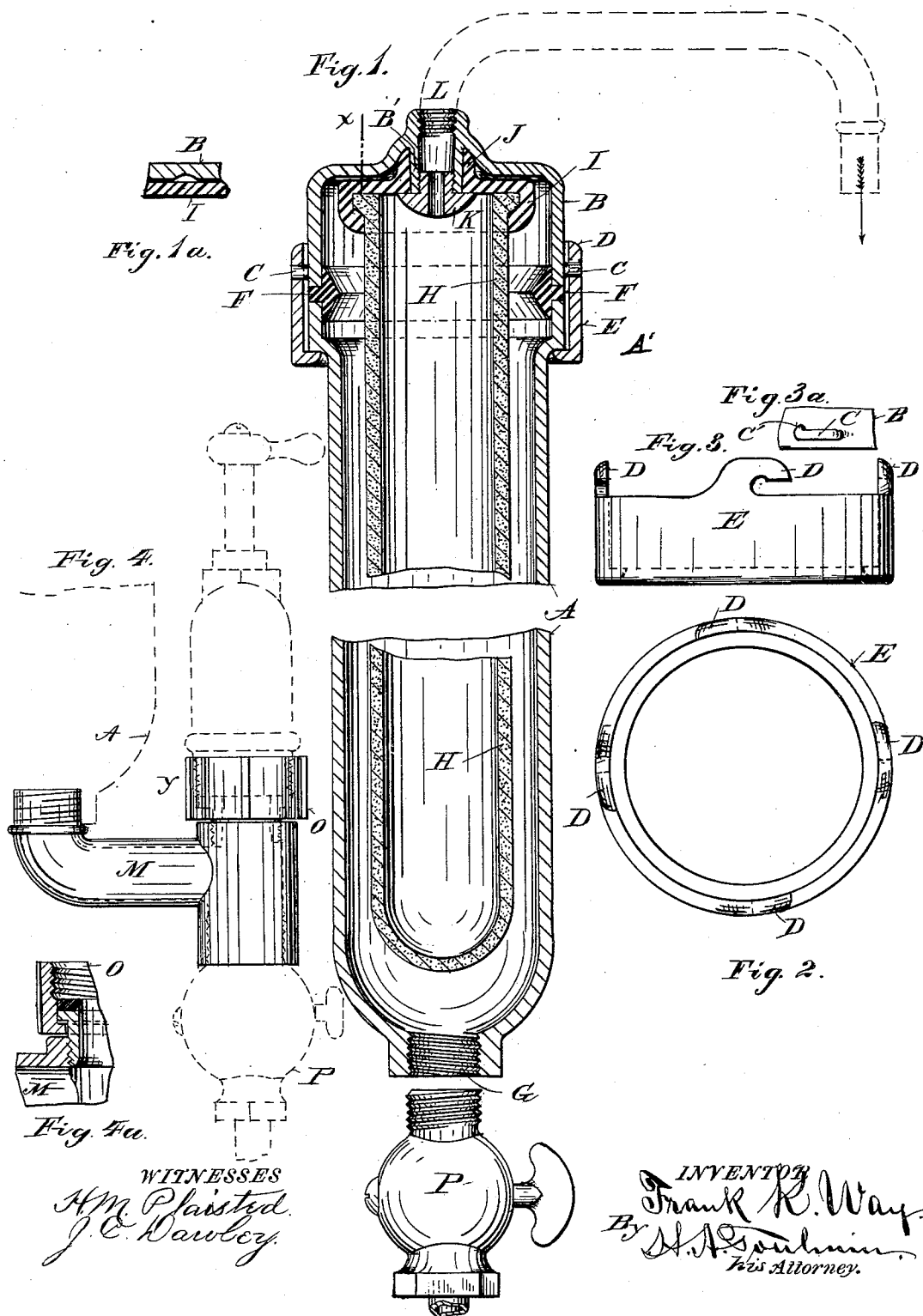


(No Model.)

F. K. WAY.
LIQUID PURIFYING DEVICE.

No. 479,381.

Patented July 19, 1892.



WITNESSES

H. M. Plaisted.
J. E. Dawley.

INVENTOR
Frank K. Way.
By H. A. Souther.
His Attorney.

UNITED STATES PATENT OFFICE.

FRANK K. WAY, OF DAYTON, OHIO, ASSIGNOR TO THE DOMESTIC WATER PURIFIER COMPANY, OF CHICAGO, ILLINOIS.

LIQUID-PURIFYING DEVICE.

SPECIFICATION forming part of Letters Patent No. 479,381, dated July 19, 1892.

Application filed October 26, 1891. Serial No. 409,782. (No model.)

To all whom it may concern:

Be it known that I, FRANK K. WAY, a citizen of the United States, residing at Dayton, in the county of Montgomery and State of Ohio, have invented certain new and useful Improvements in Liquid-Purifying Devices, of which the following is a specification, reference being had therein to the accompanying drawings.

10 This invention relates to certain new and useful improvements in water purifying or filtering devices, and is especially adapted to domestic use for the purification, filtering, or cleansing of drinking-water, though capable
15 of a wide range of use, as in laboratories, drug-stores, distilleries, and other places where water, wine, or other liquids are to be filtered and separated from the impurities and foreign matter contained in them.

20 The invention consists of certain mechanical arrangements and constructions for suspending the filtering device proper within its inclosing casing in a manner to insure a perfectly-tight joint and without liability to
25 break the filtering device.

In the accompanying drawings, forming a part of this specification and on which like reference-letters indicate corresponding parts, Figure 1 represents a longitudinal sectional
30 view of my device; Fig. 1^a, a section of Fig. 1 at *x*; Fig. 2, a plan view of the clamping-collar; Fig. 3, an edge view of the same; Fig. 3^a, a portion of a cap, showing the lug thereon engaged by one of the hooks of the collar;
35 Fig. 4, a detached view of the coupling by which the device is mounted on a faucet; Fig. 4^a, a vertical section of the coupling-collar at *y*, Fig. 4.

The letter A designates a casing, preferably
40 of tubular form and provided with an offset or shoulder A' near one end, which is covered by a cap B, matching said end, and provided with lugs or other suitable projections C, adapted to be engaged by the hooks D of an
45 encircling collar E, the lower end of which is turned in, as shown in Fig. 1, in order to engage with said shoulder A' of the casing. A gasket F, of rubber or other suitable material, is interposed between the adjacent edges
50 of said cap and casing and is of such form as

to make a water-tight joint. The hook D on the collar is provided with a notch in its upper surface to receive the projection of spur C' of the lug C, and thus prevent accidental
55 disengagement of the cap from the casing. A series of such hooks and lugs are provided on the said collar and cap, respectively, and the flexibility of the gasket F allows of pressing the cap toward the casing and rotating the collar or cap till the hooks and lugs are in
60 engagement.

Within the casing is mounted a porous tube H, hereinafter referred to, and provided with a collar or annular projecting portion at one end adapted to be embraced by the recessed
65 flange of a flexible coupling I, of rubber or other suitable material, which has a tubular portion J, embracing a matching tubular projection B' of the cap and supported by a perforated button or stud-bolt K, conveniently
70 threaded into said cap, and thus holding the tubular portion J from dislodgment, as shown in Fig. 1. The pressure of the water will force the tube and its flexible coupling against the upper portion of the cap, and the under side
75 of said cap is therefore grooved, as shown in Figs. 1 and 1^a, or otherwise adapted to allow access of the water to the tubular extension J, in order to press it tightly against the corresponding portion of the cap and effect a
80 tight joint therewith. The porous tube is therefore flexibly supported within the casing, and water-tight joints are made by means of said flexible coupling with both cap and tube. The water under pressure within the casing
85 percolates through the porous tube and finds exit through the opening at L, to which a goose-neck may be attached, as indicated by the dotted lines. The other opening at G, whereby access to the casing is obtained, may
90 be engaged with a pipe directly or to a coupling M, as shown in Fig. 4, having a loose collar O, adapting it to be coupled to a faucet or other liquid-delivering device at one end of the T, the other end being provided with a
95 valve P, as indicated by the dotted lines in Fig. 4. The water may thus be drawn directly through the T of the coupling in its ordinary unfiltered condition when so desired; but by closing the valve P the liquid will be
100

sent into the filter and discharged through the goose-neck, as indicated by the arrow, in a purified condition for drinking.

Referring to this filtering-tube, I would have it understood that the compound of which it may be composed forms no part of this invention, as any filtering compound known to the art and capable of successful use may be used in connection with the mechanical features of this my invention. The art also furnishes the idea of a tubular filtering device, such form of filter or purifier I understand to be in a broad and general sense well known at this date. I further claim it only in connection with my flexible coupler when the same is adapted to connect therewith substantially in the manner and upon the principles herein set forth, whatever be the compound or ingredients that enter into the structure of the tube.

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

1. The combination, with a case, a cap therefor, and a filter proper having a projecting shoulder at one end and mounted within said case, of a flexible coupling between said filter proper and said cap and consisting of an annular recessed portion embracing said shouldered end of the filter proper and of a tubular

portion opposite thereto, the said cap having an extension matching said tubular portion of the coupling, and a stud-bolt supporting said coupling and mounted in said cap extension.

2. In a liquid-purifying device, the combination, with a casing, a cap therefor, and a filter proper mounted within said casing, of couplings between said cap and casing and said cap and filter proper, respectively, the first consisting of an annular portion or ridge extending outward to be gripped between the edges of the cap and the casing and of flaring portions thinned at their edges and pressing against the inside of the casing, the other consisting of an undercut recessed portion forming a lip adapted to support the filter proper, and an oppositely-extending tubular portion adapted to embrace a matching portion of the cap and be pressed tightly against the same by the pressure of the water, and means to maintain the said couplings and their adjacent parts respectively in engagement.

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

FRANK K. WAY.

Witnesses:

W. M. MCNAIR,
OLIVER H. MILLER.