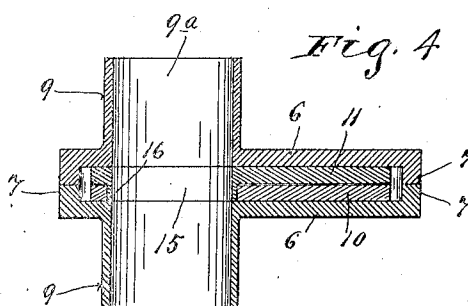
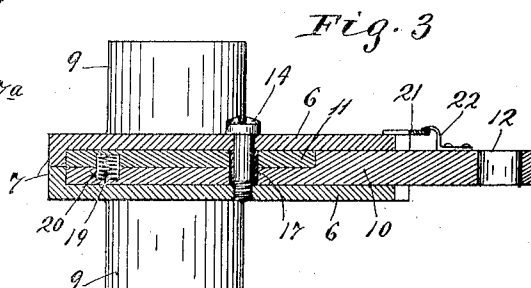
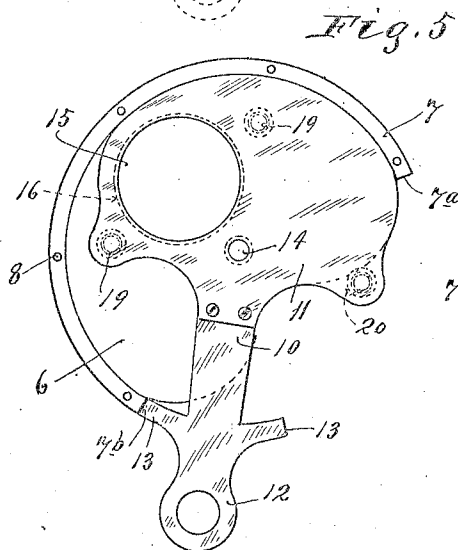
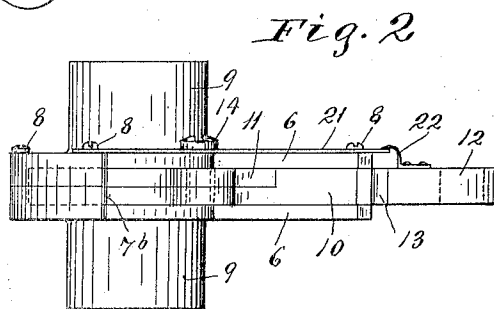
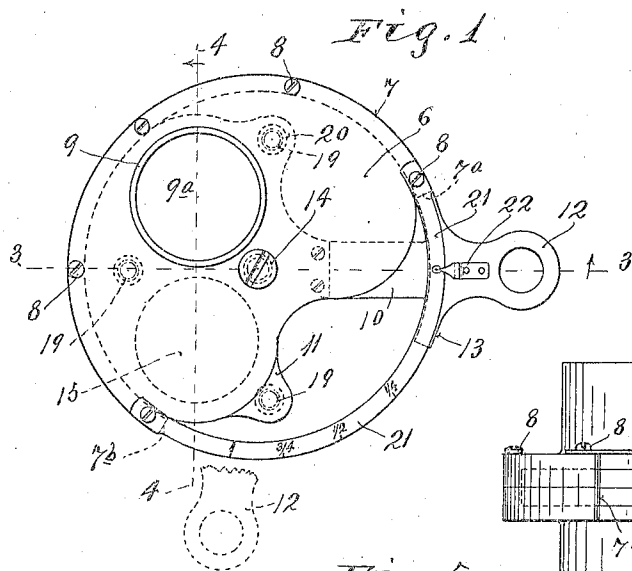


W. A. SHIMP.
VALVE.
APPLICATION FILED MAY 17, 1918.

1,338,705.

Patented May 4, 1920.



Witnesses
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VALVE.

1,338,705.

Specification of Letters Patent.

Patented May 4, 1920.

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To all whom it may concern:

Be it known that I, WILLIAM A. SHIMP, a citizen of the United States, residing at Minneapolis, in the county of Hennepin and State of Minnesota, have invented certain new and useful Improvements in Valves; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention has for its object to provide an improved valve of the so-called gate valve type; and to such ends, generally stated, the invention consists of the novel devices and combinations of devices hereinafter described and defined in the claims.

The invention is illustrated in the accompanying drawings wherein like characters indicate like parts throughout the several views. Referring to the drawings,

Figure 1 is a plan view of the improved valve mechanism;

Fig. 2 is a side elevation of the same;

Fig. 3 is a section on the line 3—3 of Fig. 1;

Fig. 4 is a section on the line 4—4 of Fig. 1; and

Fig. 5 is a plan view of the valve mechanism with the top plate of the casing removed and showing the valve in its open position.

The valve casing is made up of a pair of vertically or laterally spaced plates 6 which have segmental marginal spacing flanges 7 through which screws 8, or the like, are passed and rigidly connected to said two plates. The inner surfaces of the said plates 6 are ground or turned, preferably, flat and are parallel to each other and there is a marginal opening between the points marked 7^a and 7^b on Fig. 5, this opening being formed by termination of the spacing flanges 7 at the points noted. The upper and lower plates 6 are formed with axially alined sleeves 9 that afford alined passages between the two plates.

Working between the two plates 6 is a flat faced valve of the gate valve type made up of a main valve plate 10 and a supplemental valve plate 11. The main plate 10 has a projecting arm 12 that extends outward from the casing plates 6, working freely between the terminal points 7^a and 7^b of the flanges 7 and, as shown, is provided with projecting stop lugs 13 for engagement

with the ends of the said flanges. The supplemental valve plate 11 is set into the main plate 10 flush with the same and the two plates are pivotally connected by a screw 14 to the casing plates 6. The axis of the stud 14 is at the axis of the spacing flanges 7 and the passage 9^a through the sleeves 9 is, of course, eccentric to the said pivot and is located between the said pivot and the flanges 7. Also it will be noted (see Fig. 4) that the supplemental plate 11 is formed with a port 15 and a surrounding alining sleeve 16, which latter extends through the main valve plate 10. A small bushing 17 is extended through the two plates 10 and 11 and immediately surrounds the stud 14, and said stud (see Fig. 3) is extended through the casing plates 6, and has a head that engages the upper member and has screw-threaded engagement with the lower member, so that it also assists in holding the casing plates together. By means of the bushing 17, and sleeve flange 16, the two valve plates are held for common oscillatory movements, but are free for slight lateral or intermediate movements. A plurality of short coiled springs 19 are set into countersunk seats 20 of the two plates 10 and 11 and tend to separate the said plates and serve to keep the upper surface of the upper plate 11 tightly engaged with the lower surface of the upper plate 6 and the lower surface of the plate 10 tightly engaged with the upper surface of the lower plate 6. Thus, fluid-tight joints are afforded between the flat smooth surfaces of the case plates 6 and valve plates 10 and 11. This valve will, therefore, always maintain tight joints. The wear will be very slight, but such wear as may take place will be taken up or compensated for by the springs 19.

It is desirable for the operator of the valve at all times to know just to what extent the valve port is opened, and hence, I provide a relatively fixed graduated segmental indicator scale or bar 21 which is secured at its ends to one of the casing plates 6, being, as shown, secured to the upper member thereof; and for coöperation with the said graduated scale, the projecting arm 12 of the valve proper is provided with a pointed finger 22 that works over the said graduated scale.

Fig. 1 shows the valve moved into a position to close the fluid passage 9^a of the valve

casing, and Fig. 5 shows the valve set in position to open the said fluid passage. The valve plates 10 and 11, preferably have segmental marginal portions that directly engage with the interior of the segmental spacing flange 7, but this is not absolutely essential. The springs 19 should be so distributed around the pivot 14 as to evenly press the valve plates 10 and 11 against the cooperating surface of the base plate.

A valve of this character may be used in a great many different places. It is especially desirable where the flow of liquid, such as milk or cream, for example, is to be handled, but more generally stated, it is serviceable wherever the flow of liquid is to be quickly started and quickly cut off by simple oscillation of the valve, and where, of course, it is desirable that the valve be kept always tight without requiring grinding or other repair.

Moreover, the valve is especially adapted for use in handling liquids that vary in temperature. For example, in handling milk and cream in creameries, where it is pasteurized, the temperature will vary a great deal and sometimes it will be desirable to run the milk and cream through cold. This valve will automatically compensate for expansion and contraction due to the varying temperature of the above or any other change in conditions.

What I claim is:

1. The combination with a valve casing having flat parallel surfaces and alined fluid passages, of a two-part valve engaging the parallel surfaces of said casing and pivoted thereto at a point eccentric to the fluid

passages thereof, one of the members of said valve having a port with a sleeve-like extension through the other valve member, said port being movable into and out of alinement with the fluid passages of said casing, and springs interposed between the valve members at points circumferentially spaced around the port thereof, said springs yieldingly pressing the valve members into engagement with the surfaces of said casing.

2. A valve mechanism comprising a pair of case plates separated by a segmental marginal flange and having alined fluid passages located eccentric to the axis of the inner surface of said segmental flange, a pair of valve plates pivoted to said case plates at the axis of said flange thereof and provided with a port movable into and out of alinement with the fluid passages of said case plates, one of said valve plates having a radially projecting arm working in the gap between the extremities of said segmental spacing flange, yielding means tending to separate said valve plates and pressing the same into fluid tight engagement with the cooperating surfaces of said case plates, a segmental scale attached to one of the case plates and spanning the space between the extremities of said spacing flange, and cooperating scale pointer on the radially projecting arms of said valve.

In testimony whereof I affix my signature in presence of two witnesses.

WILLIAM A. SHIMP.

Witnesses:

CLARA DEMAREST,
F. D. MERCHANT.