(No Model.)

H. LECHER & C. KIRCHHAHN.

TANK SUPPLY VALVE.

No. 602,512. Patented Apr. 19, 1898.

Fig. 1.

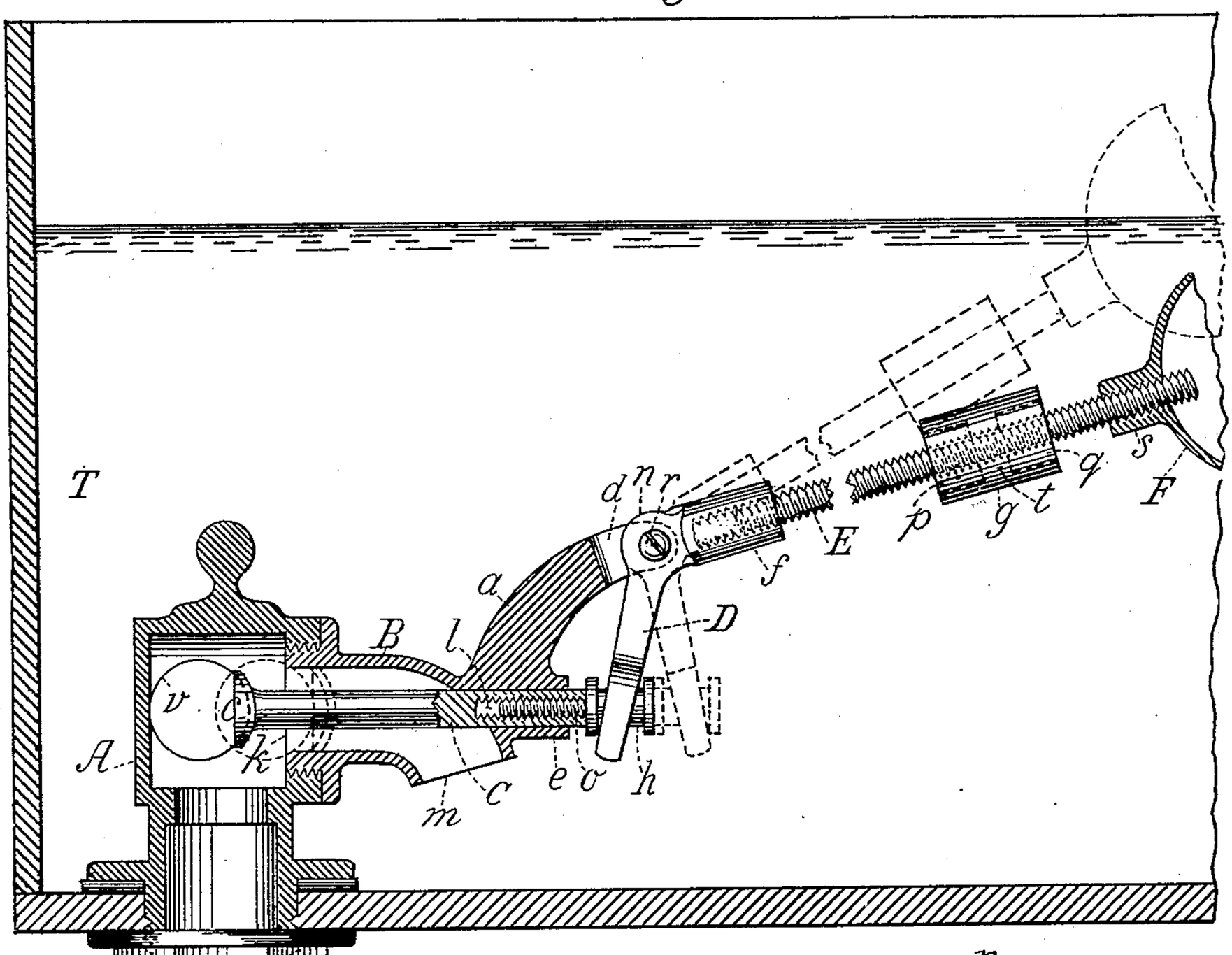
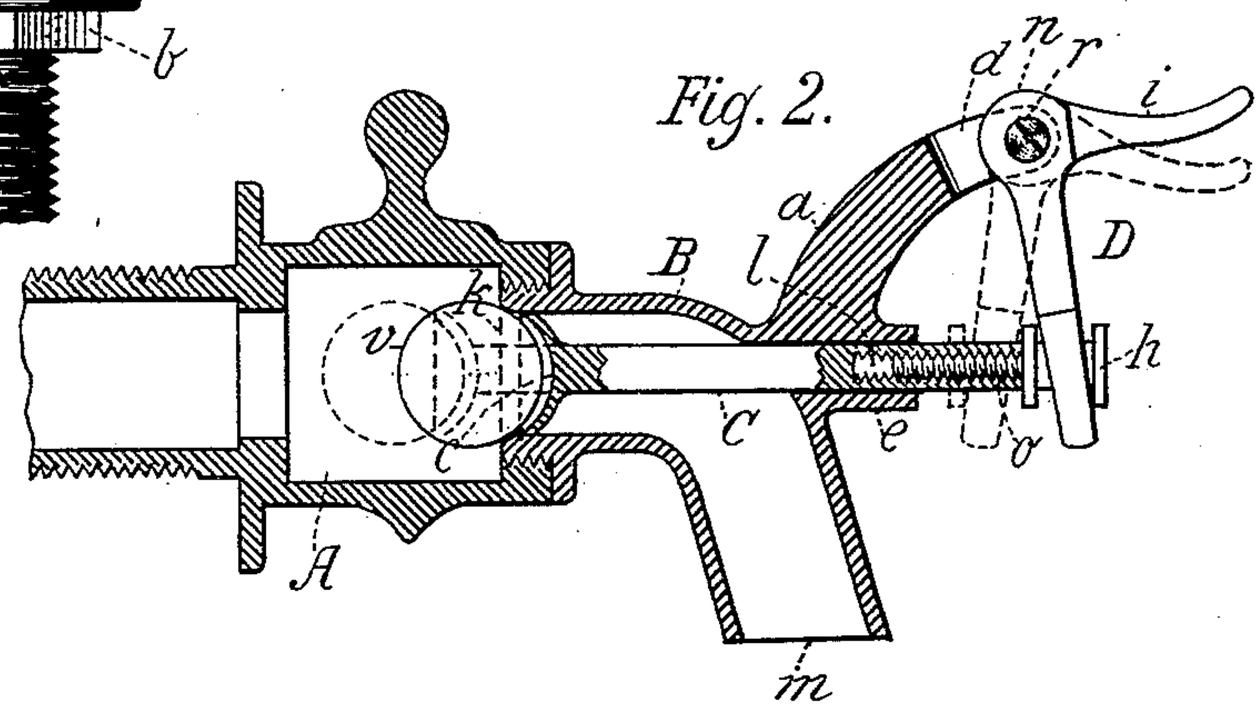


Fig. 2.



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UNITED STATES PATENT OFFICE.

HERMANN LECHER AND CHARLES KIRCHHAHN, OF MILWAUKEE, WISCONSIN.

TANK SUPPLY-VALVE.

SPECIFICATION forming part of Letters Patent No. 602,512, dated April 19, 1898.

Application filed May 12, 1897. Serial No. 636,255. (No model.)

To all whom it may concern:

Be it known that we, HERMANN LECHER and CHARLES KIRCHHAHN, citizens of the United States, residing at Milwaukee, in the county of Milwaukee and State of Wisconsin, have invented a new and useful Tank Supply-Valve, of which the following is a specification.

Our invention relates to an improved inlet or supply valve for water tanks or reservoirs automatically operated by a lever arrangement in combination with a float and valve-rod for the purpose of regulating the inflow of the fluid and causing the same to stop automatically when a desired level in the tank is reached. We attain these objects substantially by a combination of mechanical parts constructed and connected as represented in the accompanying drawings, which, inclusive of the letters of reference thereon, form part of this specification.

Figure 1 of the drawings shows the article in sectional front view in connection with a water-tank, while in Fig. 2 the same article is represented to be used as a faucet.

Referring to Fig. 1 of the drawings, T shows the inside of a water-tank, through the bottom of which in properly-selected location the body portion of the valve-casing A is located and rigidly secured in position to the tank's bottom by a fitting screw-nut *b*, surmounting the downward-projecting threaded portion of the supply-pipe G of the said valve-casing. The same incloses a spherical valve *v* between an inlet and an outlet port, into which latter one a flanged discharge-pipe B, with a straight neck and curved end portion *m*, is screwed in position with the mouth of the same pointing downward, facing the bottom of the tank. The said curved end portion of the discharge-pipe is provided with a sleeve *e*, projecting in a horizontal direction, the axis of the longitudinal bore of the sleeve being in line with the center of the neck and the inlet-opening *k* of the discharge-pipe and having a diameter suitable to afford a passage-way for a fitting solid rod C. The aforesaid sleeve *e* is made integral with and forms the base of an upright rising curved standard *a*, which standard has a slotted top end *d*, to receive the fitting and circularly-shaped disk *n*. From the periphery of said disk extends the arm D and in a diverging direction in the said plane the arm *f*, which is round in cross-section. The lower end portion of the arm D is forked to engage with the disk-head *h*, connected to the rod, while the arm *f* is provided with a threaded socket in its center and receives the rear end portion of a threaded stem E, which on its upper end connects with neck *s*, projecting from a suitably-formed hollow vessel or float F, which rises or falls with the changeable stand or level of the volume of water in the tank.

The aforementioned circularly-formed disk *n* is pivotally secured in its place by a cross-pin *r*, which passes through its center and the shanks of the slotted top end portion of the standard, permitting the said disk to rotate with the arm and cap freely from their common center.

The rod C is of suitable length, with a hollowed threaded front end portion *l* of ample extent, into which a fitting-screw *o*, projecting in line of center from a round head *h*, plays. The rear end of the said rod terminates in shape of a circular section *c*, with a spherical or concave surface in size to fit into the opening of the straight neck of the discharge-pipe to guide the rod in its reciprocating movements and support the valve *v*, when forced from its seat, of the discharge-pipe B by the movement of the rod and lodges by pressure of the water from the supply-pipe G against the concave seat or surface of the circular section, which embraces a portion of the spherical valve. The said circular section may be perforated for draining off the water accumulated in the space of the discharge-pipe between the closing-valve and the circular section of the receding rod.

The aforesaid head *h* is a cylindrical-shaped solid body with flanges at its ends and a space between them to keep the forked end portion of the arm D in secured position during the movements of the rod and permit, by means of the screw *o* of the head, a variable position of the same in horizontal direction from the front end of the said rod and from the concave surface of the circular section *c* on the rear end of the same to regulate the angle of the stem of the float and the distance of push-

ing the valve out of its seat from the inlet-port of the discharge-pipe.

The action to regulate the fluid-pressure at a certain level in the tank is very simple. In presupposition the water in the tank is being discharged through an outlet arrangement not in connection with the supply-valve. The float F naturally sinks in accordance with the diminution of the contents of the tank. In consequence thereof the arm D pushes the rod C by means of the stem E, connected with the flanged head *h* of the same, gradually backward, and the spherical valve *v* will be unseated from the inlet-opening *k* of the discharge-pipe as soon as the same comes in contact with the concave seat of the circular section *c* of the said rod, and the refilling of the tank begins simultaneously and without interruption again. The float gradually rises with the volume of the water in the tank and the hereby-caused forward motion of the rod separates the seat of the circular section from the valve and leaves the same in its former occupied position until the discharge of the water in the tank again takes place. The volume and height of the level of the water depends chiefly on the distance between the center of the float and the cross-pin *r* of the slotted head of the standard *a*, which can be regulated by screwing the threaded stem E into or out the socket of the cap *f* or the aperture of the neck *s* of the float, or both, as may be the case. If the tank is of limited dimension and a float with a short stem is to be used to reach a higher level of the water in the tank, the attached head *h* of the rod C has to be adjusted in accord with a position at a required distance from the front end of the rod, and consequently an acute-angled direction of the stem and float will be the result and the operating of the rod C the same as aforedescribed.

A cylindrical-formed weight *g* of suitable size and material is attached to the threaded stem E of the float, consisting, when taken in sectional view, of two internal chambers or hollow spaces *p q*, in diameter to fit over the cap *f* of the disk *n* and over the projecting neck *s* of the float F. Said chambers are separated in the middle of the weight by a solid partition *t*, with a threaded opening in center to fit the stem for adjusting the gravity of the float.

In Fig. 2 of the drawings a faucet is represented in sectional view, the construction of which is analogous with the same, as shown in the tank supply-valve of Fig. 1, with the difference that the rod C is manipulated by means of a handle *i*, which is an alteration in place of the cap *f*, to be worked at times when desired and can be introduced for flushing sinks, urinals, and the like in place where no water-tanks can be brought into use.

Having thus described our invention, we claim—

In a tank supply-valve the body portion of the valve-casing having a spherical valve between an inlet and outlet port, said portion combined with a discharge-pipe, provided with a sleeve, the same having an opening or passage-way in center bearing a rod C with a removably-connected head *h*, said sleeve bearing a standard with a pivotally-connected disk *n*, the same having an arm D, engaged with the said head of the rod C, and the cap *f* of the disk provided with a socket bearing a detachably-connected stem E mounted with an adjustable float F and chambered weight *g*, said stem being mediately connected with the rod C, substantially as shown, all constructed and adapted for the purpose set forth.

In testimony whereof we have set our signatures hereunto in presence of two subscribing witnesses.

HERMANN LECHER.
CHARLES KIRCHHAHN.

Witnesses:
ANNIE TSCHENTSCHER,
ANTON SCHINDLERS.