

the cross-section of the liquid-abducting pipes, and

Fig. 3 illustrates, by means of a detail view, a fine adjustment for the cut-off device regulating the rate of flow.

In the apparatus illustrated it is assumed that it is a question of mixing two liquids, contained respectively in the vessels 1 and 2. These vessels are constructed as Mariotte jars, and are as such completely closed and provided with a dip-pipe 3 communicating with the outer air or with a gas-reservoir. The discharge of the liquid takes place through the pipes 4, which in this case project into the interior of the containing vessels and terminate above the lower orifice of the dip-pipe 3. The dip-pipe 3 is introduced through a packing-box 5 and a threaded cap nut 6, and can be adjusted in its effective position in regard to the pipe 4. The introduction of fresh liquid takes place through the pipe 7. In order to enable fresh liquid to be introduced at any moment, there is arranged at the highest point of each liquid-containing vessel an automatic stop valve 8 opening outwards, enabling the air to escape through pipe 7 when fresh liquid is introduced. A continually open overflow-pipe 9 is provided with a liquid seal 10.

In order to prevent liquid from entering the interior of dip-pipe 3 when liquid is being filled into the liquid-container, there is arranged on the lower end of said pipe, the end being made to widen out for the purpose, a floating valve 11, which shuts off entrance into the interior of the dip-pipe, without however hindering the passing of gas in the opposite direction. In order to effect as wide as possible a distribution of the quantity of air or gas which in accordance with the Mariotte principle flows in when the pressure is being equalized, there is arranged at the lower orifice of the dip-pipe a distributing-cone 12, on which the air- or gas-bubbles bubble up. The distribution of these air- or gas-bubbles can be increased by a catch-ring 13, the bottom of which is provided with fine perforations 14.

In the let off pipes 4 are arranged adjustable cut-off devices 15, which may be set to have any effective cross section desired. The cutting-off members are appropriately turned by means of a lever-handle as indicated in Fig. 1, and may further for purposes of fine adjustment be fitted with a worm 16 which engages in a worm-wheel 17 of the cutting-off member, as in Fig. 3. The degree to which a change is effected in the cross-section within the cut-off device 15 may be seen from the scale 18. This scale is appropriately standardized in agreement with the percentages of the mixtures that can be selected. In order to eliminate all possibility of a suction effect taking place in the discharge pipe

4^a and the common pipe 20 liable to affect the rate of flow of the component ingredients, the interior of each cut-off device 15 communicates by means of a pipe 19, with the outer air, as is shown in Fig. 2. In order to facilitate the mixing of the liquids, measured-off according to their rates of flow by adjustment of taps 15, spiral passage-walls 21 can be arranged in the pipes 4^a, and baffle-plates 22 in the common pipe 20 (cf. Fig. 2). The simultaneous opening of the discharge of both component ingredients is effected, for example, by opening a three-branch tap 23, indicated in Figs. 1 and 2 in the cut-off position.

The height of liquid which determines the flow out pressure of the measured liquid is designated h . By changing the position of the lower end of the dip-pipe 3, this pressure can be varied to suit different sorts of liquids or for other purposes.

If it is desired to introduce simultaneously fresh liquid into containers 1 and 2, without interrupting the continuous withdrawal of the liquid mixture, the invention provides a cut-off device 15^a fitted in the introducing pipe 7 of each container vessel, said cut-off device, however, not being opened so wide as the discharge-device belonging thereto, in order to allow of the quantity flowing in remaining just a little behind the quantity discharged, and thus to prevent the effective liquid h from being detrimentally affected by the inflow. These two cut-off devices can be positively coupled with each other by means of a connecting-rod arrangement 24, so that also in the event of an intermittent withdrawal of liquid mixture there ever flows in anew a quantity of fresh liquid maintained at a not quite equal level. By means of this arrangement in accordance with my invention the working can for instance be automatically set to one hundred times the contents of a container, before the surface of the liquid sinks to the point of the column of liquid h affecting the flow-pressure. If that point is indicated by a signal, the operation need only be interrupted once at that moment for the purpose of refilling completely the containers 1 and 2 concerned, in order to ensure once more an automatic working for the next 10000 or 50000 liters flowing through.

What I claim as my invention and desire to secure by Letters Patent of the United States is:—

1. A device for mixing liquids in predetermined proportions, comprising, in combination, a container for each component ingredient of the mixture to be produced, an abducting conduit on each container, a collecting conduit for all of said abducting conduits, in each abducting conduit a device for altering the cross section of said conduit in such a manner that the flowing speeds of the