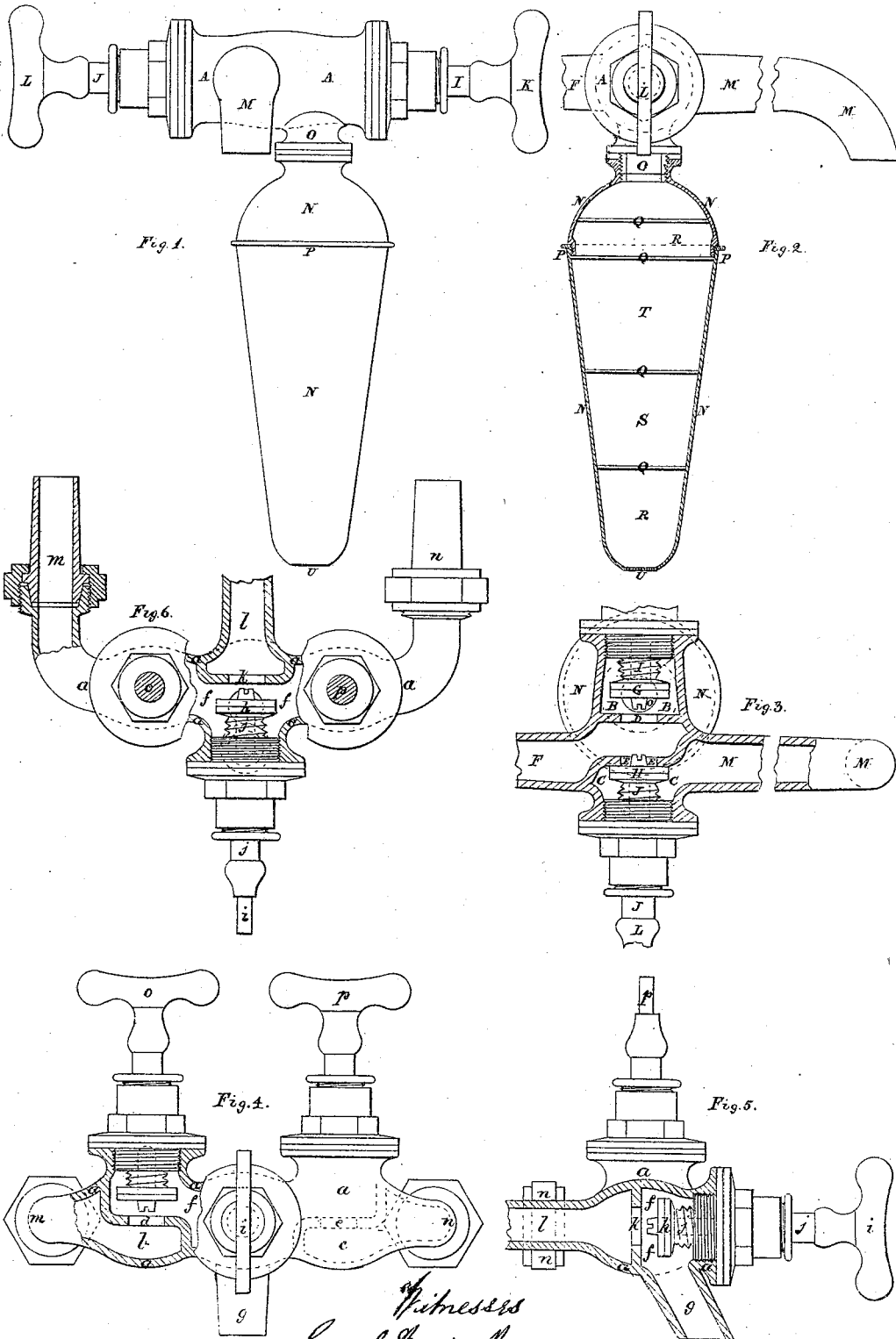


SAMUEL NORTON.
Improvement in Cocks.

No. 115,091.

Patented May 23, 1871.



Witnesses
Samuel Norton
John Moore
Samuel Norton

UNITED STATES PATENT OFFICE.

SAMUEL NORTON, OF STOCKPORT, GREAT BRITAIN.

IMPROVEMENT IN COCKS.

Specification forming part of Letters Patent No. 115,091, dated May 23, 1871.

To all whom it may concern:

Be it known that I, SAMUEL NORTON, of the firm of NORTON & Co., of Stockport, in the county of Chester, Kingdom of Great Britain and Ireland, patentees' manufacturers, have invented a Combined Hydraulic Filter and Valve-Tap; and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawing and to the letters of reference marked thereon.

The nature of my invention consists in combining a filtering-vessel and a peculiar construction of double or triple valve-tap together, in order that hot or cold water or various liquids may be drawn off in a filtered or unfiltered state direct from the same apparatus.

To enable others skilled in the art to make and use my invention I will proceed to describe its construction and operation.

On reference to the accompanying drawing, which forms a part of this specification, Fig. 1 is a front exterior view of a combined hydraulic filter and double valve-tap constructed according to this invention. Fig. 2 is a side view of Fig. 1, showing the filtering-vessel in section; and Fig. 3 is a sectional plan of so much of Figs. 1 and 2 as is necessary to explain the disposition and internal arrangement of the valves in the double valve-tap. Fig. 4 is a plan, Fig. 5 a front view, and Fig. 6 a side view (all partly in section) of another modification of valve-tap to be used in conjunction with a filtering-vessel in accordance with this invention.

Similar letters refer to similar parts throughout the several views.

In Figs. 1, 2, and 3, A is the body of the tap or cock, which is of a construction peculiar to this invention, being internally divided into two compartments, B and C, (seen in Fig. 3,) both communicating, through their respective apertures D and E, with the one common tail or supply-pipe, F, which is shown broken off short in the drawing for want of space to illustrate it in its entirety. The apertures D and E are opened and closed at pleasure by the leather-covered valves G and H, which are each actuated in the ordinary manner by their respective screwed spindles I and J, worked by the handles K and L; the valve H being illustrated on Fig. 3 as closed, while the valve

G is shown open. The compartment B is open to the spout or nozzle M, as seen in Fig. 3, and the compartment C communicates with the interior of the filtering-vessel N through the branch pipe O. The filtering-vessel N is screwed upon the branch pipe O, and is constructed of sheet or cast metal in two parts, screwed together, as illustrated at P, in order to afford ready access to the interior, and thus to enable the filtering material contained within it to be cleansed or changed as occasion requires. In this filtering-vessel layers of filtering material are placed, separated by the loose perforated diaphragms Q, the top and bottom layers consisting, by preference, of sponge, marked R, and the intermediate layers being formed of sand, S, and powdered charcoal, T, or other suitable filtering material. The filtered water is drawn off from this filtering-vessel through the perforations U formed through its lower extremity.

The method of using this combined hydraulic filter and valve-tap may be thus described: The supply-pipe F being connected to the water-supply, and the water being required to be drawn off unfiltered, all that is necessary is to turn the handle L, when the valve H will be raised off its seating, and thus allow the water to enter the compartment C through the aperture E, from whence it will escape, and flow through the spout or nozzle M. If, on the other hand, it is required to draw off the water in a filtered state, the handle K must be turned, when the valve G will open and allow the water from the common supply-pipe F to enter the compartment B through the aperture D, and thence it will pass through the branch pipe O into the filtering-vessel N; the pressure upon the water will then cause it to pass speedily through the filtering material, whereby it will be separated from all impurities, and escape in a filtered state through the perforations U formed through the lower extremity of the filtering-vessel N. The speed at which the filtered water may be drawn off will depend upon the pressure of the supply, and also upon the thickness of the layers of filtering material through which it has to pass.

In Figs. 4, 5, and 6, a is the body of the tap or cock, which is also of a construction peculiar to this invention, being internally divided into two compartments, b and c, (the lat-

ter shown dotted in Fig. 4,) communicating through their respective apertures *d* and *e* (the latter shown dotted in Fig. 4) with a common central or third apartment, *f*, which is open to the one common spout or nozzle, *g*, and is provided with a valve, *h*, worked in the usual manner by the handle *i* and screwed spindle *j*, such valve being arranged to cover the aperture *k*, which communicates with the tail-pipe *l*, (shown broken off short in Figs. 4 and 6.) The two other compartments *b* and *c* open respectively into the tail-pipes *m* and *n*, which are arranged with union joints, as illustrated, in order to facilitate their connection with the supply-pipes, to which they are joined; and such compartments communicate with the central compartment *f* through their respective apertures *d* and *e*, covered by the ordinary leather valves, *o* being the handle for actuating the valve which covers the aperture in the compartment *b*, and *p* the handle for actuating the valve covering the aperture in compartment *c*.

The method of fixing and using this construction of tap or valve is as follows: Either of the tail-pipes may be connected to the perforated extremity of the filtering-vessel, hereinbefore described in reference to Figs. 1, 2, and 3, by means of a union joint or in any other convenient manner, the other end of the filtering-vessel being attached to the water-supply. Now, for the sake of illustration, we will suppose that the tail-pipe *m* is thus connected to the filtering-vessel; the central tail-pipe *l* may then be connected to an ordinary cold-water supply, and the other tail-pipe *n* to a hot-water supply. If it is then required to draw off filtered water the handle *o* will be turned, thus raising the valve off the aperture *d*, which opens a communication with the central compartment *f*, and allows the filtered water to flow through the common spout or nozzle *g*.

If hot water is required, the handle *p* should be turned, thus opening the valve in compartment *c* and allowing the hot water from the tail-pipe *n* to flow into the central compartment *f*, from whence it will escape through the common spout or nozzle *g*. Again, if ordinary cold water is needed the handle *i* is to be turned, when the cold water will enter the central compartment *f* through the aperture *k*, and thus find its way through the same common spout or nozzle *g*.

It will be readily apparent that the filtering-vessel might be connected to this description of tap or cock in various ways so as to dispense with one of the tail or supply-pipes, and thus draw off the filtered water direct from the filtering-vessel, the same as in Figs. 1, 2, and 3. This is accomplished by altering the internal arrangement of one of the side compartments by making it communicate with the central tail-pipe *l* instead of the central compartment *f*, and fixing the filtering-vessel in the place of the tail-pipe which has thus been dispensed with.

A modification of this invention is useful for supplying baths, wash-basins, or similar receptacles with hot and cold water, or for supplying various liquids through one common spout.

What I claim as my invention, and desire to secure by Letters Patent, is—

The combination and arrangement of the filtering-vessel *M* and the valve-tap, when internally divided and fitted with two or more valves, as and for the purposes described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

SAMUEL NORTON.

Witnesses:

SAMUEL WALKER NORTON,
JOHN MOORE.