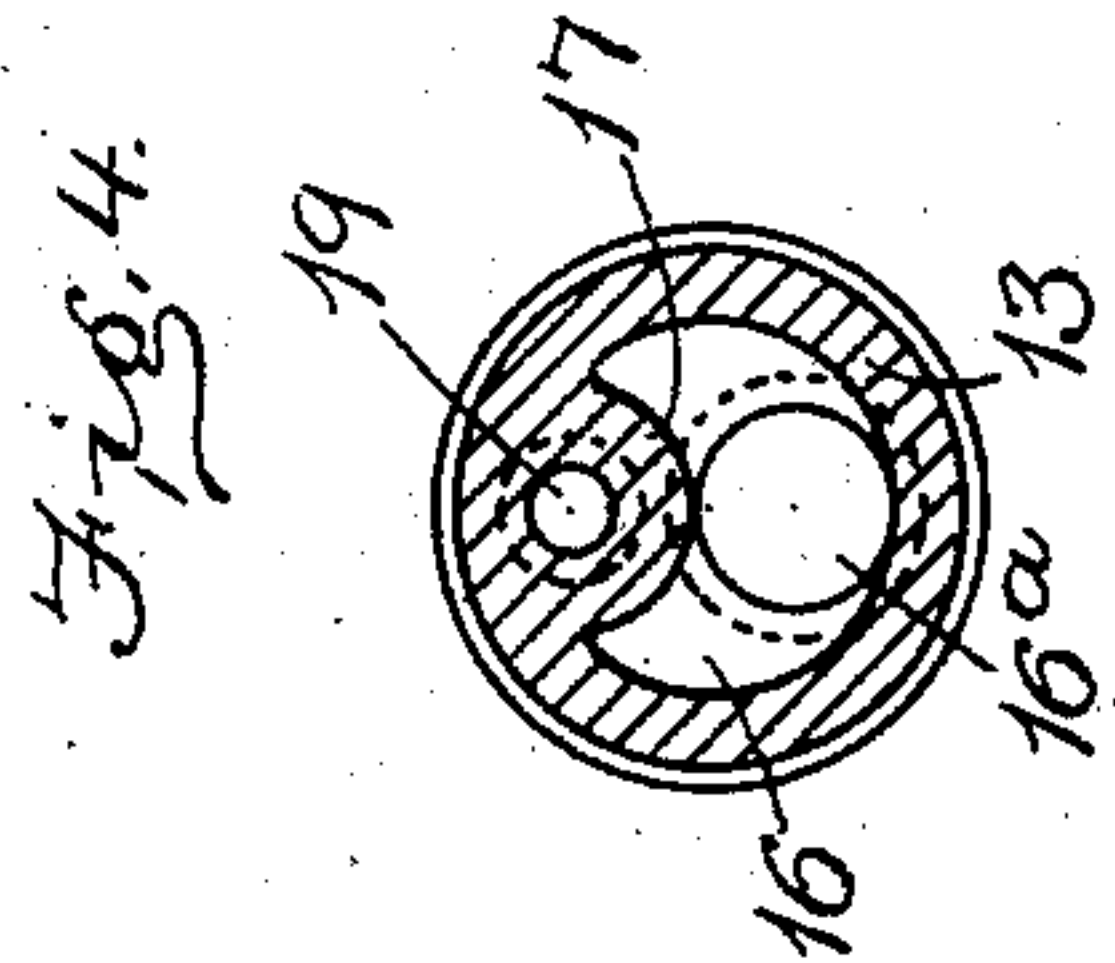
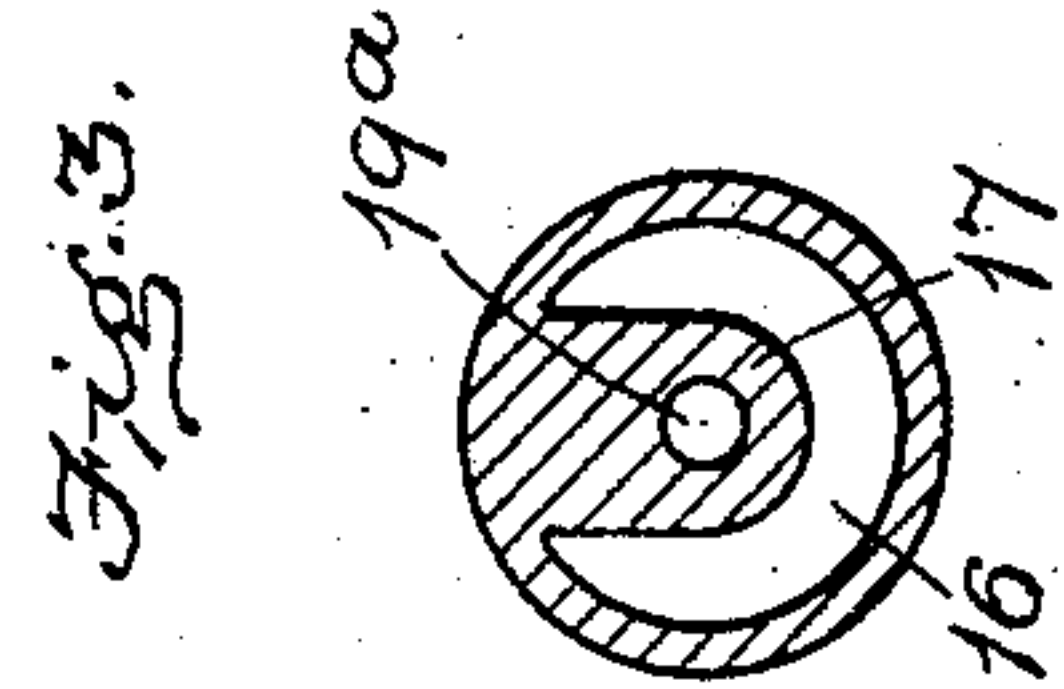
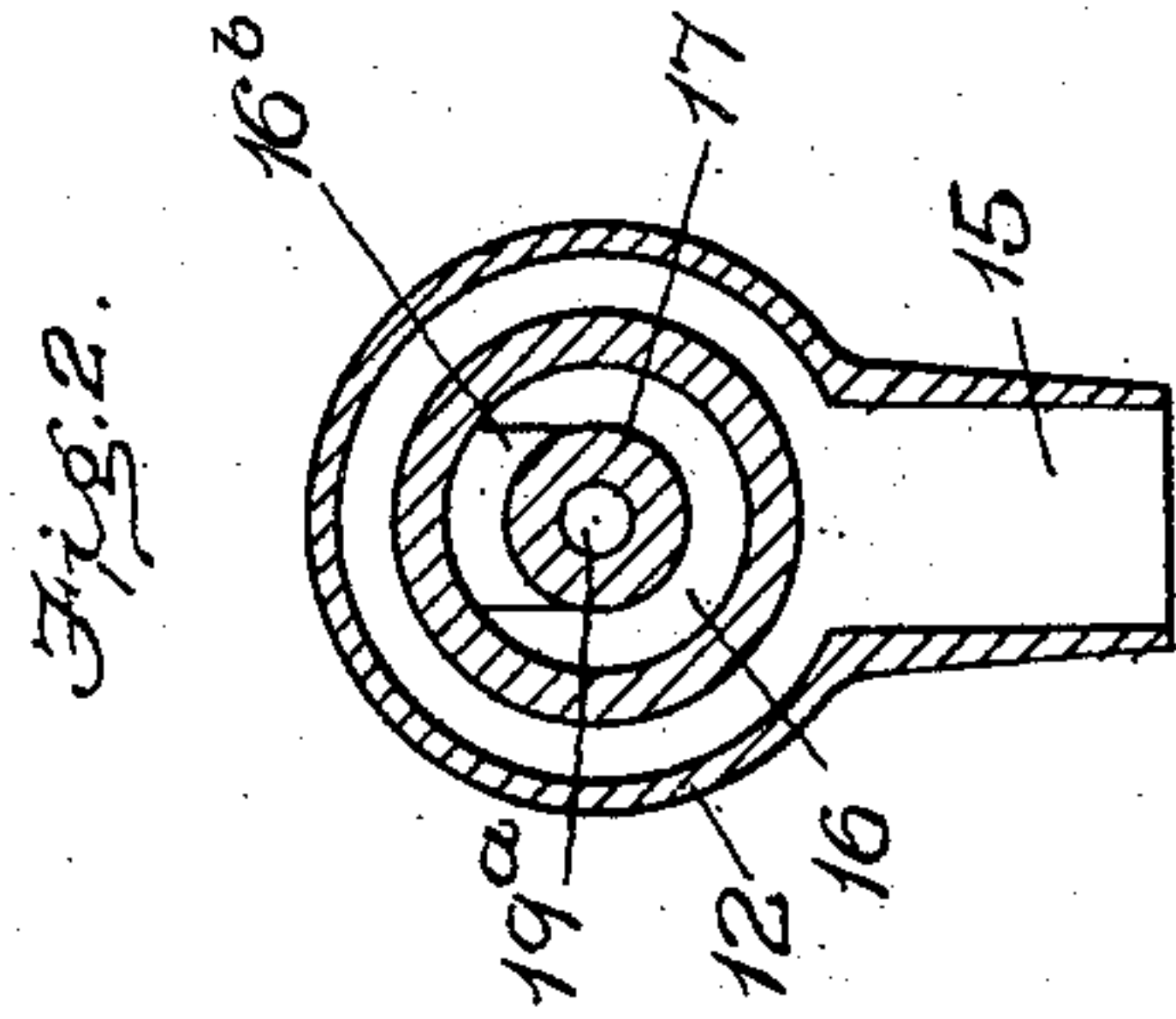
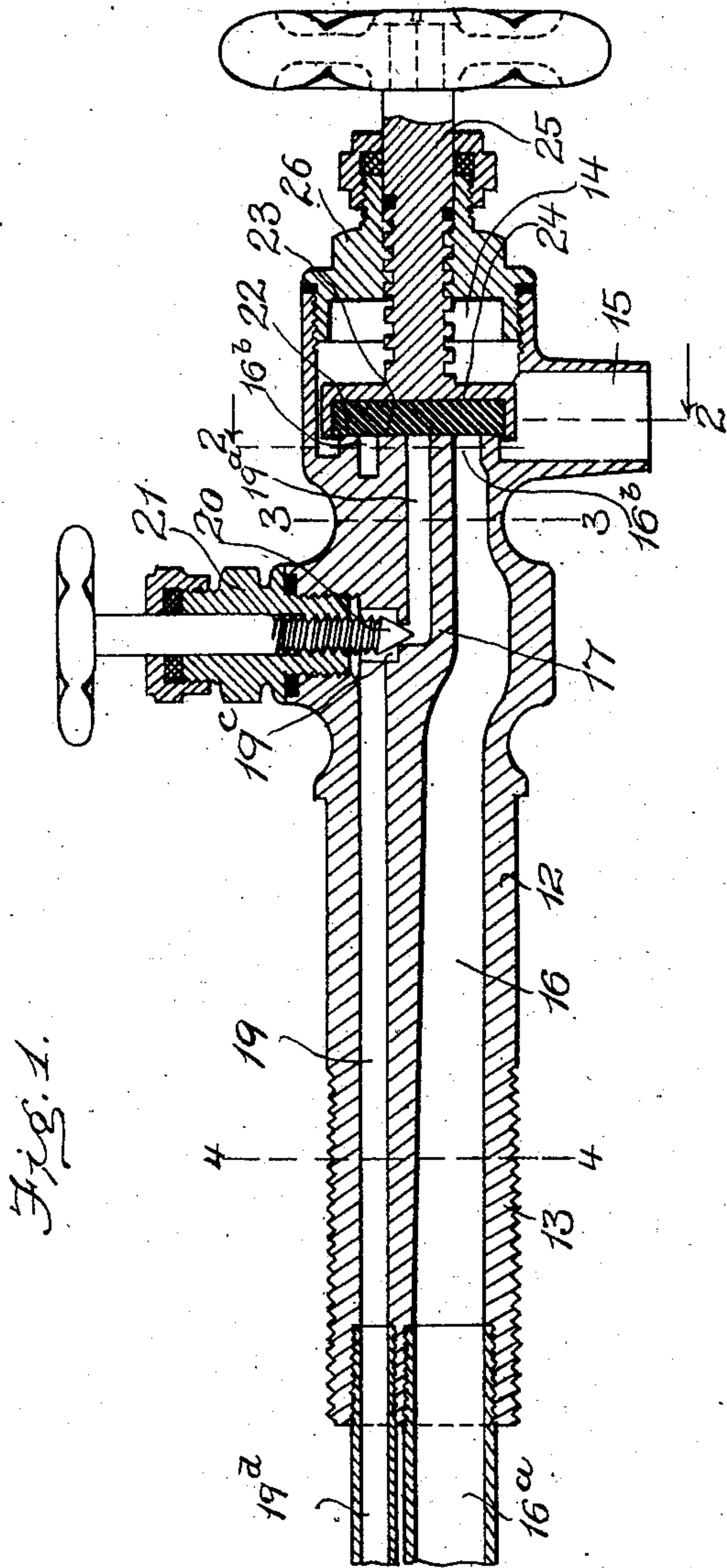


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FAUCET.  
APPLICATION FILED MAR. 18, 1910.

973,914.

Patented Oct. 25, 1910.



Witnesses:  
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# UNITED STATES PATENT OFFICE.

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## FAUCET.

973,914.

Specification of Letters Patent.

Patented Oct. 25, 1910.

Application filed March 18, 1910. Serial No. 550,169.

*To all whom it may concern:*

Be it known that I, ROBERT L. CAFFERY, of Boston, in the county of Suffolk and State of Massachusetts, have invented certain new and useful Improvements in Faucets, of which the following is a specification.

This invention relates to faucets used for drawing two kinds of liquid and mixing the same into one stream which is delivered by the faucet, the faucet embodying the invention being intended chiefly for dispensing a mixture of still or flat liquid and a liquid charged with gas and under pressure.

The invention has for its object the provision of a simple and efficient faucet of the character above referred to, adapted to cause a thorough mixture of the two kinds of liquid and to regulate the quantity of charged liquid.

The invention consists in the improvement which I will now proceed to describe and claim.

Of the accompanying drawings forming part of this specification, Figure 1 represents a longitudinal section of a faucet embodying my invention. Fig. 2 represents a section on line 2—2 of Fig. 1. Fig. 3 represents a section on line 3—3 of Fig. 1. Fig. 4 represents a section on line 4—4 of Fig. 1.

The same reference characters indicate the same parts in all of the figures.

My improved faucet comprises an elongated body 12, the inner end portion of which is adapted to be secured to a suitable support such as the casing of a soda water fountain or other container for the different liquids to be mixed and dispensed by the faucet. As here shown the inner end portion of the body 12 is provided with a screw thread 13. The outer end portion of the body 12 is provided with a mixing chamber 14 from which extends laterally a discharge nozzle 15 for the liquid mixture. 16 represents a longitudinal passage which extends from the inner end of the body 12 to the mixing chamber 14. The passage 16 is adapted to be connected with a reservoir containing a still or flat liquid. I have here

shown a flexible tube 16<sup>a</sup> which is suitably secured to the inner end of the body 12 and is adapted to be connected with said reservoir, said tube constituting an extension of the passage 16. The body 12 is provided internally with a longitudinal rib 17 which forms one side of the passage 16, the latter being crescent shaped in cross section as shown in Figs. 2, 3, and 4. Said rib extends to the mixing chamber and in its outer end is formed a segmental recess 16<sup>b</sup> which connects the wings of the outer portion of the crescent shaped passage 16 a continuous annular delivering end or outlet being formed by the said recess and the corresponding portion of the passage 16, as shown in Fig. 2. Said annular recess or outlet enables the stream of liquid passing through the passage 16 to enter the mixing chamber in an annular form, said stream surrounding a stream of charged liquid supplied to the mixing chamber as hereinafter described.

In the rib 17 is formed another longitudinal passage of considerably smaller diameter than the passage 16, and adapted to conduct a liquid charged with gas, or otherwise under pressure. The said charged liquid passage as here shown includes an inner portion 19 which extends substantially parallel with the inner portion of the passage 16 and an outer portion 19<sup>a</sup> which is offset from the portion 19 and extends to the mixing chamber, the outlet of the charged liquid passage being surrounded by the annular outlet 16<sup>b</sup> of the still liquid passage. The charged liquid passage also includes a regulating valve chamber 19<sup>c</sup> formed in the rib 17, into one side of which the portion 19 of the charged liquid passage opens, the portion 19<sup>a</sup> of said passage opening into the bottom of the said chamber. The intersection of the wall of the passage 19<sup>a</sup> with the bottom of the chamber 19<sup>c</sup> forms a seat for a regulating valve 20. Said valve is preferably a screw-threaded rod engaged with a nut 21 affixed to the body 12 and having a tapering inner end which constitutes the valve and is adapted to close upon the said valve seat as shown in Fig. 1, thus entirely shutting off the flow of charged liquid. The



valve 20 may be opened to any desired extent to admit any desired flow of charged liquid and regulate the quantity of foam on the mixture delivered by the faucet.

22 and 23 represent annular concentric valve seats, the seat 22 surrounding the outlet of the still liquid passage 16, while the seat 23 surrounds the outlet of the charged liquid passage 19. Said seats are preferably in the same plane and are adapted to be simultaneously closed and opened by a compression valve 24 having a screw-threaded stem 25 which is engaged with an internally threaded nut 26 affixed to the faucet body. When the valve 24 is closed upon the seats 22 and 23 both the liquid passages are closed simultaneously, and when the valve is separated from said seats the said passages are simultaneously opened.

It will be seen from the foregoing that provision is made for thoroughly mixing two kinds of liquid in the body of the faucet, for discharging the same, and for adjusting and varying the relative proportions of the two liquids.

The charged liquid passage 19 is here shown as provided with a flexible tubular extension 19<sup>a</sup> adapted to be connected with the source of said charged liquid or liquid under pressure.

The rib 17 gradually tapers or decreases in thickness from the portion containing the valve chamber 19<sup>c</sup> to the inner end of the body so that the passage 16 is considerably wider at the inner than at the outer end portion of the body as will be seen by comparing Fig. 4 with Fig. 3, the form of the passage 16 at the inner end of the body being such that the extension 16<sup>a</sup> may be inserted in the inner end portion of said passage, a liquid tight joint being formed around said extension by inserting a suitable filling between the periphery of the said extension and the portions of the crescent shaped passage 16 outside of the extension. The body with its internal rib 17 may be readily cast in a single piece, the passage 16 being formed by the casting operation, so that the only additional operations required are the drilling of the body to form the portions 19 and 19<sup>a</sup> of the charged liquid passage, and the valve chamber 19<sup>c</sup> and the entrance thereto, and the formation of the segmental recess 16<sup>b</sup>. The number of parts and time and labor required in making the faucet are therefore reduced to the minimum, and a solid and durable construction is provided, including a rigid seat for the regulating valve.

I claim:—

1. A faucet comprising an elongated body having a mixing chamber at its outer end portion, one side of said chamber having

two annular concentric valve seats separated by an annular cavity, two longitudinal liquid passages of different diameters, extending side by side from the inner end of the body to said chamber, the larger of said passages terminating in an annular cavity which forms the outlet of said passage, while the smaller passage has its outlet within the inner valve seat, whereby a stream of liquid flowing through the larger passage is caused to surround and become intimately mixed with a stream of liquid flowing through the smaller passage, and a valve in the mixing chamber adapted to close simultaneously on said seats.

2. A faucet comprising an elongated body having a mixing chamber at its outer end portion, a longitudinal passage having its outlet at one side of the mixing chamber, a longitudinal passage smaller than the first-mentioned longitudinal passage having its outlet in the same side of the mixing chamber, the smaller passage being offset at a point between its ends and provided with an enlargement at its offset portion constituting a regulating valve chamber, one side of which has a valve seat, a regulating valve adapted to coöperate with said seat in adjusting and controlling said smaller passage, and a valve in the mixing chamber adapted to simultaneously close and open the outlets of said passages.

3. A faucet comprising an elongated body having a mixing chamber at its outer end portion, a longitudinal passage for flat liquid communicating with said chamber, an internal rib integral with said body and forming one side of said passage, and a smaller charged liquid passage formed in said rib and communicating with the mixing chamber, one side of the rib and adjacent portions of the body constituting valve seats surrounding the outlet ends of the two passages, a valve in the mixing chamber adapted to simultaneously close and open said passages, and means for controlling and regulating the flow of the liquid through the smaller passage.

4. A faucet comprising an elongated body having a mixing chamber at its outer end portion, a longitudinal passage for flat liquid communicating with said chamber, an internal rib integral with said body and forming one side of said passage, and a smaller charged liquid passage formed in said rib and communicating with the mixing chamber, said smaller passage being composed of two portions, one offset from the other, and an enlargement constituting a regulating valve seat between said portions.

5. A faucet comprising an elongated body having a mixing chamber at its outer end portion, a longitudinal passage for flat

liquid, an internal rib forming one side of  
said passage, a portion of the outer end of  
the rib being cut away to provide an an-  
nular outlet for said passage to the mixing  
5 chamber, and a smaller charged liquid pas-  
sage formed in said rib and having its out-  
let surrounded by said annular outlet, said  
smaller passage being composed of two por-  
tions, one offset from the other, and an en-

largement constituting a regulating valve 10  
seat between said portions.

In testimony whereof I have affixed my  
signature, in presence of two witnesses.

ROBERT L. CAFFERY.

Witnesses:

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P. W. PEZZETTI.