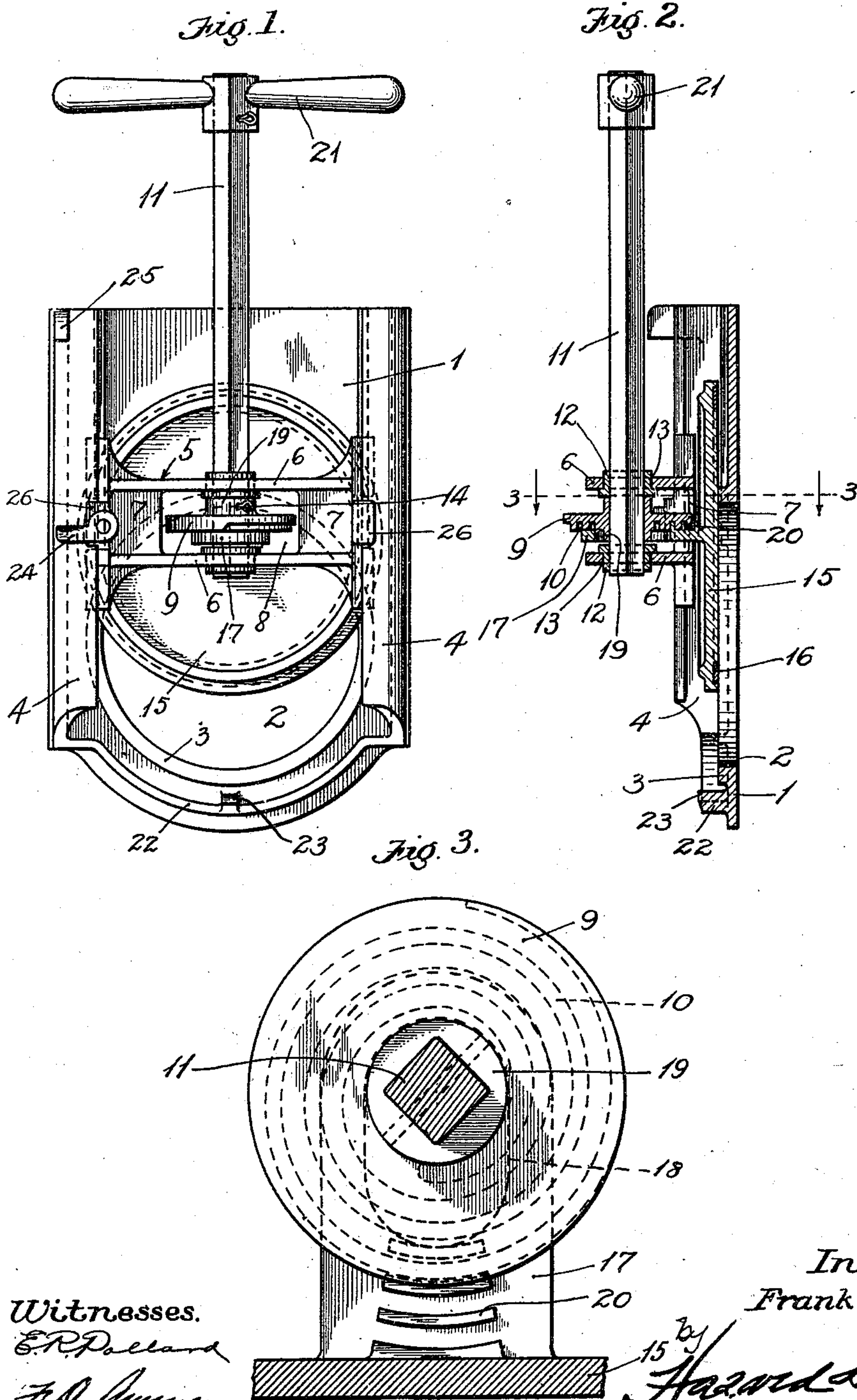


F. P. SNOW.
VALVE OR GATE.
APPLICATION FILED NOV. 27, 1909.

966,713.

Patented Aug. 9, 1910.



Witnesses.
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UNITED STATES PATENT OFFICE.

FRANK P. SNOW, OF COVINA, CALIFORNIA, ASSIGNOR TO KELLAR-THOMASON MANUFACTURING COMPANY, OF COVINA, CALIFORNIA, A CORPORATION OF CALIFORNIA.

VALVE OR GATE.

966,713.

Specification of Letters Patent.

Patented Aug. 9, 1910.

Application filed November 27, 1909. Serial No. 530,134.

To all whom it may concern:

Be it known that I, FRANK P. SNOW, a citizen of the United States, residing at Covina, in the county of Los Angeles and State of California, have invented new and useful Improvements in Valves or Gates, of which the following is a specification.

This invention relates to valves or gates, and the object of the invention is to produce a device of this class which shall be of simple construction and which is constructed in such a way that the valve gate or disk may be slid transversely of the valve opening and then clamped rigidly on the valve seat by a simple movement of the controlling member.

The invention consists in the construction and combination of parts to be more fully described hereinafter and particularly set forth in the claims.

In the annexed drawing which fully illustrates my invention, Figure 1 is a front elevation of the valve or gate. Fig. 2 is a longitudinal, vertical section through the device. Fig. 3 is a horizontal section through the middle portion of the device and particularly illustrating the means for locking the valve disk or gate upon its seat, a portion of the mechanism being broken away. This section is taken on the line 3—3 of Fig. 2.

Referring more particularly to the parts, 1 represents a valve plate which is formed below with a valve opening 2, around the edge of which a raised valve seat 3 is formed. The vertical side edges of the plate 1 are formed with guide flanges 4 and these guide flanges are curled or turned inwardly so that they project toward the longitudinal vertical axis of the valve plate. On these flanges 4 a cross head 5 is guided to slide up and down, said cross head presenting a pair of substantially flat bars 6 disposed apart and connected by vertical webs 7. Between the webs 7 an opening 8 is formed and opposite this opening a locking device 9 is rotatably mounted, said device being in the form of a cam or wheel having an involute or spiral groove 10 formed in its under face. This wheel is mounted on an angular or square stem 11 which passes through the bars 6 of the cross head, being provided with sleeves or bushings 12 at the bars 6 which rotate freely in openings 13, as will be readily understood. The wheel 9 is secured to

the stem by a suitable split pin 14 as shown in Fig. 1.

I provide a valve disk or gate 15 which is of substantially circular form as shown and provided on its inner face with an annular groove carrying a packing ring 16 adapted to receive the seat 3 of the valve plate. On its outer face the disk 15 is provided with an outwardly projecting fin 17 and this fin is formed with an oblong or oval opening 18 which receives the nave or hub 19 of the wheel 9, and the face of this fin 17 lies adjacent to the face of the wheel as indicated. This fin is provided on its upper face with a plurality of curved ribs or tongues 20 which are disposed upon arcs having a common center on the axis of the stem 11. These tongues 20 engage the involute groove 10 so that if the stem 11 is rotated by means of its handle 21 the disk or gate will approach or recede from the valve seat.

The lower end of the valve plate is formed with a curved guard flange 22 which is formed with a centrally disposed lug or stop 23 which is engaged by the lower edge of the disk when the valve is being closed, so as to arrest the disk in a central position with respect to the valve opening 2 and the seat 3.

On one of its ends the cross head 5 is provided with a pivoted pawl 24 which is normally disposed in a horizontal position as indicated in Fig. 1. Near its upper end the corresponding guide flange 14 is provided with an outwardly projecting dog 25 which is in the path of this pawl. When the valve disk is being lowered into the valve plate at the upper end this pawl 24 engages the dog 25 and is thrown out of the way thereby, but after the pawl passes the dog it falls back to its normal horizontal position and will prevent the cross head and the disk from being accidentally withdrawn from the valve plate.

It should be understood that the wheel 9 constitutes a cam, presenting as it does, a cam face or groove engaged by the tongues 20. In an intermediate position of this cam the cross head and the disk 15 are free to slide in the guide plate 1. By rotating the stem 11 in the proper direction, the cam will force the disk 15 laterally against the valve seat, at the same time forcing the cross head securely against the inner sides of the flanges 4. In this way the valve disk can be

clamped in a closed position or in a partially closed position as indicated in Figs. 1 and 2.

In connection with the cross head 5 attention is called to the fact that it is formed so as to bear on the inner sides of the flanges. And it also bears on the outer sides of the flanges by means of projecting shoes 26 as indicated in Fig. 1.

10 Having described my invention, what I claim as new and desire to secure by Letters Patent is:—

1. A valve plate having an opening therein, a cross head, means for guiding said cross head transversely of said plate, a cam 15 rotatably mounted on said cross head and having a cam groove in the face thereof, said groove extending completely around the axis of rotation of said cam, a disk having means for engaging said groove and 20 affording means for forcing said disk toward or away from said opening, and means for rotating said cam.

2. A valve plate having an opening therein and having guide flanges at the side 25 edges thereof, a cross head engaging said flanges and guided thereupon, a cam rotatably mounted on said cross head and hav-

ing a cam groove in the face thereof, a disk having a laterally projecting fin, said fin 30 having a tongue engaging said groove and a stem for raising and lowering said cross head and affording means for rotating said cam.

3. A valve plate adapted to guide a cross 35 head and having an opening therein, a cross head sliding on said plate, a stem rotatably mounted in said cross head and adapted to raise and lower the same, a cam carried by said stem having a cam groove in the face 40 thereof, a disk adapted to close said opening, having a laterally projecting fin, said fin having an opening through which said stem passes, said fin further having tongues thereupon engaging the groove of said cam 45 and affording means for displacing said disk laterally to clamp said cross head and said disk in a fixed position.

In witness that I claim the foregoing I have hereunto subscribed my name this 20th 50 day of November, 1909.

FRANK P. SNOW.

Witnesses:

F. D. AMMEN,
GERTRUDE L. FAHEY.