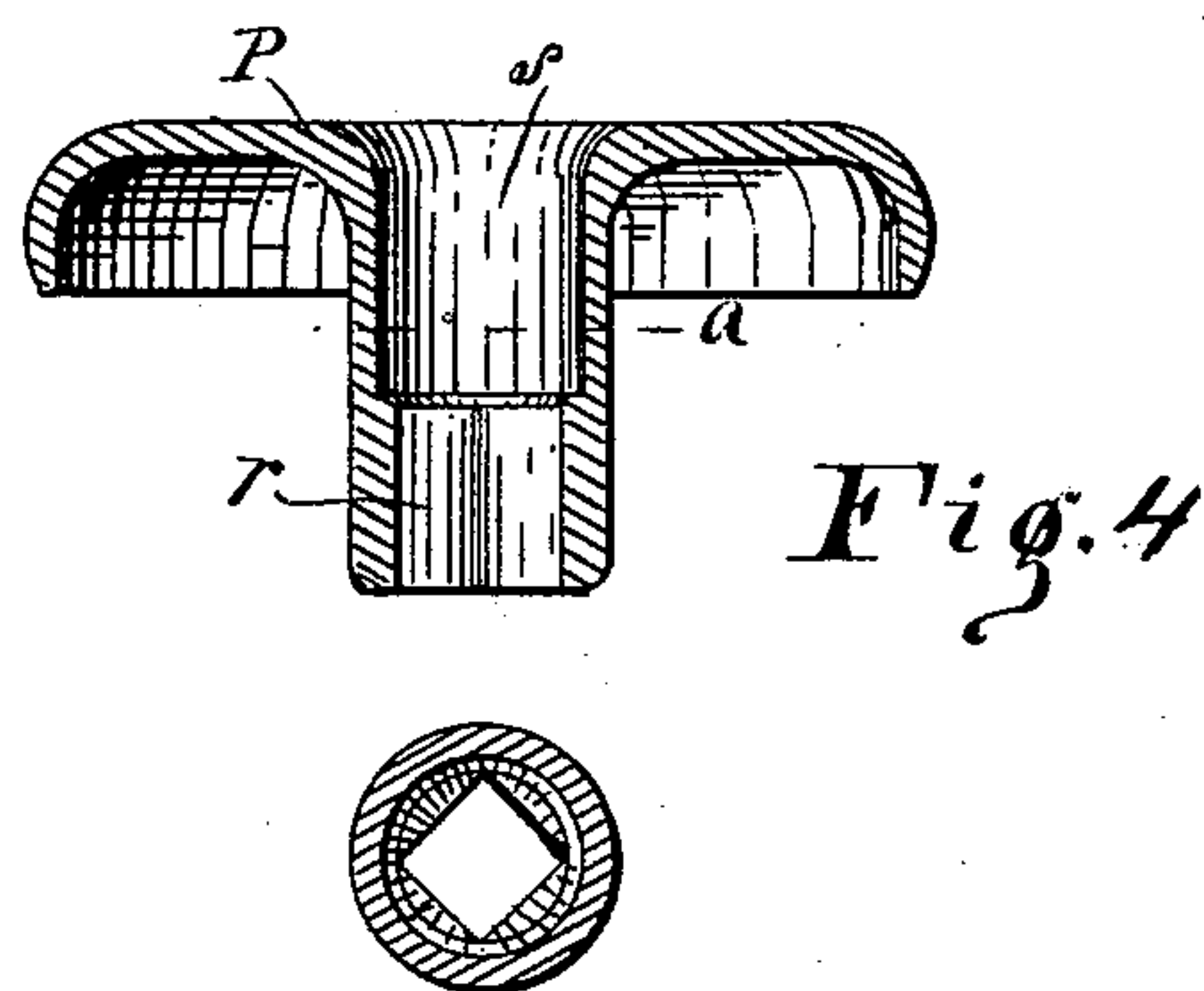
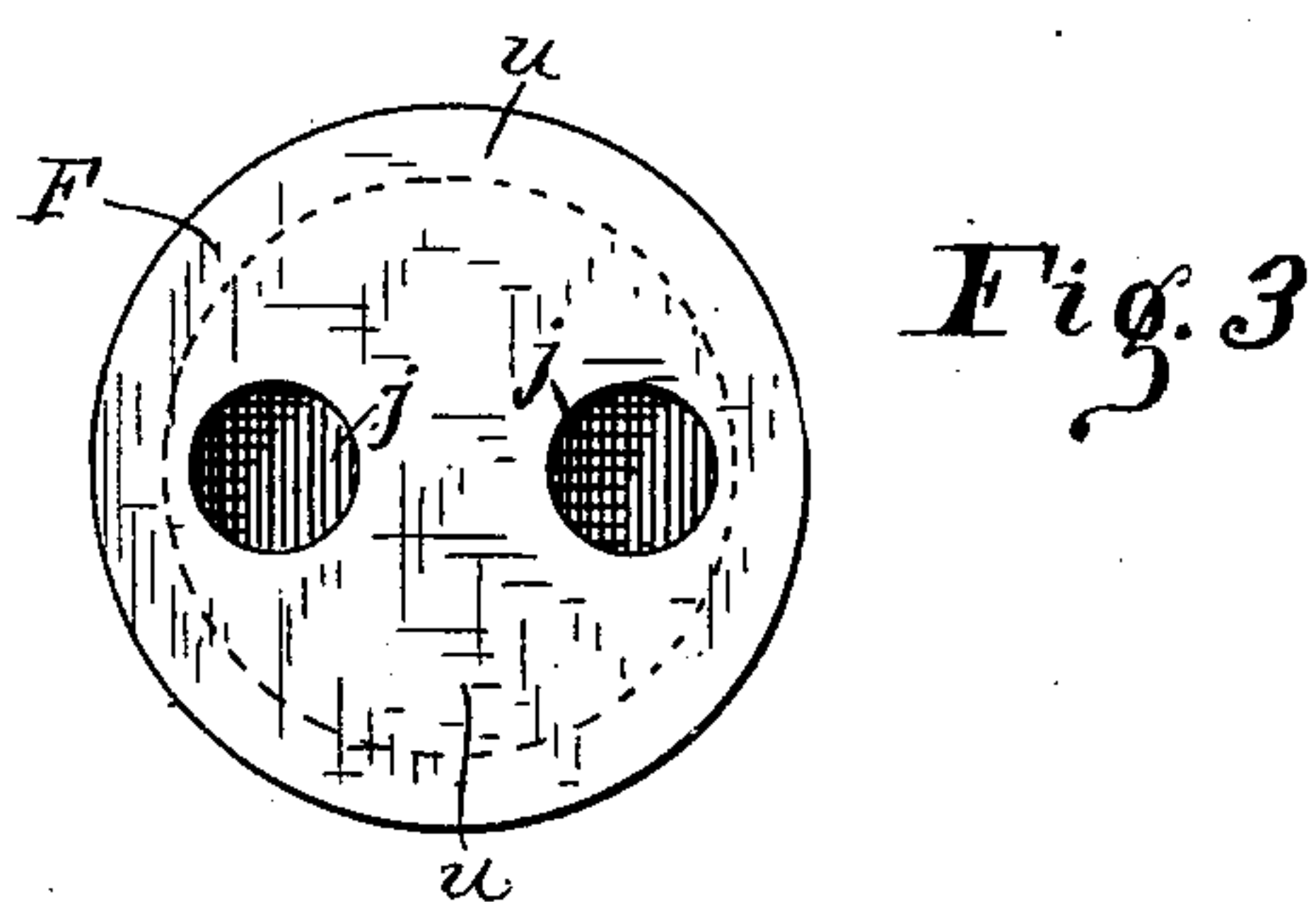
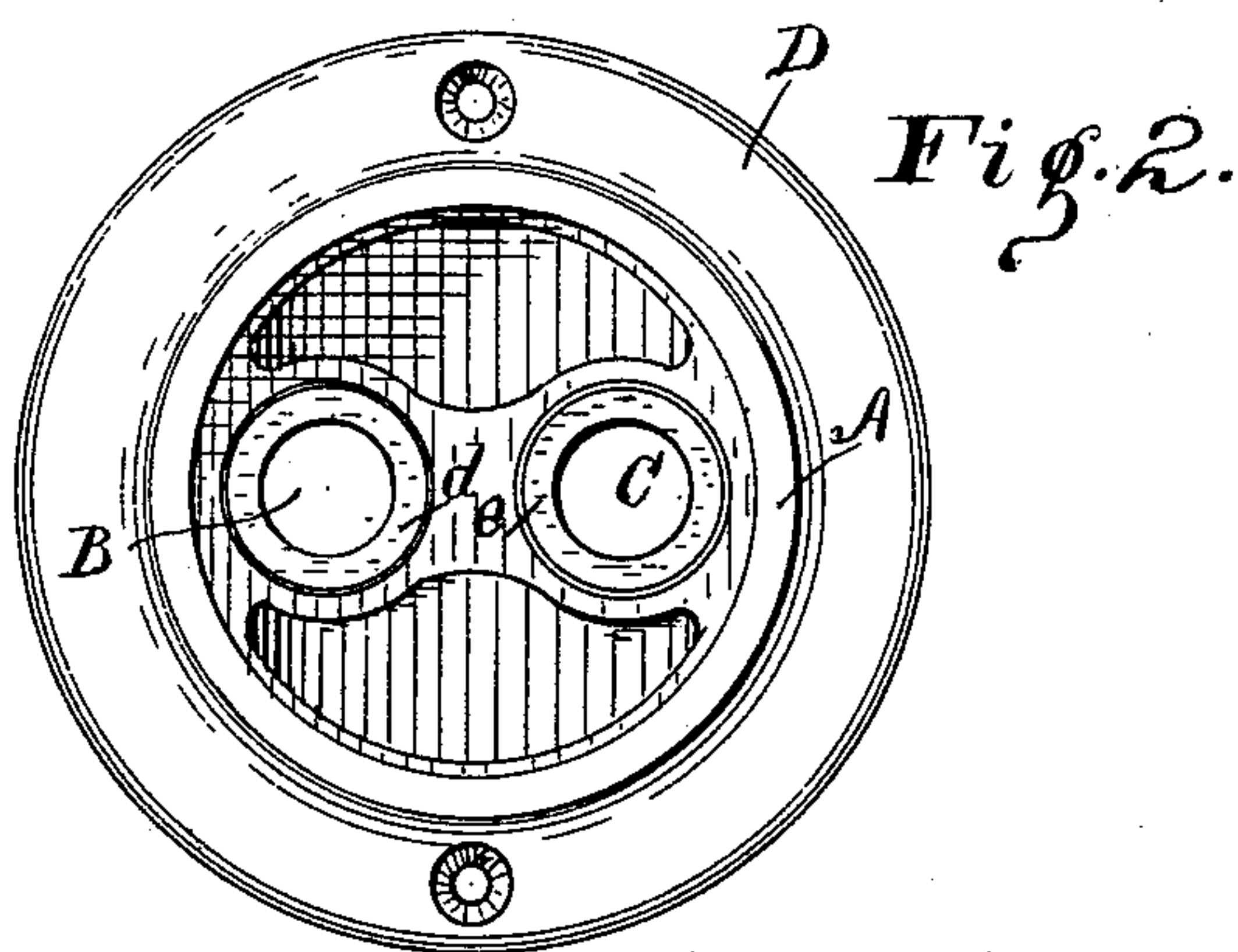
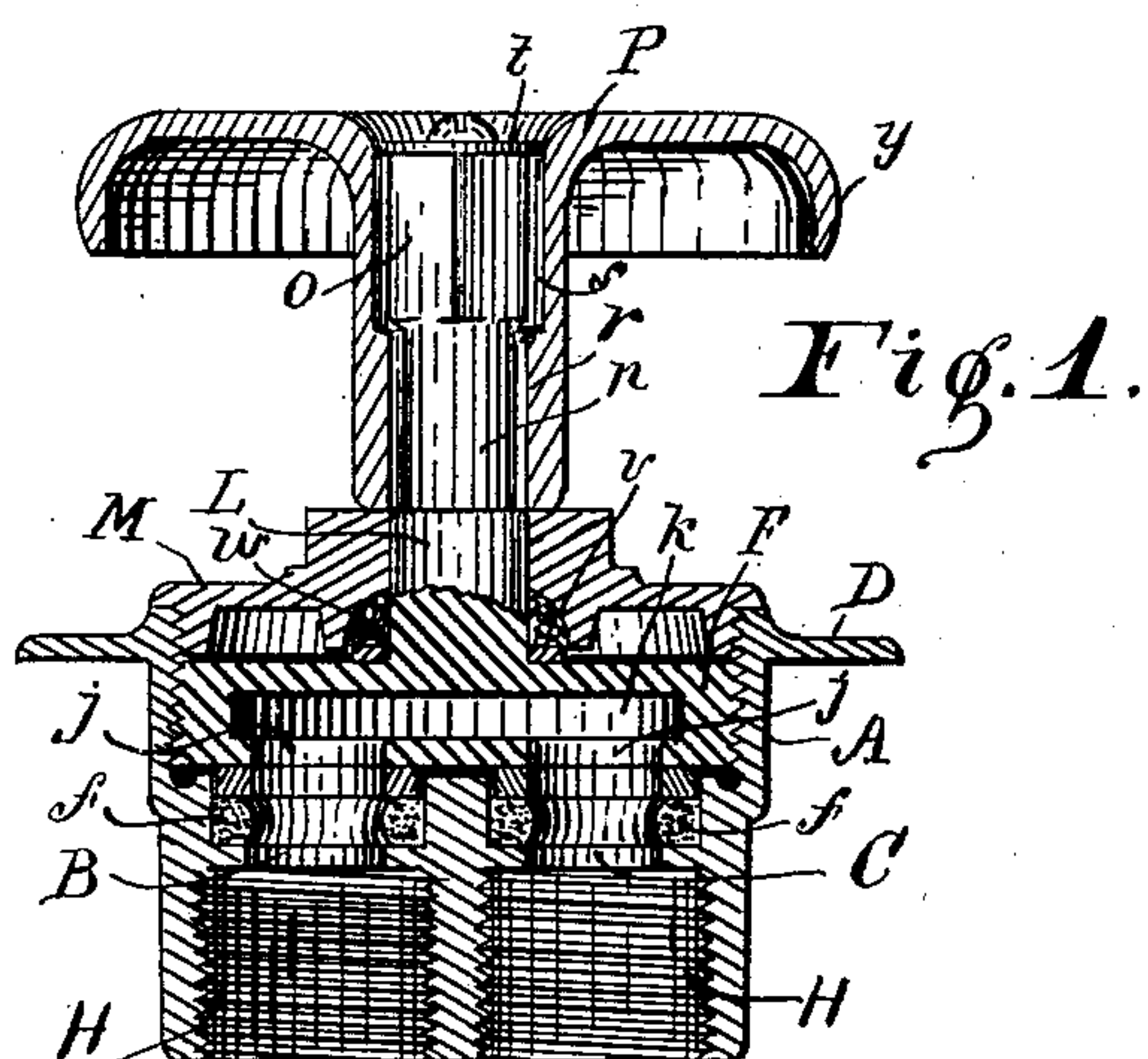


(No Model.)

H. P. HOOD
VALVE.

No. 434,598.

Patented Aug. 19, 1890.



Witnesses
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Inventor
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UNITED STATES PATENT OFFICE.

HARRISON P. HOOD, OF INDIANAPOLIS, INDIANA.

VALVE.

SPECIFICATION forming part of Letters Patent No. 434,598, dated August 19, 1890.

Application filed September 30, 1889. Serial No. 325,486. (No model.)

To all whom it may concern:

Be it known that I, HARRISON P. HOOD, a citizen of the United States, residing at Indianapolis, in the county of Marion and State of Indiana, have invented a new and useful Improvement in Valves, of which the following is a specification.

My invention relates to an improvement in the disk-valve for which Letters Patent of the United States No. 375,872 were issued to me January 3, 1888.

The objects of my present improvement are, first, to so construct the valve-case that it shall be adapted more particularly to be set in a floor or other surface for use on pipes for distributing fuel-gas in those situations where it is desirable that the pipes should be beneath the floor, or otherwise arranged out of sight, while the valve is arranged conveniently at hand and in sight, and all its working parts be accessible without disturbing the pipe-connections or the connection of the valve-case with the floor, and, second, to provide a key for turning the valve, which shall be connected with the valve-stem in such a manner as to be inoperative when in its normal position, so as to guard against accidental turning of the valve, all as hereinafter fully described.

The accompanying drawings illustrate my invention.

Figure 1 represents a central vertical section of one of my valves having my improved key and adapted to be set into a floor and to receive two vertical pipe-sections through which the gas enters and leaves the valve below the surface of the floor. Fig. 2 represents a plan of the valve-case, the cap and valve having been removed. Fig. 3 is a plan of the under side of the valve-disk. Fig. 4 represents a longitudinal section and a cross-section of the key at *a*.

A is the valve-case, which consists of a short cylinder having one closed end, which is provided with two eccentrically-arranged ports B and C. Case A is provided in the form shown in Fig. 1 with a radially-projecting flange D, formed integral with the case, for the purpose of securing the case to the floor. In some places where the pipe may be easily supported from below this flange may be omitted. Ports B and C are provided with

annular valve-seats *d* and *e*, which are preferably mounted on a yielding washer *f*, as shown in Fig. 1, or they may be made integral with the case. Screw-threaded sockets H H extend out from the case opposite and concentric with the ports B and C, and are adapted to receive the ends of two parallel pipes arranged side by side and forming part of the gas-supply line. The relative arrangement of the cylindrical case A and the pipe-sockets is such that the extreme diameter of the two sockets combined is within the outline of the cylindrical portion of the case, so that the pipe-sockets will pass through a hole bored to fit the case.

The interior periphery of case A is turned true, and is screw-threaded to form a bearing for the valve-disk F, and the periphery of the valve-disk is correspondingly threaded, so that as the valve is turned in the direction of closing it also moves longitudinally toward the valve-seats. The construction in this respect, and also the construction of the yielding valve-seats, is the same as that shown in Letters Patent No. 375,872, issued to me January 3, 1888.

The under surface of the valve-disk F is turned true and ground so as to fit closely to the valve-seats and cover the ports, and is provided with two eccentrically-arranged longitudinal openings *j j*, adapted, when the valve is properly turned, to register with and establish communication between the ports B and C.

For the purpose of keeping the gas in a great measure from the upper part of the valve-case, I deem it preferable to make the valve-disk hollow, so that the openings *j j* need not extend entirely through the disk, but only through its lower side, and both communicating with the interior chamber *k* of the valve-disk.

The valve-stem L is formed integral with the valve-disk and extends out through the cap M, which closes the open end of the valve-case, the joint being above the flange D. The cap is provided with a recess *v* to receive the stem-packing *w*. In many cases it is desired to have the wrench attached to the valve-stem so that it cannot be readily removed, but will at the same time be inoperative in its normal position, so as to prevent children

and others not acquainted with its construction and arrangement from turning the valve. For this purpose I construct the key and the valve-stem as shown in Fig. 1. The portion
 5 *n* of the valve-stem which projects above the cap is cylindrical and its outer portion *o* is square. The interior of the barrel of the key *P* is square in section at *r* and cylindrical at *s*, the arrangement being such that when the
 10 key stands in its normal position, with its lower end resting on the cap *M*, the square portion of the key is opposite the cylindrical portion of the stem and turns freely thereon without turning the valve; but when the key
 15 is raised until stopped by the washer *t*, secured to the top of the stem, the square part of the key is engaged with the squared portion of the valve-stem, and the valve may then be turned, the key returning to its normal
 20 position when released. Washer *t* fits easily the cylindrical interior *s* of the key, and forms a guide which holds the key steadily upright when in its normal position. In case it is thought desirable, under certain
 25 circumstances, to remove the key when the valve is closed, washer *t* may be easily removed. The key can then be taken off and an ordinary key applied to the square portion of the stem. The barrel of the key may
 30 be provided with a hand-wheel *y* or the ordinary flat wings for turning it.

In operation, the valve-disk being in the position shown in the drawings, openings *j j* therein register with the ports *B* and *C* and
 35 the gas or other fluid flows from one port to the other through the interior of the valve, either port being the inlet and the other the outlet. By turning the valve-disk a quarter-revolution the blank surfaces *u u* of the disk
 40 are brought over the ports and the disk is at the same time forced against the valve-seats *d* and *e* by the screw-threads on its periphery. By this construction a valve for natural gas is formed in which sediment or carbon cannot
 45 accumulate on the valve-seats or the valve-seats become strained out of shape.

The peculiar construction of the valve-case adapts it to be set in a hole bored in the floor of the same diameter as the exterior of the cylindrical portion *A* of the case. The flange
 50 *D* rests on the floor, is secured thereto, conceals the opening therein, and serves to support the inlet and outlet pipes, which are screwed into the sockets *H H* and are entirely concealed beneath the floor. The relation of
 55 the parts is such that all joints liable to leak are in sight and readily accessible for testing, and the cap can at any time be removed and the stem-packing be renewed without interfering with the action of the valve, or
 60 all the working parts can be removed and examined without going below the floor or disturbing the connection of the valve-case with the floor or with the pipes, which results are of great advantage in the use of fuel-gas. 65

I claim as my invention—

1. In a valve, the combination, with the valve-disk having two eccentrically-arranged longitudinal openings, of the above-described valve-case consisting of the cylindrical portion
 70 *A*, forming a bearing for the disk, an inlet-port and an outlet-port arranged on opposite sides of its axis, pipe-sockets *H H*, arranged parallel with each other and concentric with said ports, and the radial flange *D*,
 75 said cylindrical portion having its flange and pipe-sockets formed integral therewith, as set forth.

2. In a valve, the combination, with the valve-disk having two eccentrically-arranged
 80 longitudinal openings, of the valve-case consisting of the cylindrical portion *A*, forming a bearing for the disk, an inlet-port and an outlet-port arranged on opposite sides of its axis, and pipe-sockets *H H*, arranged parallel
 85 with each other and concentric with said ports, said cylindrical portion having its pipe-sockets formed integral therewith, as set forth.

HARRISON P. HOOD.

Witnesses:

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