

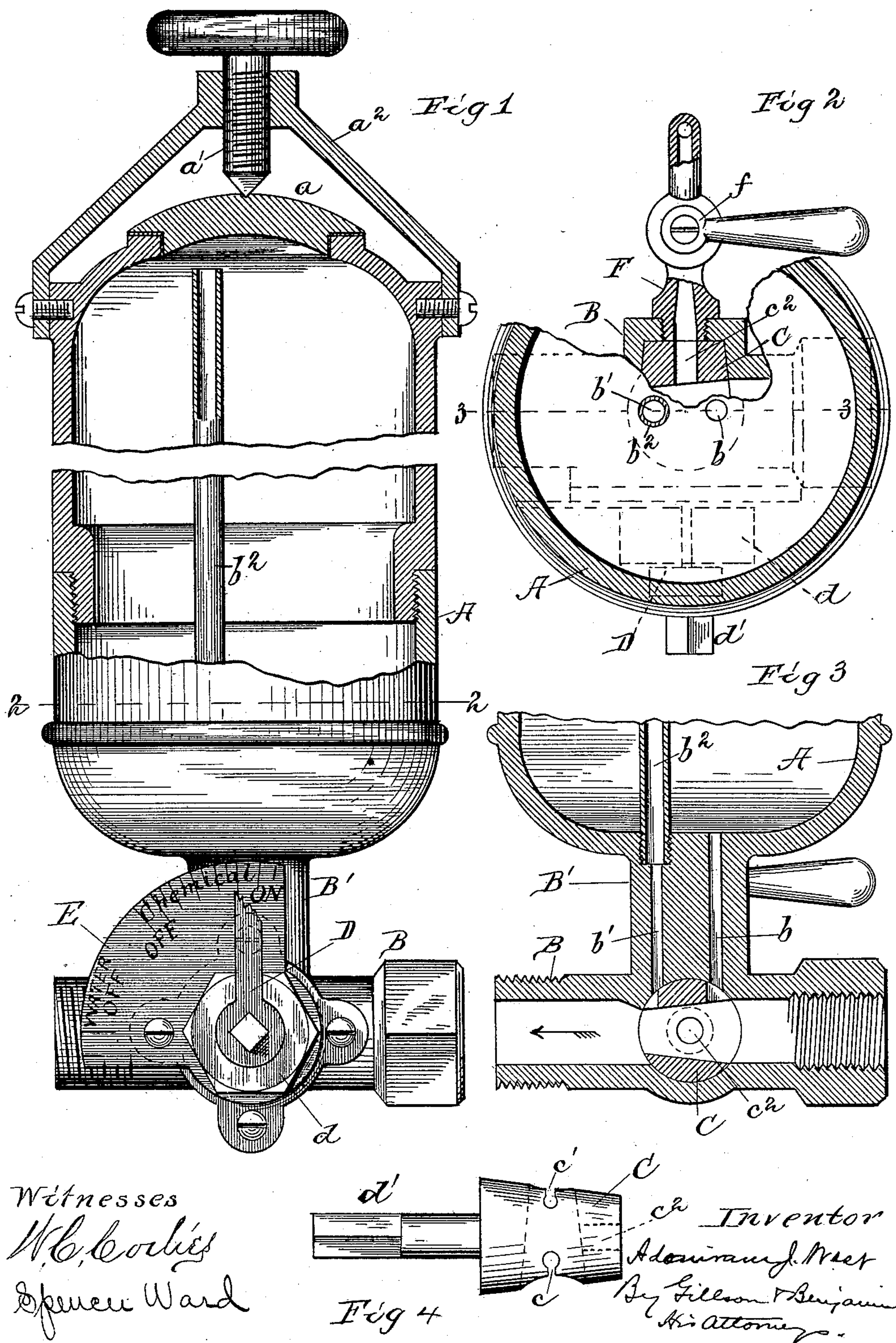
(No Model.)

A. J. WEST.

FEEDER FOR CHARGING LIQUIDS WITH CHEMICALS.

No. 452,172.

Patented May 12, 1891.



Witnesses
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Fig 4

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UNITED STATES PATENT OFFICE.

ADONIRAM J. WEST, OF CHICAGO, ILLINOIS.

FEEDER FOR CHARGING LIQUIDS WITH CHEMICALS.

SPECIFICATION forming part of Letters Patent No. 452,172, dated May 12, 1891.

Application filed November 15, 1890. Serial No. 371,552. (No model.)

To all whom it may concern:

Be it known that I, ADONIRAM J. WEST, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Feeders for Charging Liquids with Chemicals; and I do 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, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

My invention relates to feeders for charging a current of liquid, as water, with chemicals, particularly for so charging the water entering a filter; and it consists of the various parts and arrangement of parts hereinafter fully described.

In the accompanying drawings, Figure 1 shows an elevation of my device partly in section. Fig. 2 is a plan section on the line 2 2, Fig. 1. Fig. 3 is a vertical section on the line 3 3 of Fig. 2. Fig. 4 is a detail of the valve used in the device.

In the drawings, A represents a cylindrical tank, preferably made of cast-brass, and inclosed and sealed at the top by a cap *a*, held to its seat by a set-screw *a'*, carried by a swinging yoke *a''*, which is pivoted to the body of the tank, as plainly shown. The lower end of the tank A is provided with a neck B', which terminates in a transverse tube B. This neck and tube may be cast integrally with the lower end of the tank, as indicated by the drawings, or they may be made separately, if desired. Two ducts *b* and *b'* pass from the tube B, through the neck B', into the tank A, the duct *b'* terminating in a tube *b''*, which extends approximately to the top of the tank A, its upper end being open. A rotating valve C is seated transversely within the tube B, there being a transverse aperture within the valve adapted to register with the channel through this tube, so that by a quarter-turn of the valve C the passage may be entirely closed. The orifice in the valve C is tapering in form, its wider end being adapted to receive, and its narrower to discharge, the current of water. Recesses *c* and *c'* are formed in that side of the valve which is up-

permost when the valve is open, whereby communication is opened between the orifice of the valve and the ducts *b* and *b'*. The valve C is provided with a stem *d'*, which passes out through a stuffing-box *d*, and upon which is fitted a handle D. A segmental indicating-scale E is attached to the tube B in such a position that the handle D moves before it. A longitudinal orifice *c''* extends from the transverse orifice of the valve C through the inner end of the valve and communicates with a drain-pipe F, which enters the side of the tube B. This drain-pipe is provided with an ordinary stop-cock *f*.

Used in connection with a filter my device is intended to convey, through the tube B, a current of the impure water, a portion of which is deflected into the tank A, through the duct *b*, by reason of the tapering form of the orifice in the valve C. The tank A is filled with a chemical, ordinarily with lump alum, which is dissolved by the action of the water and conveyed through the tube *b''* and the duct *b'* and delivered to the main current, and is conveyed to the filter so as to charge all of the water entering the latter with the necessary amount of chemical. Should the water passing through the tank A become too strongly charged with the chemical, its flow may be retarded by partially closing the valve C, and the indicating-scale E is of value as showing at what point communication with the tank is entirely cut off by the closure of the duct *b'*.

Although I have described and shown a valve having a tapering aperture, the purposes of my invention will be accomplished if the aperture is made of uniform dimension but of less capacity than the tube, the novelty of my device consisting in the use of a valve which checks the current and also provides ingress to the chemical-tank for the retarded water and egress from it beyond the obstruction it interposes. The tank A may be drained of its liquid contents by closing the valve C, so that the wider end of its transverse orifice is upward, and opening the stop-cock *f*. The chemical is introduced into the tank A by removing the cover *a*.

I am aware that it is old to switch a portion of a stream of water through a chemical-tank by means of a series of valves.

I claim as my invention—

1. In a chemical-feeder, the combination, with a tube or pipe, of a tank for containing the chemical, a neck uniting the tank and tube and having longitudinal channels or ducts, 5 and a rotating valve seated across the tube so as to cover the channels or ducts and being provided with a tapering transverse aperture and with recesses whereby communication is established between opposite ends of the valve- 10 aperture and the ducts when the valve is open, substantially as described, and for the purpose set forth.

2. In a chemical-feeder, the combination, with a tube or pipe, of a tank for containing the 15 chemical, a neck uniting the tank and tube and having two longitudinal channels or ducts, and a rotating valve seated across the tube and being provided with a transverse aperture of less capacity than the tube and with re- 20 cesses whereby communication is established between the ducts and the tube upon oppo-

site sides of the valves, substantially as described, and for the purpose set forth.

3. In a chemical-feeder, the combination of a chemical-tank, a water pipe or tube having 25 a lateral aperture c^2 , a neck connecting the tank and tube and having two ducts or channels, a rotating valve of less capacity than and seated across the tube opposite the point of attachment with the neck, said valve hav- 30 ing a longitudinal channel passing through its inner end and communicating with the aperture c^2 , and a stop-cock for controlling said aperture, substantially as described, and for the purposes set forth. 35

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

ADONIRAM J. WEST.

Witnesses:

M. E. FERGUSON,
JNO. C. WEBER.