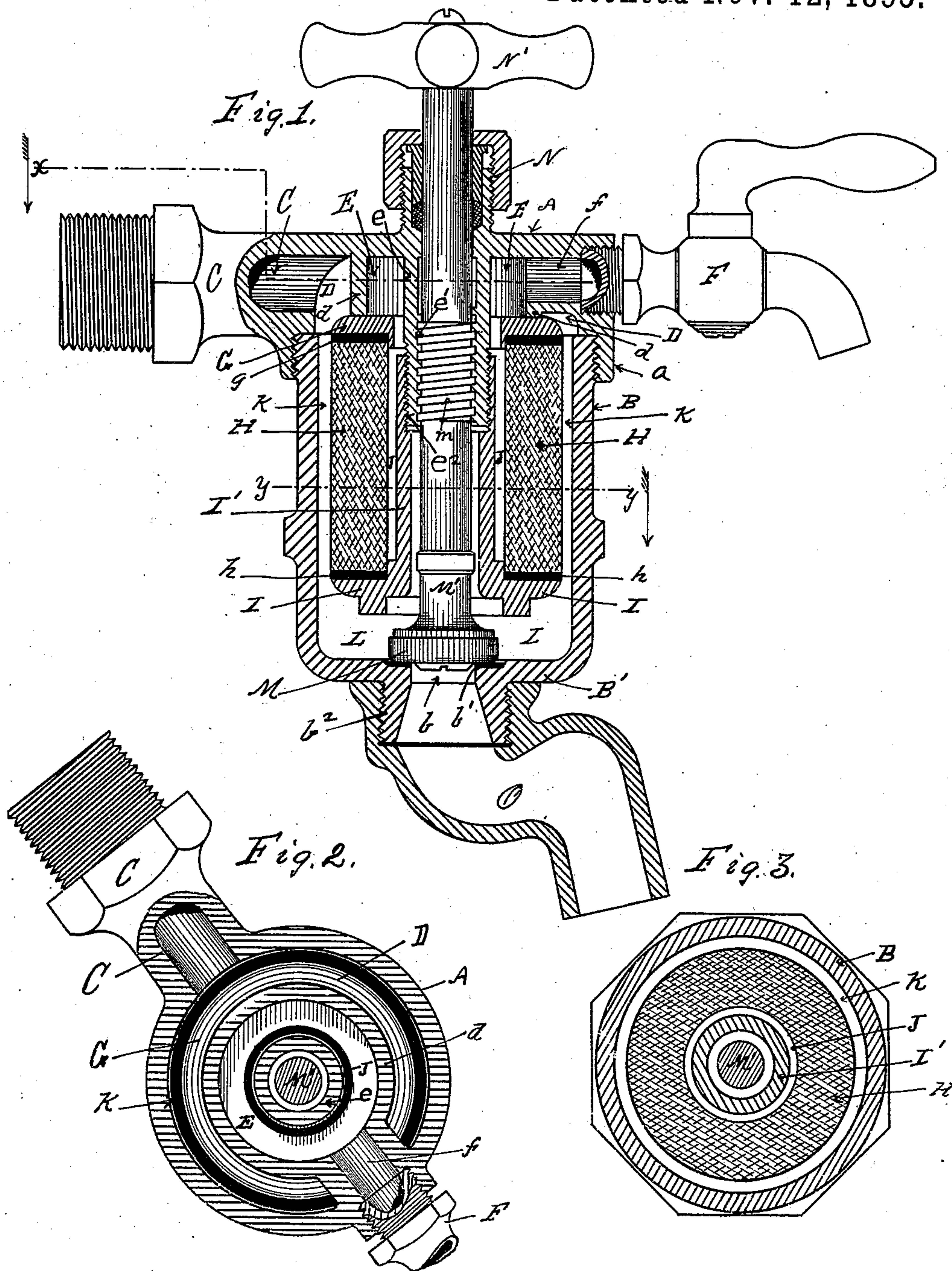


(No Model.)

R. CONRADER.
COMBINED FAUCET AND FILTER.

No. 549,705.

Patented Nov. 12, 1895.



WITNESSES.
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UNITED STATES PATENT OFFICE.

RUDOLPH CONRADER, OF ERIE, PENNSYLVANIA.

COMBINED FAUCET AND FILTER.

SPECIFICATION forming part of Letters Patent No. 549,705, dated November 12, 1895.

Application filed May 14, 1895. Serial No. 549,267. (No model.)

To all whom it may concern:

Be it known I, RUDOLPH CONRADER, a citizen of the United States, residing at the city of Erie, in the county of Erie and State of Pennsylvania, have invented certain new and useful Improvements in Combined Faucets and Filters; 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, reference being had to the accompanying drawings, and to the letters of reference marked thereon, forming part of this specification.

My invention consists in the improvements in combined faucets and filters hereinafter set forth and explained, and illustrated in the accompanying drawings, in which—

Figure 1 is a vertical central section of my improved combined faucet and filter. Fig. 2 is a transverse section of my combined faucet and filter on the line x in Fig. 1, looking in the direction of the arrow. Fig. 3 is a transverse section of the same on the line $y y$ in Fig. 1, looking in the direction of the arrow.

In the accompanying drawings, illustrating my invention, A is the upper and B the lower section of the shell or body of my device, the lower section B being preferably secured into a flange a on the upper section A, so as to be removed therefrom when necessary.

In the upper section A is an annular chamber D, with which an inlet-opening C communicates to supply water thereto. Inside of the annular chamber D and separated therefrom by a vertical wall d is an annular chamber E, which communicates by means of a passage f with an outlet-cock F. The inner wall e of the annular chamber E extends downward in the form of a sleeve, and is provided with an inner thread e' and an outer thread e'' , for the purpose hereinafter set forth.

Abutted against the lower end of the annular wall d there is a washer G, having a ring of packing g on its lower surface, against which the upper end of a hollow cylinder H, of porous stone, burnt clay, or other suitable porous filtering material, abuts and forms a tight joint therewith. Against the lower end of the cylinder H, I place a ring of packing h , against which a flange I, provided with an up-

wardly-projecting sleeve I', having an annular screw-thread on its upper end, is adapted to engage the screw-thread e'' on the lower end of the sleeve e and clamp the flange I against the packing h , so as to firmly secure the hollow porous cylinder H between the packing-rings g and h , leaving a narrow annular passage J between the inside surface of the porous cylinder H and the outer surface of the sleeves I' and e , which opens at its upper end into the annular chamber E and thence to the outlet-cock F.

Between the inside of the lower part B of the shell and the outer surface of the porous cylinder H there is a narrow annular passage K, the upper end of which opens into the annular chamber D, communicating with the inlet-opening C, and the lower end of this passage K opens into a chamber L, formed between the lower end B' of the shell B and the lower part of the flange I, and in the central part of the bottom B' of the shell there is a discharge-opening b , having a valve-seat b' at its upper end, upon which a vertically-moving valve M operates to open and close the discharge-opening b . From this valve M a valve-stem M' extends upward through the sleeves I' and e , the thread m thereon engaging the thread e' in the lower end of the sleeve e , and passes up and out through a stuffing-box N on the top of the upper section A of the body or shell, and is provided with an operating-handle N', by means whereof the valve M can be operated to open and close it.

On the nipple b'' , extending downward from the opening b , I preferably secure a curved outlet O to properly direct the water passing through the opening b ; but this may be omitted, if desired.

In operation the inlet C is secured to the water-pipe in place of the ordinary faucet. The water then flows into the annular chamber D, and therefrom down through the annular passage K until the chamber L is entirely filled, after which time the pressure of the water from the supply-pipe is exerted upon the water surrounding the porous filtering-cylinder H, forcing the water through it into the annular passage J, from whence it passes up into the annular chamber E, from whence the filtered water is drawn off through

the outlet-cock or faucet F. In case, however, it is desired to use the water without its being filtered, the valve M can be opened, which causes a strong flow of water from the annular chamber D down through the narrow annular passage K between the inside of the part B of the shell or body and the periphery of the porous cylinder H, so as to supply the outlet-opening *b* to its full capacity, and at the same time during its traverse downward it washes any matter deposited on the outside of the cylinder off and carries it away with the water being drawn off through the outlet *b*. Thus it will readily be seen that my device enables both filtered and unfiltered water to be drawn therefrom, as desired, while at the same time the porous cylinder is kept clean by the operation of drawing the unfiltered water.

Having thus fully described my invention, so as to enable others to construct and use the same, what I claim as new, and desire to secure by Letters Patent of the United States, is—

1. In a combined faucet and filter, a shell or body, a hollow filtering cylinder therein, an annular space surrounding the filtering cylinder and a water inlet communicating therewith, a hollow sleeve extending down through the central opening in the filtering cylinder and a collar or washer on the lower end of said hollow sleeve fitting up against the lower end of the filtering cylinder and retaining it in place, an inner annular chamber surrounding said hollow sleeve, an outlet for discharging water from said inner chamber, a discharge cock in the lower end of the shell or body for discharging water passing down around the outside of the filtering cylinder, and a valve stem for operating said cock extending up through and engaging a screw thread within said hollow sleeve, substantially as and for the purpose set forth.

2. In a combined faucet and filter, a shell or body, a hollow filtering cylinder therein, an outer annular chamber in the upper part of the shell or body communicating with the

water supply and with a narrow annular space surrounding the filtering cylinder, a hollow sleeve extending down through the central opening in the filtering cylinder and a collar or washer on the lower end of said hollow sleeve fitting against the lower end of the filtering cylinder and securing it in place, an inner annular chamber surrounding said hollow sleeve, an outlet cock for discharging water from said inner chamber, a discharge cock in the central part of the lower end of the shell or body for discharging water passing down around the outside of said porous filtering cylinder, and a valve stem for operating said cock extending up through and engaging a screw thread within said hollow sleeve, substantially as and for the purpose set forth.

3. In a combined faucet and filter, a shell or body, an inlet opening in the upper part of said shell or body and an annular chamber D communicating therewith, an inner annular chamber E separated from the outer chamber by an annular wall *d*, an outlet cock F communicating with said chamber E, a washer G fitting up against the lower end of the wall *d*, a hollow porous cylinder H fitting up against packing *g* on said washer, a hollow sleeve *e* forming the inner wall of the chamber E and extending down into the central opening in said porous cylinder, a hollow sleeve I' extending up into the central opening in said porous cylinder and engaging the lower end of the hollow sleeve *e* by means of screw threads thereon, a flange I on said sleeve I' adapted to cover and engage the lower end of said porous cylinder and packing *h* between said flange and the lower end of said cylinder, substantially as and for the purpose set forth.

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

RUDOLPH CONRADER.

Witnesses:

RALPH STURGEON,
C. B. HAYES.