

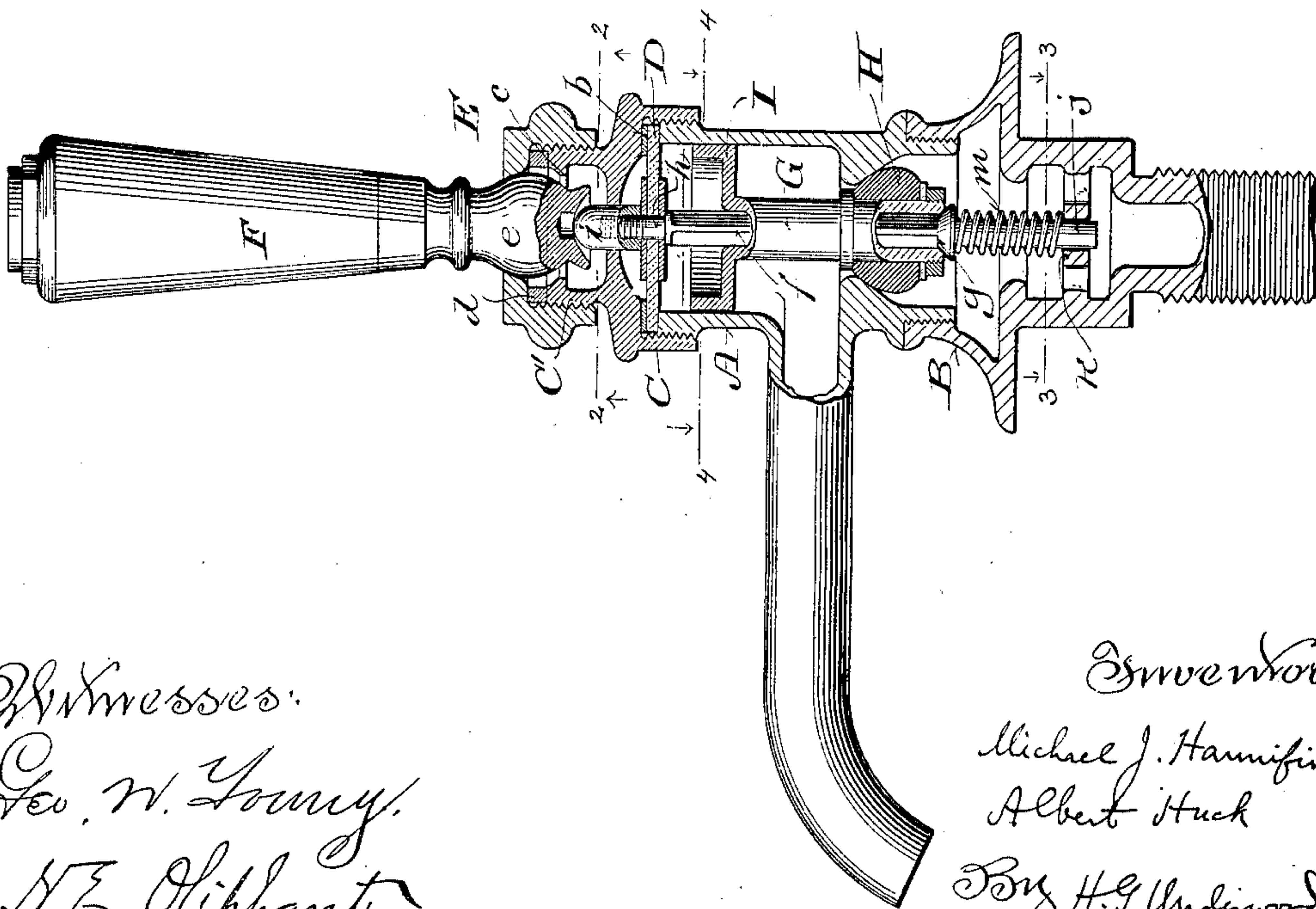
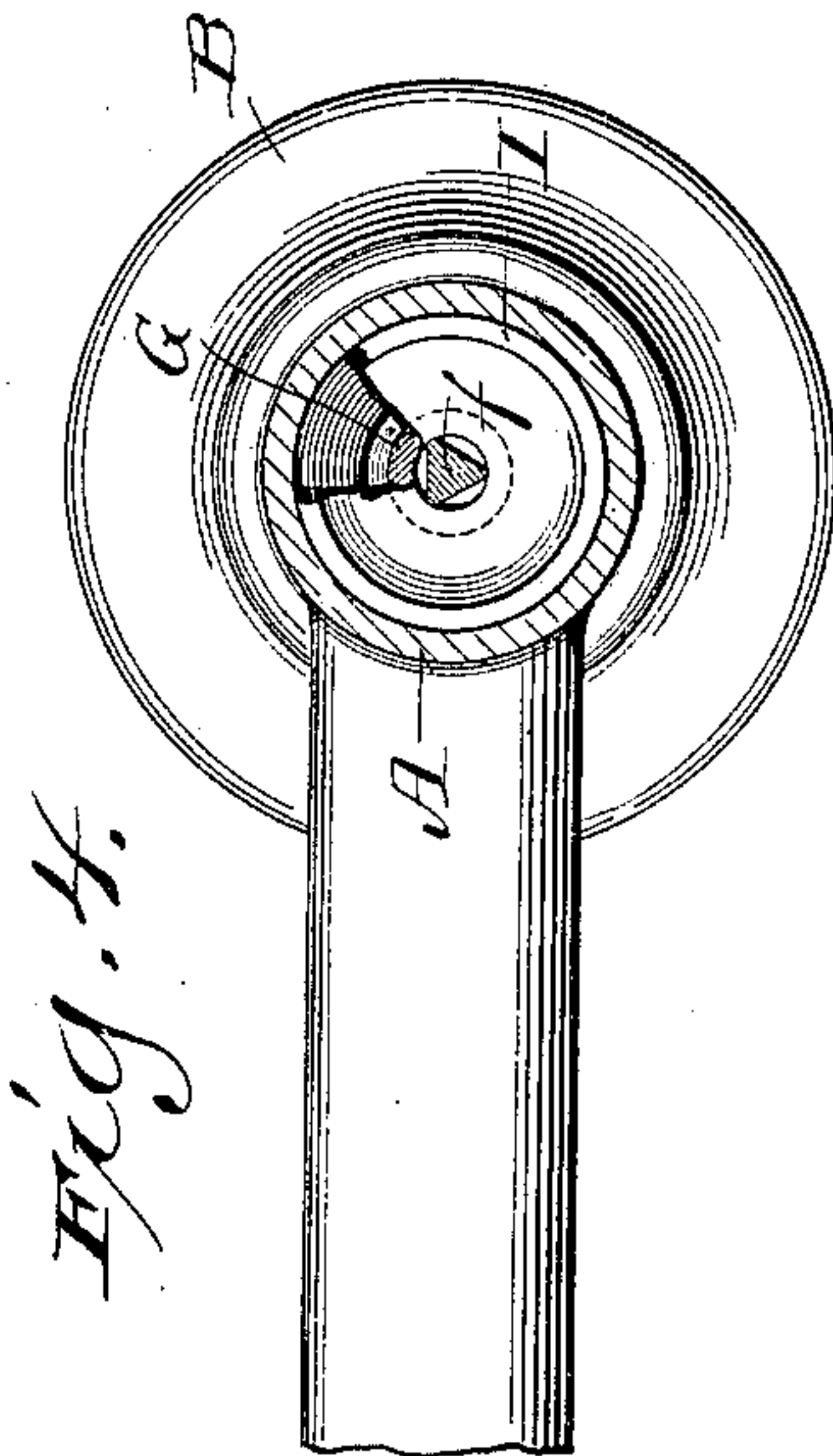
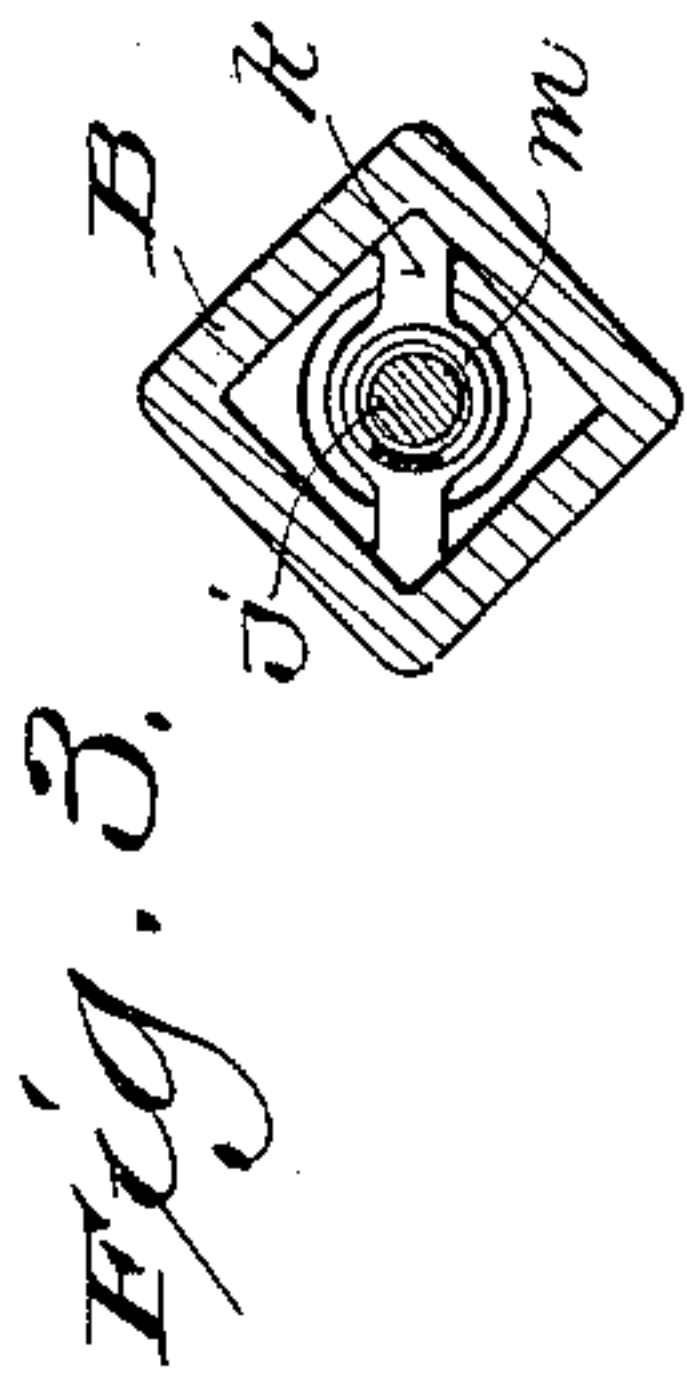
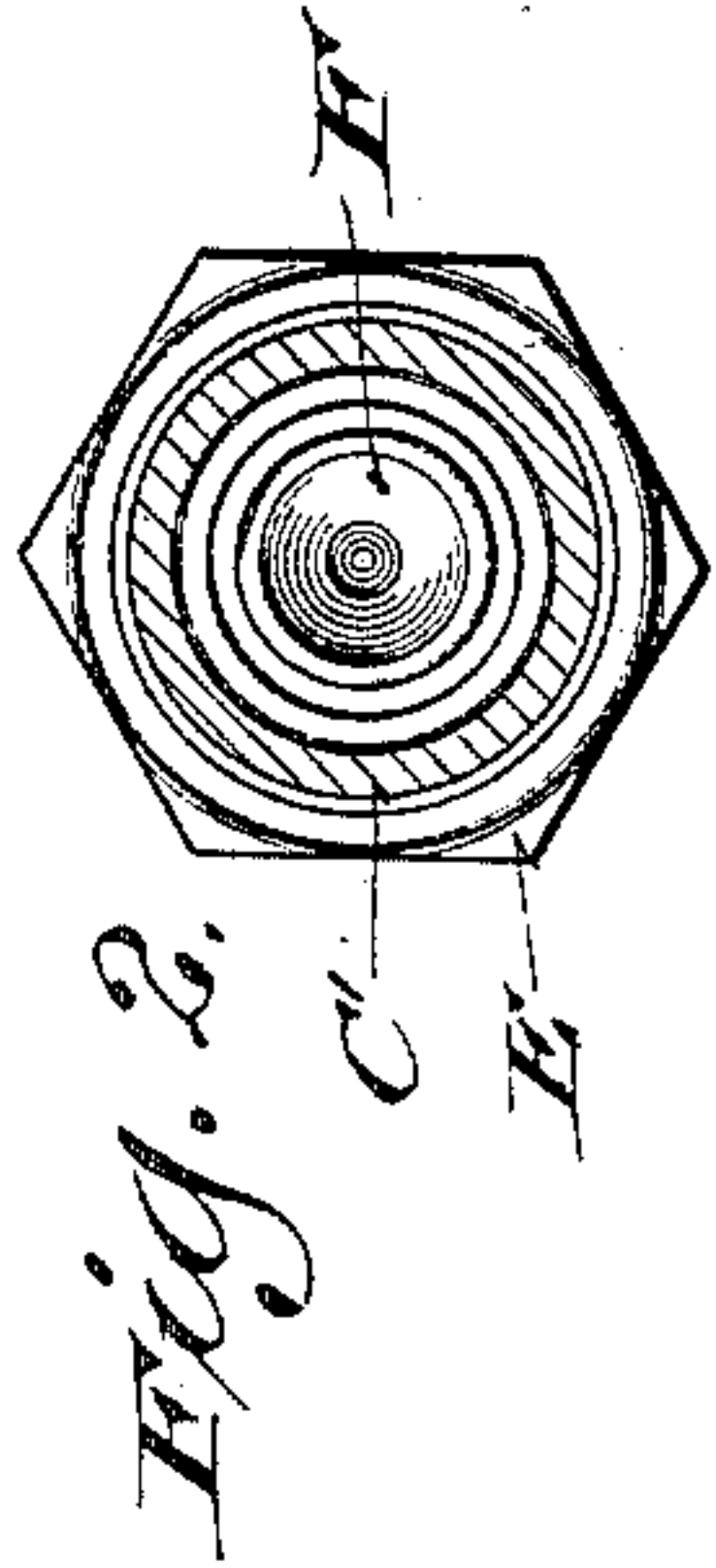
No. 657,107.

M. J. HANNIFIN & A. HUCK.
FAUCET.

Patented Sept. 4, 1900.

(Application filed June 6, 1900.)

(No Model.)



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UNITED STATES PATENT OFFICE.

MICHAEL J. HANNIFIN AND ALBERT HUCK, OF MILWAUKEE, WISCONSIN.

FAUCET.

SPECIFICATION forming part of Letters Patent No. 657,107, dated September 4, 1900.

Application filed June 6, 1900. Serial No. 19,222. (No model.)

To all whom it may concern:

Be it known that we, MICHAEL J. HANNIFIN and ALBERT HUCK, citizens of the United States, and residents of Milwaukee, in the county of Milwaukee and State of Wisconsin, have invented certain new and useful Improvements in Faucets; and we do hereby declare that the following is a full, clear, and exact description thereof.

Our invention has for its main object to provide simple, economical, self-closing, noiseless faucets; and a further object of our invention is to provide faucets having handles movable in any direction to open said faucets.

These objects we attain by the peculiarities of construction and combination of parts hereinafter particularly set forth with reference to the accompanying drawings and subsequently claimed.

Figure 1 of the drawings represents a partly-sectional view of a basin-faucet embodying our improvements; and Figs. 2, 3, and 4, detail horizontal section views of the faucet, these three views being respectively indicated by lines 2 2, 3 3, and 4 4 in the first figure.

Referring by letter to the drawings, A indicates the spout-section, B the base or pipe-connection section, and C the cap of the shell portion of a basin-faucet embodying our improvements, these parts being in screw-thread connection one with another. A flexible diaphragm D and washer *b* are interposed between spout-section A and cap C of the faucet-shell. The cap is made with an upper cup-like extension C', having an inwardly-extending concave rim-flange *c*, and in screw-thread connection with this cap extension against an interposed washer *d* is a supplementary cap E, having a central head-aperture made to fit a spherical bulb *e* of a handle F, by which a valve, hereinafter more particularly described, is unseated. The lower end of the handle is concave, and the flange *c* of main-cap extension C' constitutes a seat upon which to rock said handle in any direction, the construction and arrangement of parts being such that this handle has ball-and-socket union with the faucet-shell.

The stem G of the ordinary compressible plug-valve H of the faucet is made hollow and provided at its upper end with a preferably cup-like piston I, that has its play in the

spout-section of the faucet-shell. Guided in the hollow valve-stem is an angular portion *f* of a stem, having a shoulder *g*, that constitutes an auxiliary valve for closing the lower end of said hollow stem, this lower end of the main valve being machined to form a seat for the auxiliary valve. The upper end *h* of the auxiliary-valve stem is made round, and a thimble *i* in screw-thread connection with this end of said valve-stem serves to clamp the latter in engagement with the diaphragm D, the thimble being guided in an aperture of cap C and having a rounded end in opposition to the concave end of the faucet-handle. The lower portion *j* of the auxiliary-valve stem is also round and loose in a guide *k*, provided in the pipe-connection section of the faucet-shell.

Intermediate of auxiliary valve *g* and lower guide *k* for its stem we prefer to arrange a spiral spring *m* around said stem; but it is practical to omit the spring, said lower guide, and so much of the aforesaid stem as is herein shown below said auxiliary valve.

In practice handle F is rocked in any direction to thereby unseat valve *g*, and thus permit a flow of water or other fluid under pressure through hollow valve-stem G into the space between the diaphragm D and piston-head I of said stem. The area of the piston is such that the fluid under pressure accumulating in the aforesaid space operates to unseat the main valve H, and thereby open the faucet. On release of handle F the auxiliary and main valves are automatically seated by the action thereon of the fluid under pressure, the accumulation of fluid above piston I serving as a cushion to prevent concussion in the faucet. The spring *m* operates by expansion to prevent sticking of the stem of the auxiliary valve, as well as to insure proper seating of this valve, and the fluid left in the space above piston I leaks down to find its way out through the spout of the faucet.

Having thus described our invention, what we claim as new, and desire to secure by Letters Patent, is—

1. A faucet having a cap provided with a cup-like extension in turn provided with a concave inwardly-extending flange, a supplementary cap in screw-thread connection with

the main-cap extension, and a handle having a concave end and spherical bulb within the confines of the supplementary cap and said main-cap extension, and a reciprocative valve 5 having a rounded stem extremity opposing the concave end of the handle.

2. A faucet comprising a valve having a hollow stem, a piston on the stem movable in the spout-section of the faucet-shell, a flexible 10 diaphragm between said spout-section of said shell and its cap, a cup-like extension on the cap having a concave inwardly-extending rim-flange, a supplementary cap in screw-thread connection with the main-cap extension, a handle having a concave end and 15 spherical bulb within the confines of the supplementary cap and said main-cap extension,

another stem guided in the hollow main-valve stem and engaged with the diaphragm, a round-end thimble in screw-thread connection with the auxiliary stem to oppose the 20 concave end of the handle, and a valve on said auxiliary stem governing said hollow main-valve stem.

In testimony that we claim the foregoing we 25 have hereunto set our hands, at Milwaukee, in the county of Milwaukee and State of Wisconsin, in the presence of two witnesses.

M. J. HANNIFIN.
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Witnesses:

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