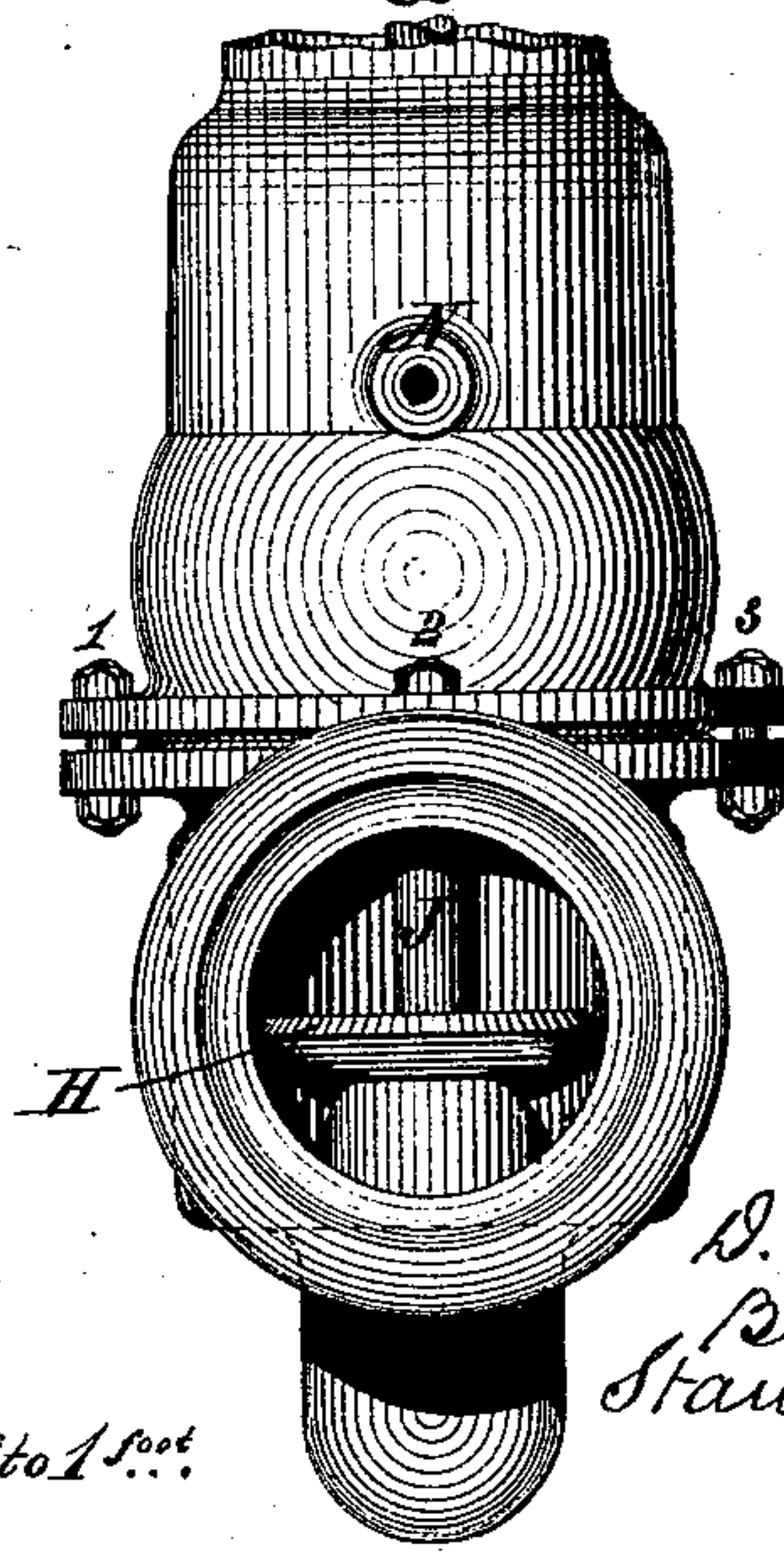
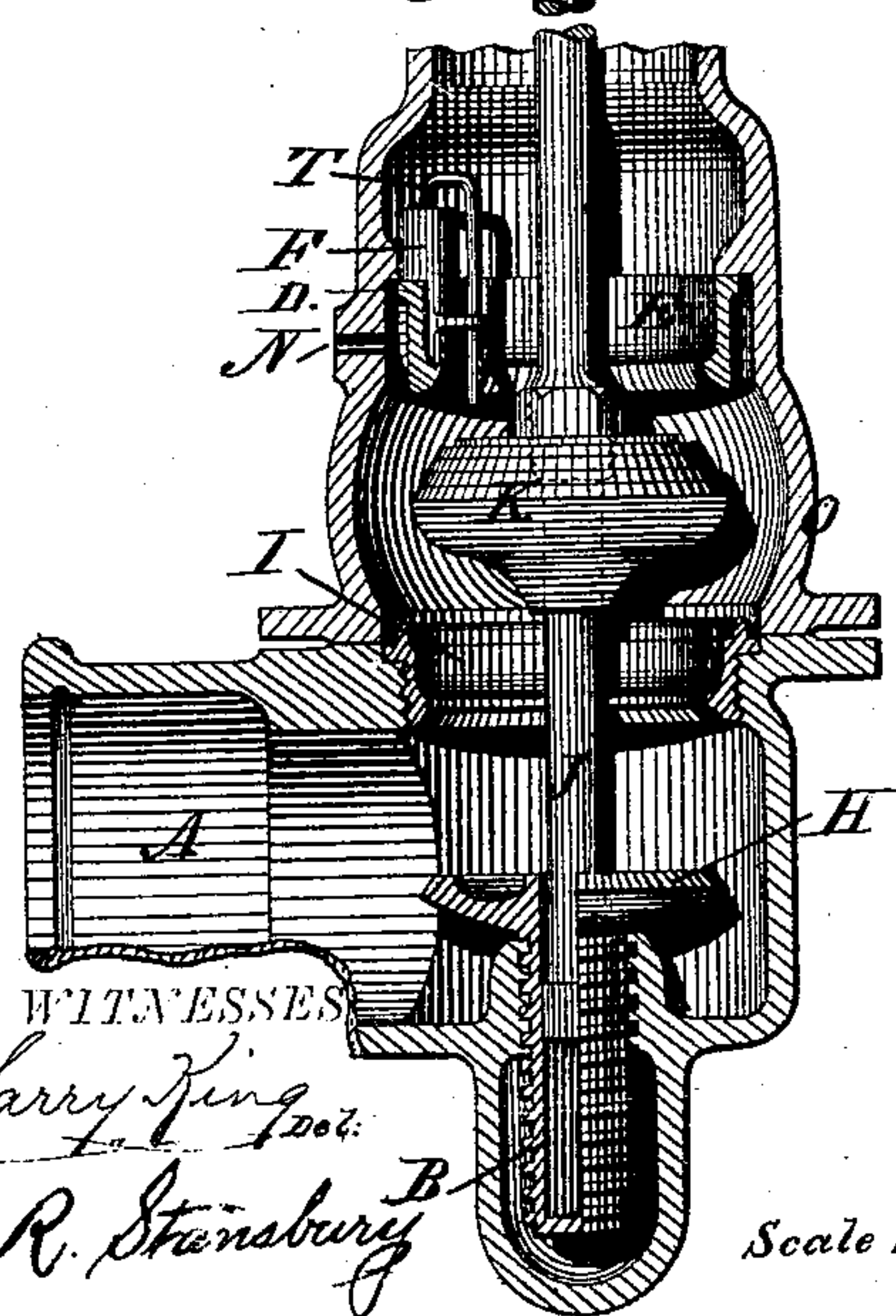
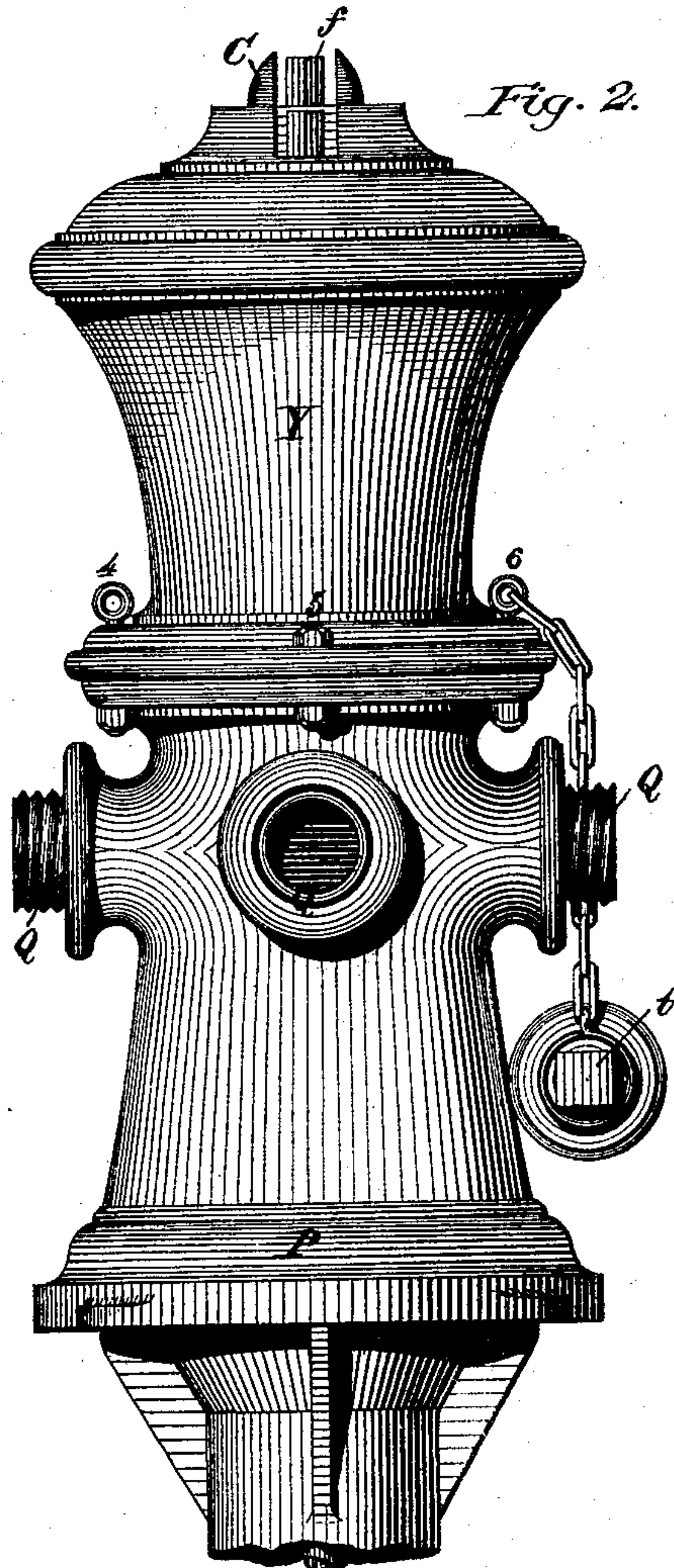
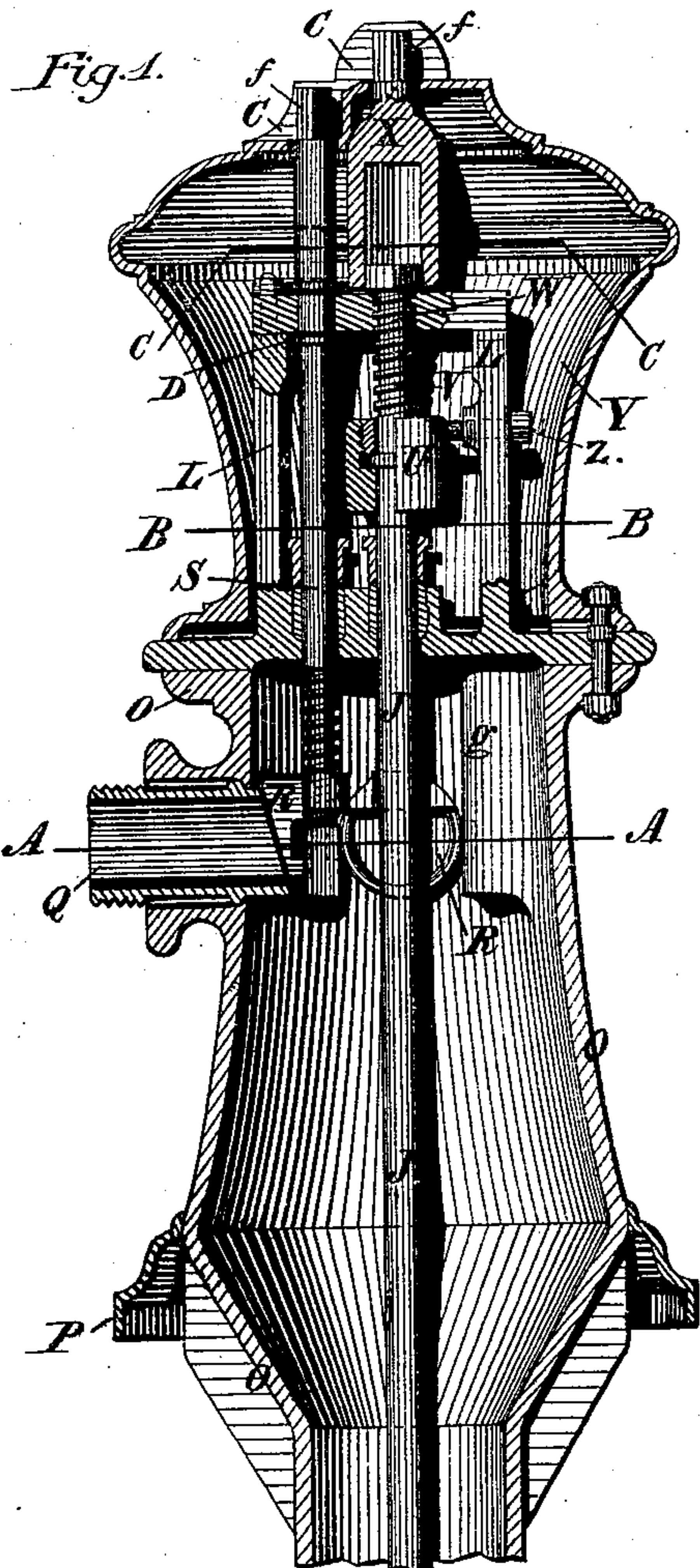


De W. C. CREGIER.
Hydrant.

No. 164,149.

Patented June 8, 1875.



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Scale $2\frac{2}{3}$ inches to 1 foot.

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Fig. 3.

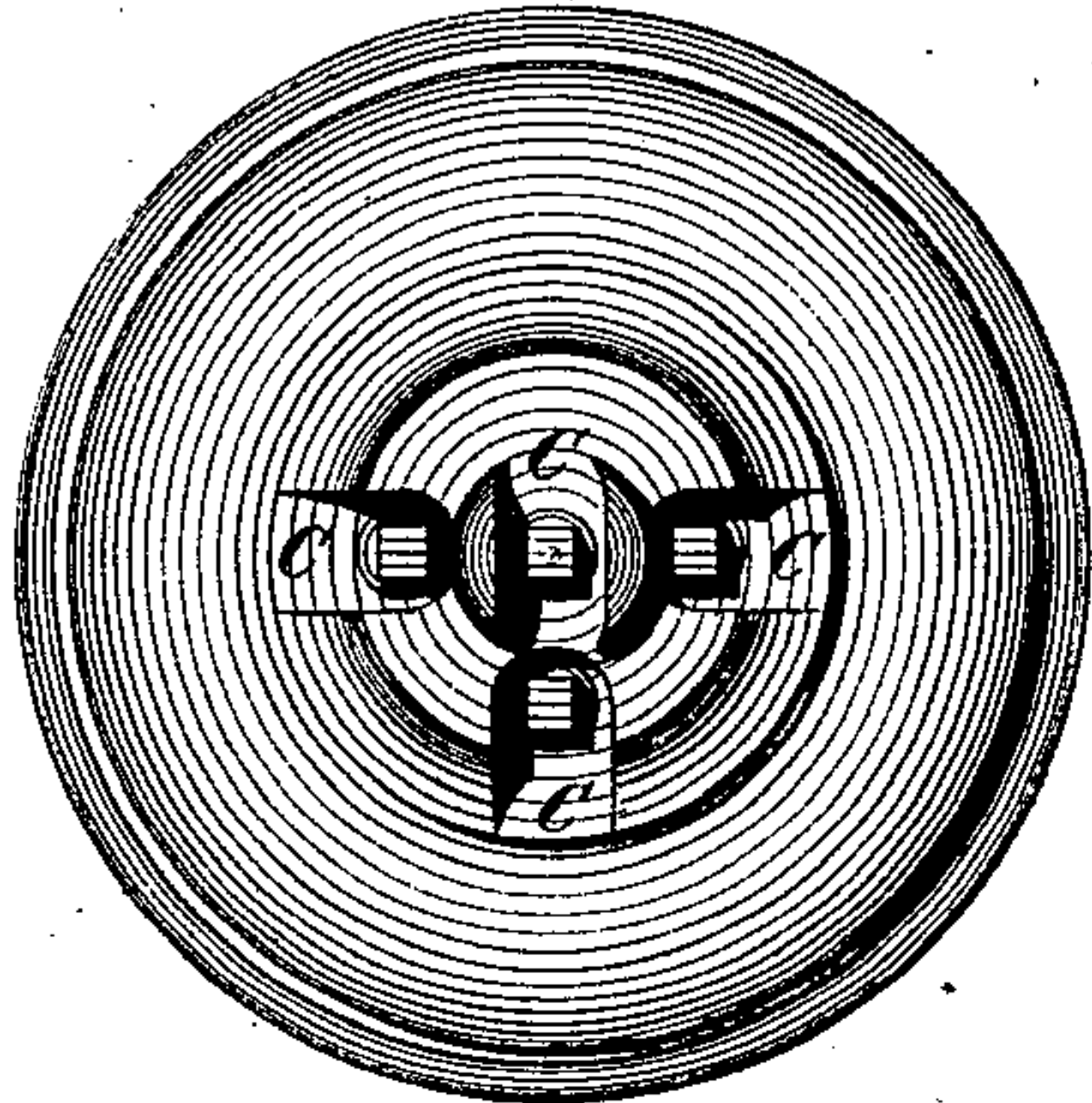


Fig. 4.

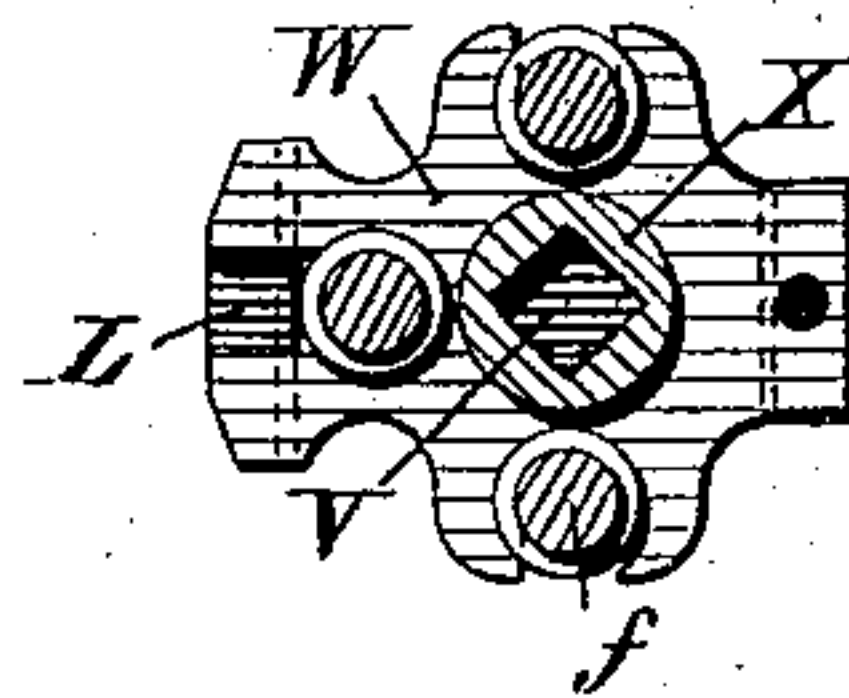


Fig. 5.

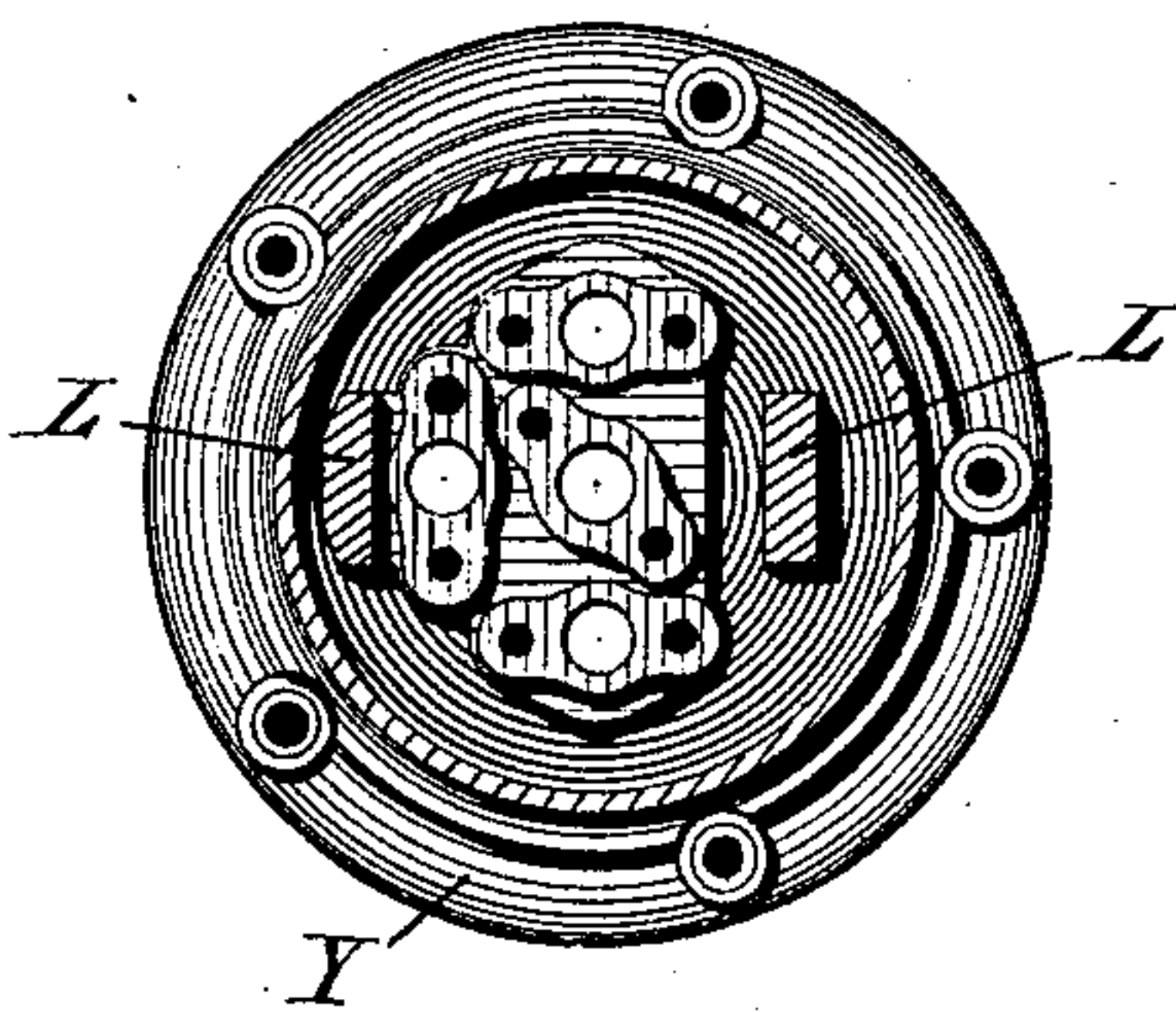
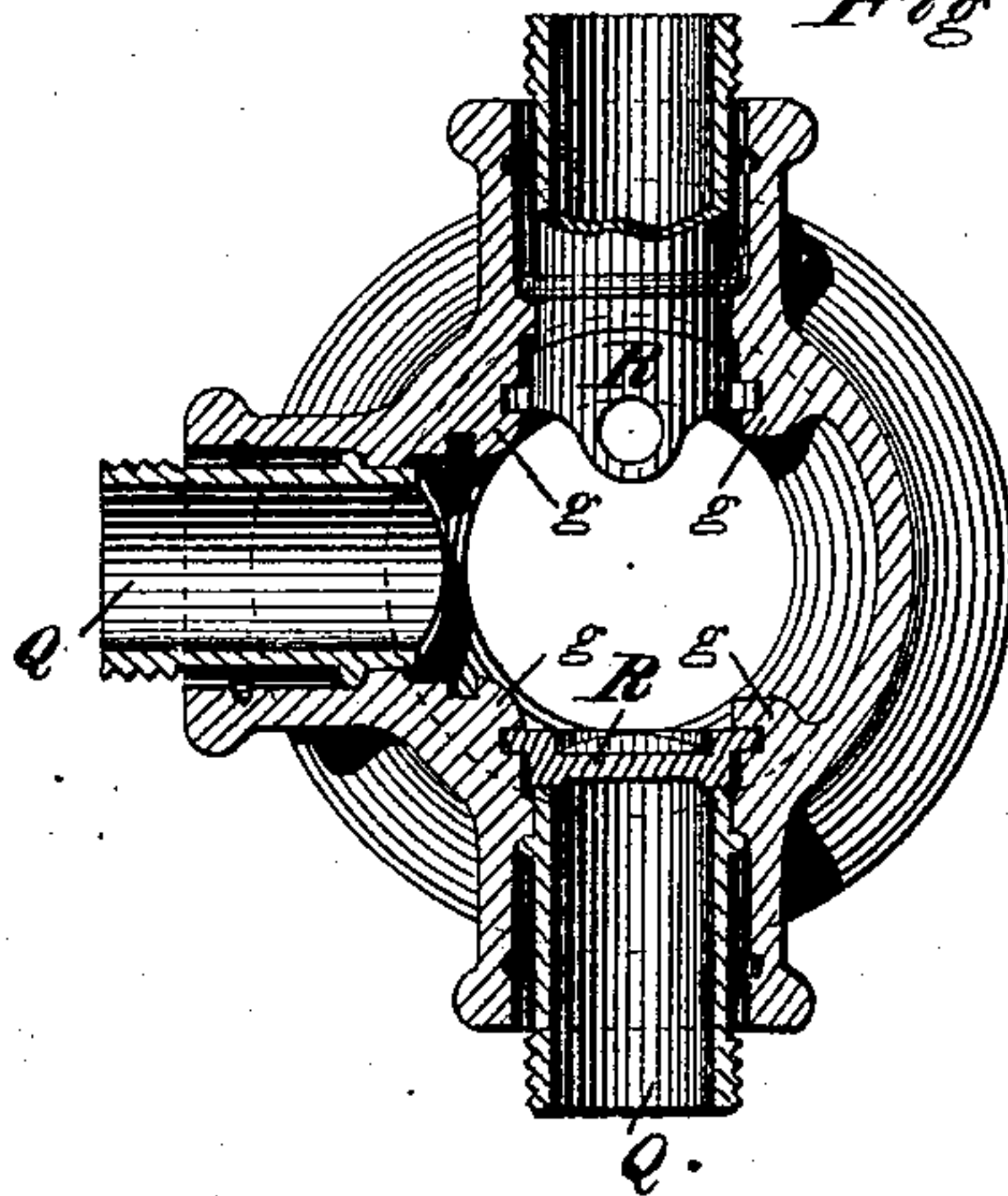


Fig. 6.



Scale $2\frac{2}{3}$ in to 1 foot.

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Hydrant.

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Fig 8.

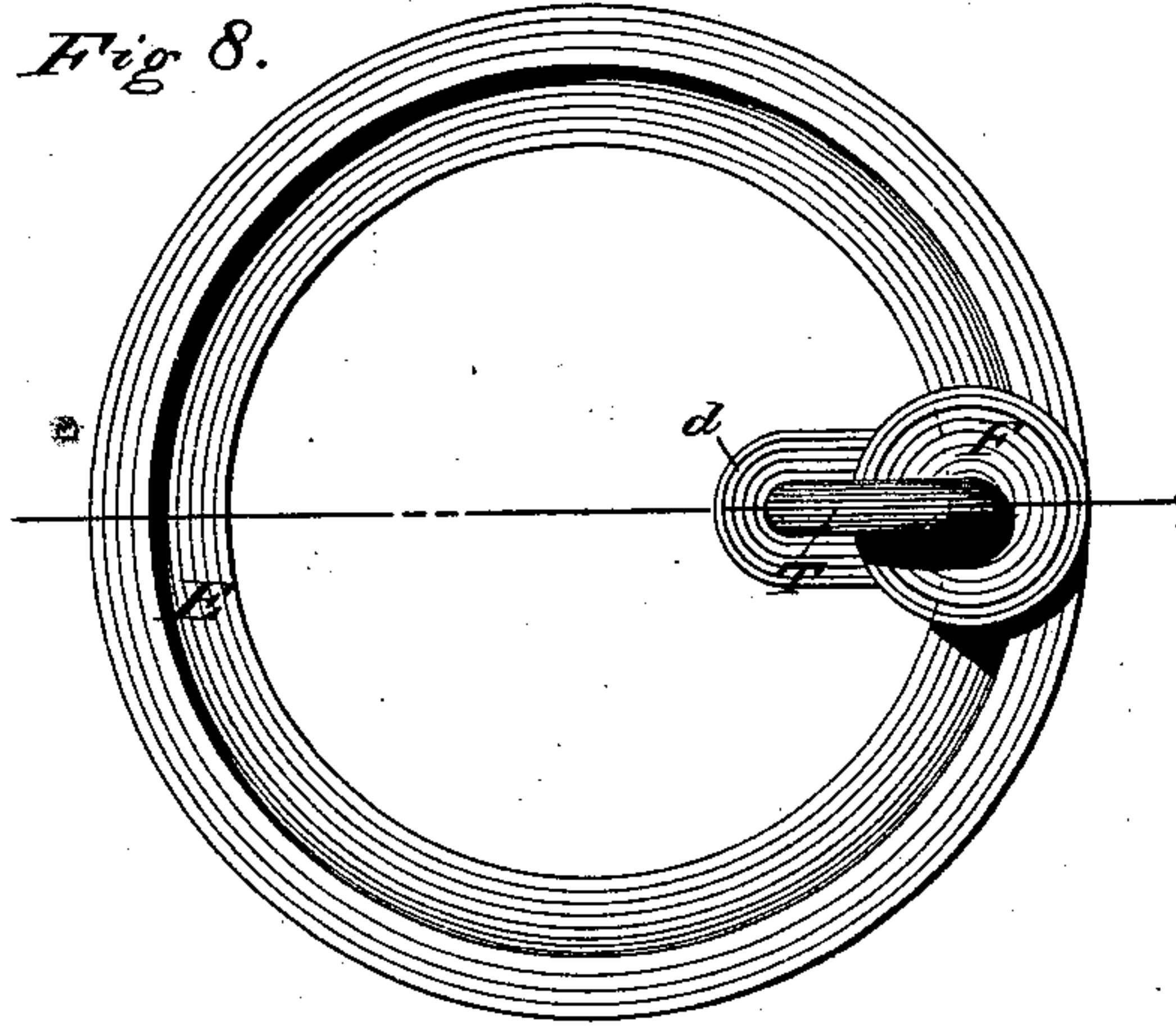


Fig 7.

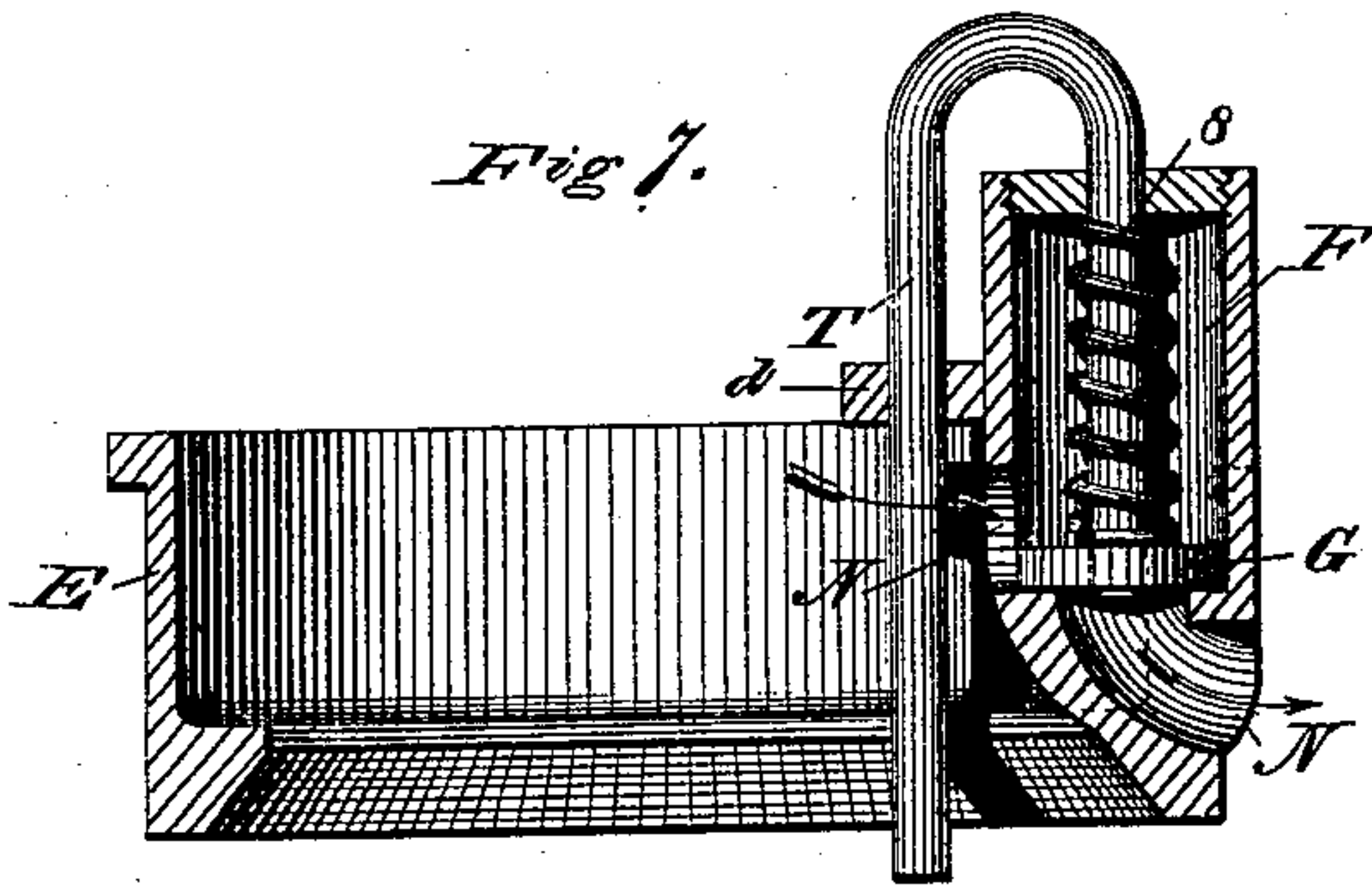
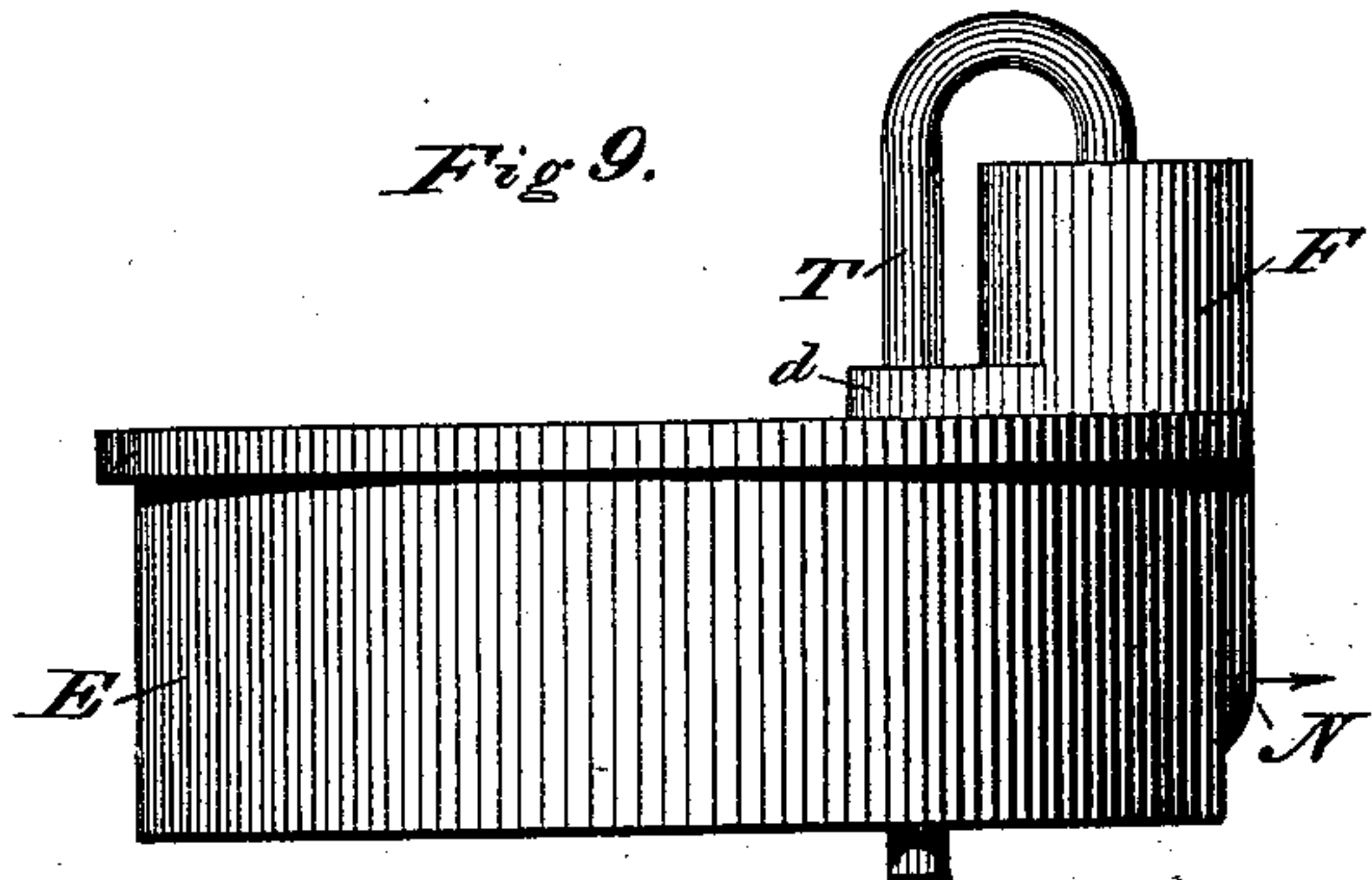
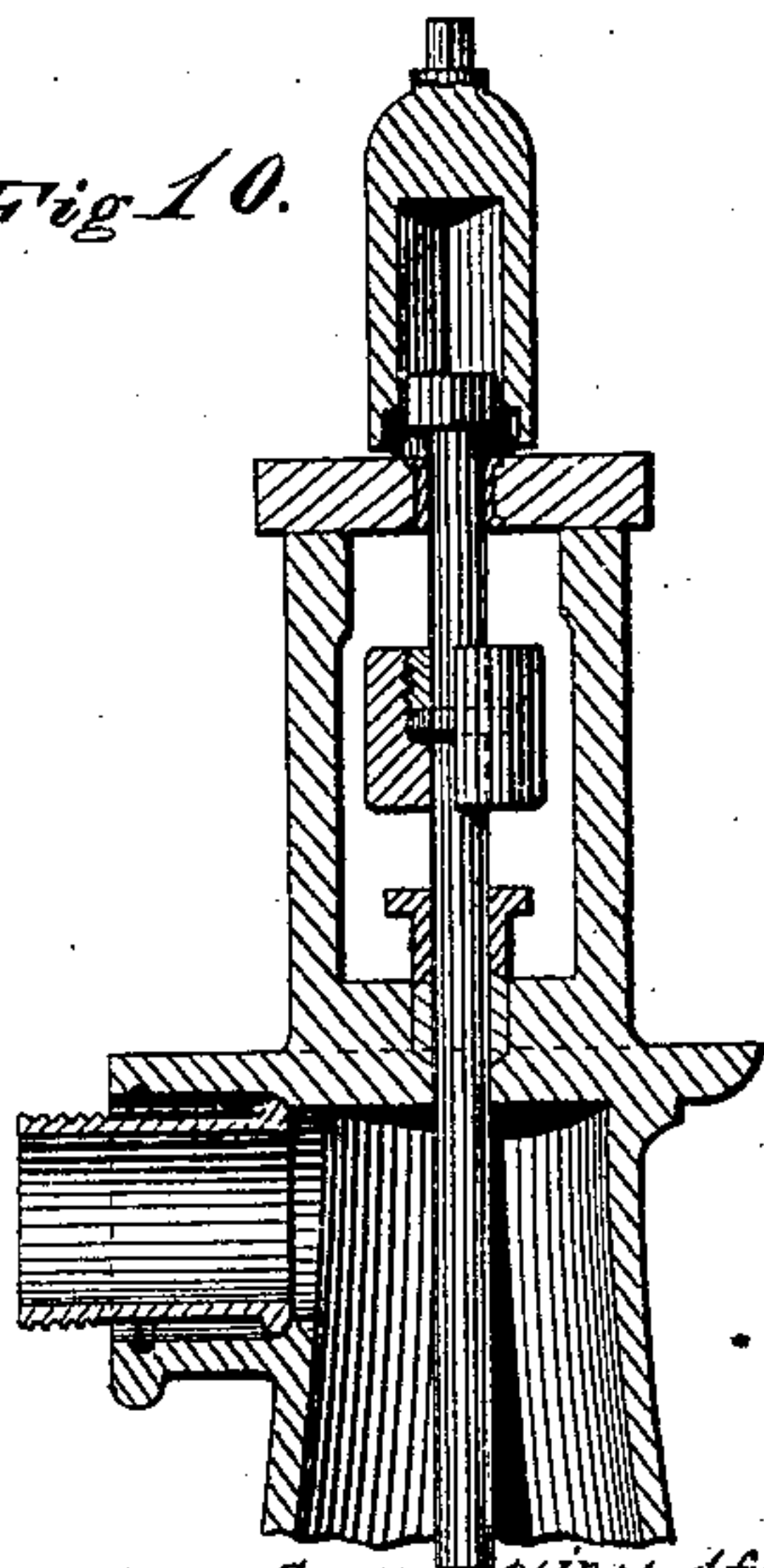


Fig 9.



Scale 6 inches to 1 foot.

Fig 10.



Scale $2\frac{2}{3}$ inches to 1 foot.

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UNITED STATES PATENT OFFICE

DEWITT C. CREGIER, OF CHICAGO, ILLINOIS.

IMPROVEMENT IN HYDRANTS.

Specification forming part of Letters Patent No. **164,149**, dated June 8, 1875; application filed February 23, 1874.

To all whom it may concern:

Be it known that I, DEWITT C. CREGIER, of the city of Chicago, in the State of Illinois, have invented certain Improvements in Hydrants; and I do hereby declare the following to be a full and correct description of the same, reference being had to the accompanying drawings, in which—

Figure 1 is a vertical section of my improved hydrant and attachments. Fig. 2 is a vertical elevation of the hydrant-case. Fig. 3 is a plan view of top of the movable head. Fig. 4 is a plan view of bridge at C, Fig. 1. Fig. 5 is a plan view, showing the arrangement of the glands of the packing-boxes B, Fig. 1. Fig. 6 is a plan view, showing the arrangement of the nozzles and nozzle-valves at A, Figs. 1 and 2. Figs. 7, 8, and 9 are enlarged views of a vertical section, plan, and elevation of the main valve-seat E, also of the waste-valve and chamber F, as arranged at D in Fig. 1. Fig. 10 is a vertical section of the upper end of a single nozzle-hydrant constructed according to my improvements.

The same part is marked by the same letter of reference wherever it occurs in the several figures.

A, Fig. 1, is the receptacle for the branch pipe from the street-main, and the chamber in which is located the supplemental valve. H is a supplemental valve, with a circular stem, B, which is provided with a screw-thread. The interior of said stem is molded square nearly its entire length. I is the seat for the supplemental valve H, and is securely fixed by screw-thread or otherwise to the top of chamber A. J is the main stem or shaft, extending the entire length of the hydrant-case. Its lower end is square, and is fitted to corresponding square hole in the supplemental valve H. Said stem controls the opening and closing of valves H and K and waste-valve G. K is the main valve, composed of an iron disk and leather or other suitable material, which is securely fixed to stem J, and is intended for common use. E is the seat for valve K, and is composed of brass or other suitable material, and properly secured to interior of the hydrant-case O. F is the waste-valve chamber, and is a part of the seat E. (See Fig. 7.) T is the stem of the waste-valve, guided by

lug d, and of suitable length to be actuated by contact with valve K and spiral spring S. G (see Fig. 7) is the waste-valve, located within the tight chamber F, designed to carry off all water remaining above valve K, when the same is closed, through the channel N.

The peculiar advantage of my waste device is, that it can be placed so low in the hydrant-case as to draw off all the water remaining above the closed valve, leaving none of it to freeze.

O O O is the hydrant-case or water-way. Said case is enlarged at and above the surface of the ground, for the purpose of receiving the base-ring and the hose-nozzles. P is a loose ring, forming an ornamental base to the upper portion of the hydrant-case, and is so attached that it may be firmly secured to the sidewalk or surface of the ground, and thereby afford the means of keeping the hydrant-case vertical. Said ring being loose, the hydrant-stem may freely move up or down without damage, whether such movement is occasioned by action of frost, the sinking of the ground, or otherwise.

Q is the ordinary nozzle, provided with a screw-thread, to which hose may be attached, said nozzles extending to the interior of the water-way, and forming the taper seats for the valves. R R are the nozzle-valves, made of suitable material, and accurately fitted to the end of the nozzles and in guides, shown at g. Said valves may be used to shut off or let on water from either one or more nozzles independently of the others. S is one of the stems by which the nozzle-valves R are opened or closed. Said stems are provided with a screw-thread, fitting in the lug of the valve. They are prevented from moving up or down by the collars D D above and below the bridge. The upper end extends through the movable top of the hydrant-case. L L are supports for the bridge. W, Figs. 1 and 4, is a bridge, to which are fixed the parts controlling the several valves, &c. U is a union or coupling, the lower part of which is rigidly fixed to the stem J. To the upper portion of said union a rotating screw, V, is connected by a collar and bush, allowing it to rotate independently of the union U. The upper end of the rotating screw is square, and fits in a correspond-

ingly-shaped opening in socket X. The latter rests upon bridge W, and extends through movable top Y, which is provided with guards C C C, to protect the valve stems from being tampered with or injured. *z* is a guide-bolt tapped into support L, and extends into the slot in union U, serving to prevent said union from turning, but allowing the same to freely move up or down.

The object of the arrangement and combination of parts hereinbefore described is, to produce a fire hydrant or plug having any desirable number of openings for the attachment of hose, either one or more of which may be opened or closed independently of the others; also, a hydrant-plug which may be removed from or replaced in its site without closing the stop-cocks in the street-mains, or shutting off the water in any portion of the district in which said hydrant may be located, thus avoiding danger in case of a fire occurring, great annoyance to water-takers, as well as the inconvenience and expense necessary to effecting a similar object by placing (as is sometimes done) a stop-valve in the main pipe adjacent to each hydrant.

Chamber A, with valve H and seat I, may be used as an effective blow-off for cleaning main pipes, by first removing case and opening the valve.

The operation necessary to effect the two principal objects referred to above is as follows:

First, when the hydrant is in order, and is to be used by the fire department or others, a suitable wrench is applied to the end *f* of socket X. The rotation of this part imparts similar motion to screw V, which, by aid of nut n bridge W and guide-bolt *z*, causes union U and stem J to descend in a straight line, thereby opening main valve K, and allowing waste-valve G, Fig. 7, to close by the tension of spring 8. The supplemental valve H not having been disturbed, the water from the main supply-pipe flows through and fills the entire hydrant-case O. The cap *t*, Fig. 2, is removed from one or more of the nozzles 2, and the hose attached thereto. A wrench is then applied to the end *f* of stem S. By proper rotation, nozzle-valve R is caused to rise by the operation of the male and female screw on the stem and in the lug on the valve. The same operation takes place upon each attachment of a hose, and a reverse operation for each detachment of a hose. The waste-valve G is inclosed in a tight chamber cast on the main valve-seat E, thus protecting it from damage, as already stated. When the

main valve descends, the spiral spring closes the waste-valve, and prevents water from flowing through the orifice N. As the main valve K is drawn to its seat, it comes into contact with the stem T of the waste-valve, overcoming the tension of the spring, and affording the channel shown by arrows in Fig. 7. Such positive mechanism insures a reliable discharge of the water, which would otherwise remain in the hydrant-case above valve K, and subject the structure to danger by frost.

Second, should the hydrant become deranged, or for any cause require removal, the nuts from bolts 4, 5, 6, &c., are detached, and the movable head Y removed. The guide-bolt *z* is withdrawn from the slot in union U, and a piece of round iron of suitable size inserted in small holes in the union, which, being turned in the right direction, revolves the stem J throughout its length, thereby transmitting rotary motion to the supplemental valve H, which, by the operation of the square end of stem J in the correspondingly-formed socket, and the screw-thread on stem B, rises to, and is firmly held in contact with, seat I, whereby the water from the main pipe is shut off.

If the hydrant-case is surrounded by the usual box, the bolts 1, 2, 3, &c., Fig. 2, are removed, and the entire hydrant-case and its appendages may be removed.

To put the hydrant back, insert the end of stem J in the square hole of valve H, replace bolts 1, 2, 3, &c., screw valve H to its former position, readjust the guide-bolt *z*, close valve K, replace movable head Y, and the hydrant is ready for use.

Having, in the foregoing specification, fully described my invention, what I claim as new therein, and desire to secure by Letters Patent, is—

1. The combination, with the main seat E, having the chamber F, channel N, and lug *d* cast therewith, of the stem T and spring 8, substantially as and for the purpose described.

2. The combination of the socket X, rotating stem-screw V, union U, guide-bolt *z*, and main stem J, substantially as and for the purpose herein stated.

3. The top Y, provided with the guards C C C, for the purpose of protecting the ends of the valve-stems S and socket X, in the manner set forth.

The above specification of my said invention signed and witnessed at Chicago.

DEWITT C. CREGIER.

Witnesses:

ROBT. FARON,
HENRY R. WARD.