

(No Model.)

D. KENNEDY.
VALVE INDICATOR.

No. 404,844.

Patented June 11, 1889.

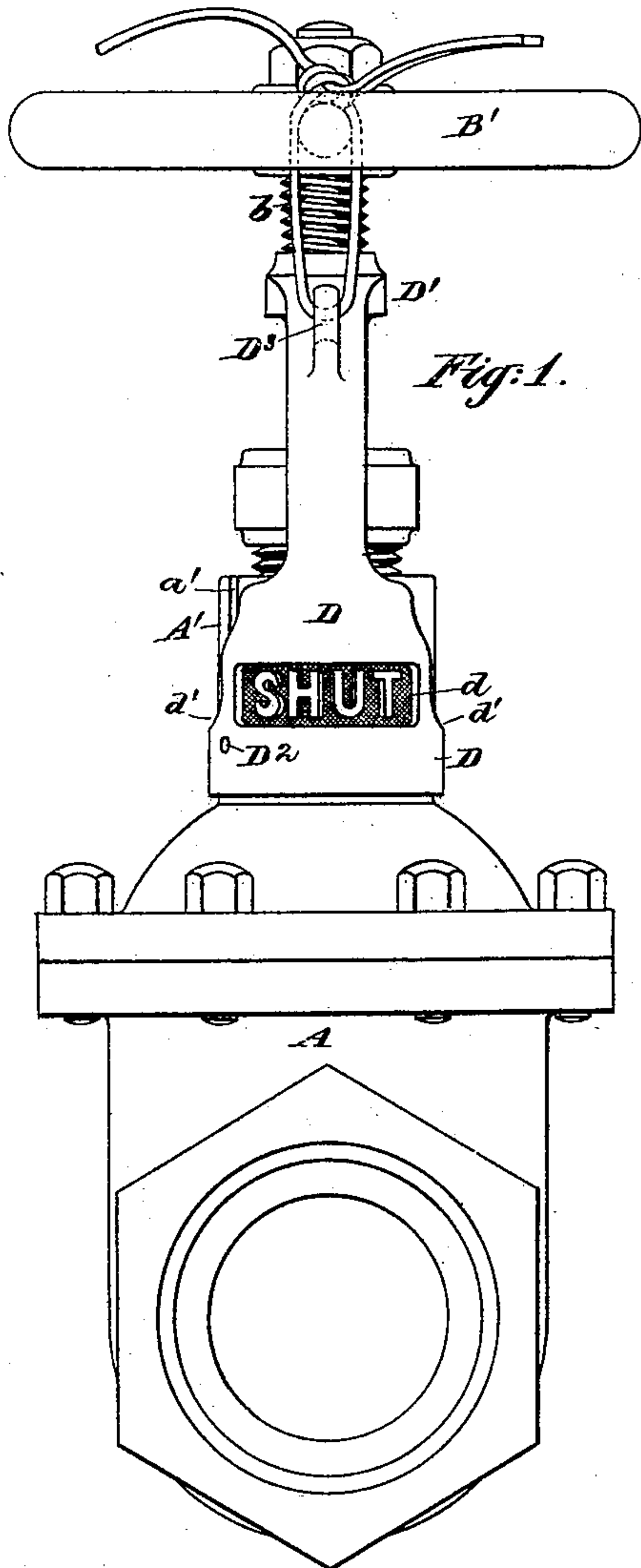


Fig. 1.

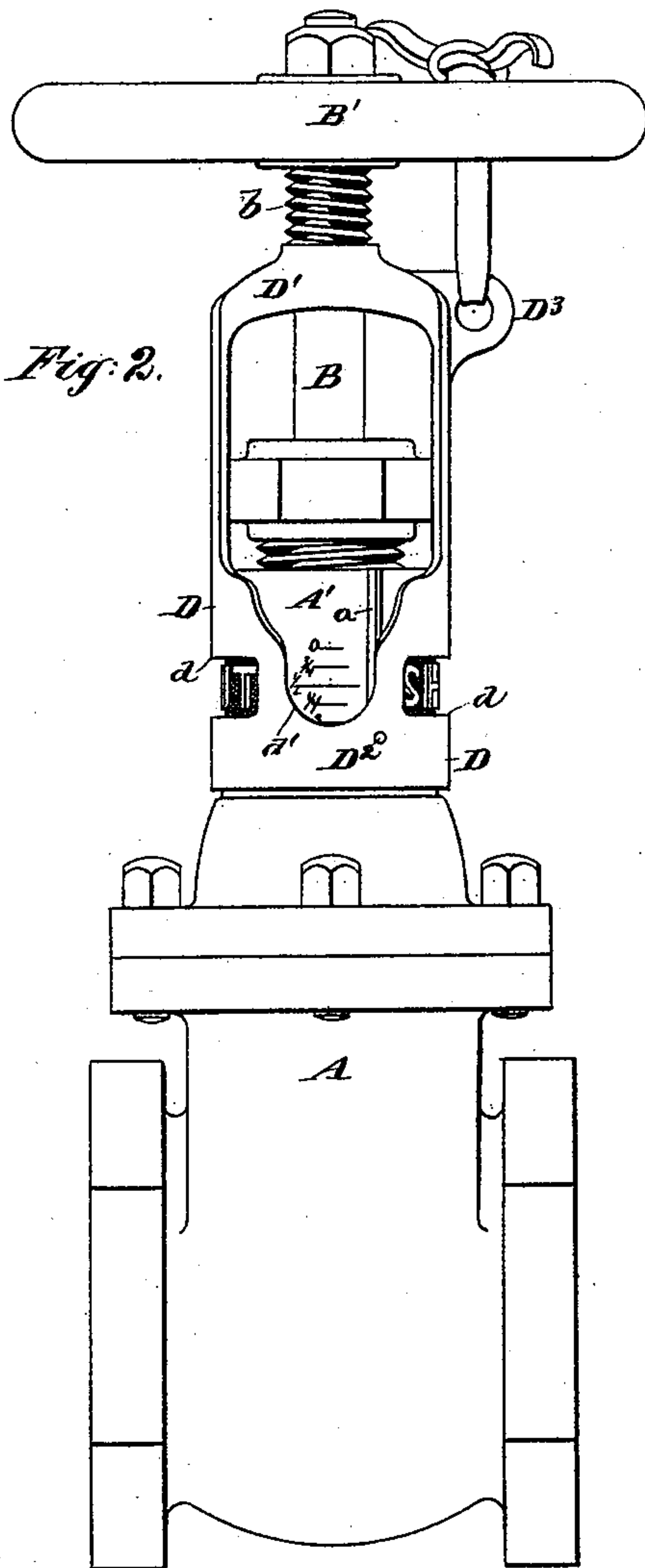


Fig. 2.

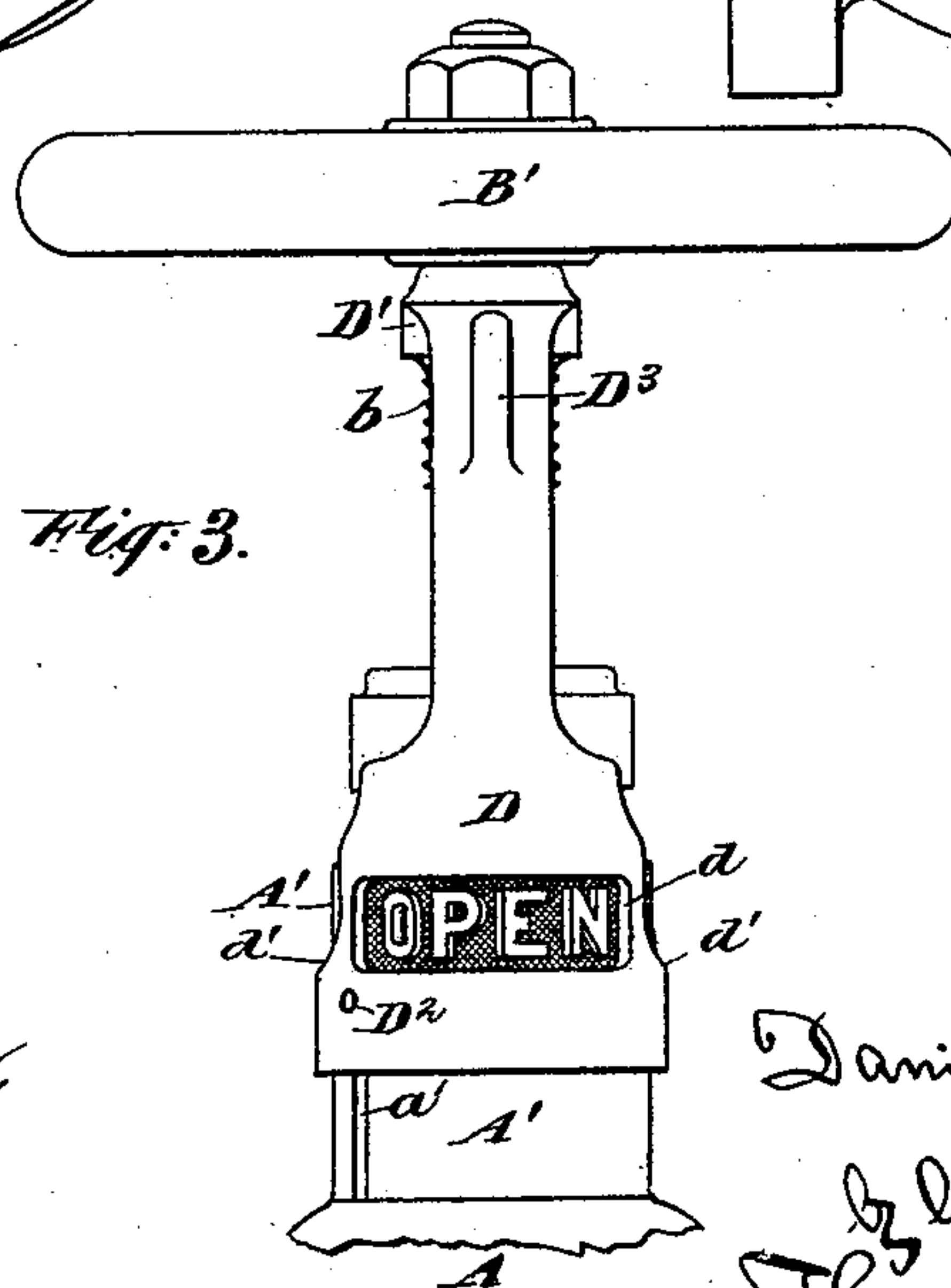


Fig. 3.

Witnesses:
Charles R. Searle,
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Inventors:
Daniel Kennedy
by his attorney
Thomas D. Newell

UNITED STATES PATENT OFFICE.

DANIEL KENNEDY, OF BROOKLYN, NEW YORK.

VALVE-INDICATOR.

SPECIFICATION forming part of Letters Patent No. 404,844, dated June 11, 1889.

Application filed August 30, 1888. Serial No. 284,153. (No model.)

To all whom it may concern:

Be it known that I, DANIEL KENNEDY, of Brooklyn, in the county of Kings and State of New York, doing business in the city of New York, have invented a certain new and useful Improvement in Valve-Indicators, of which the following is a specification.

I term the improved valve a "fire-valve."

The invention may apply to the whole line of stop-valves operated by a revolving stem. I will describe it as applied to the valve set forth in the patent to me dated July 8, 1884, No. 301,724. In that valve the operating shaft or stem does not rise and sink, but as the stem is turned in one direction or the other a screw-thread on the stem causes the two parts of the valve to be raised and lowered to an extent a little greater than the diameter of the pipe. If the pipe is four inches in diameter, the valve should traverse about four and a half inches.

The means hitherto employed to indicate the position of the valve, whether open or shut or partially shut, have been too slight and too easily deranged to constitute a reliable attachment. I have discovered that it is practicable to make such indication by the movement of a sleeve surrounding the upper portion of the valve-casing, and which sleeve may be made of any desired thickness, so as to endure as rough handling and be as little liable to derangement and destruction as the other portions of the valve.

According to my present invention the bonnet of the valve is formed with a boss, which is turned cylindrically. It has one longitudinal groove milled or otherwise smoothly produced. On each of two opposite faces of the boss the words "Open" and "Shut" are presented one above the other in letters, the exterior faces of which letters form a part of the cylindrical surface of the boss, the spaces between and around the letters being sunk and blackened. The boss is loosely inclosed by a movable sleeve or shield. The operating-shaft is provided with a fine screw-thread just under the hand-wheel. Upon this is matched a screw-threaded yoke, which is formed in one with or otherwise attached to the sleeve. The provision insures that the sleeve will be raised and lowered to a small extent in times corresponding to the greater

raising and lowering of the valve. The sleeve is provided with a pin projecting inward and engaging in the straight longitudinal groove. It is also provided with two horizontal slots on opposite sides, each arranged to show the corresponding lowermost word, "Shut," when the valve is shut and the uppermost word, "Open," when the valve is open.

The accompanying drawings form a part of this specification and represent what I consider the best means of carrying out the invention.

Figure 1 is an elevation of the valve in the shut condition. Fig. 2 is a corresponding view at right angles. Fig. 3 is an elevation corresponding to the upper portion of Fig. 1, but showing the parts in the open condition.

Similar letters of reference indicate corresponding parts in all the figures where they occur.

A is the body of the valve-case, having a bonnet secured by bolts and adapted to allow access, and matching over the parts of the valve not shown and engaging with screw-threads on the valve-stem. (Not shown.) A boss extends upward, as indicated by A', provided with a vertical groove, as indicated by a'.

B is the operating-stem, which actuates the two parts of the valve. All the parts not otherwise described will be understood as constructed and arranged to operate in the manner set forth in my patent dated July 8, 1884, No. 301,724. B' is a hand-wheel by which the stem B is operated. On the stem B, a little below the hand-wheel B', is a fine-cut screw-thread b.

The exterior of the boss A' is finished with the words "Open" and "Shut" arranged as shown on two opposite faces, the two which are likely to be presented to view when the valve is in use. The spaces between and around the letters are sunk and blackened, so that the letters may be recognized by the sense either of sight or feeling when they are exposed.

D is a sleeve, of brass or other suitable material, inclosing the cylindrical boss and adapted to slide up and down thereon. Its upper end is formed into a yoke D', which is internally screw-threaded and matches the screw-threads b, with which it is engaged. A

pin D^2 , set in the interior of the sleeve D , enters the longitudinal groove a' and prevents the sleeve from turning, but allows it to be moved up and down by the action of the screw-thread b . Two considerable holes or slots d are cut through the sleeve D in the positions to expose the word "Shut" when the valve is closed, and to expose the word "Open" when the valve is open. At two other points on the sleeve are recesses extending from the upper edge downward, as indicated by d' . These recesses uncover graduations cut or otherwise produced in the corresponding portions of the boss. The rising and sinking of the sleeve by uncovering more or less of the graduated surface indicates what is the exact position of the valve when it has been set only partly open.

A perforated lug D^3 on the yoke D' receives a thong of leather M or a flexible cord of any other material, which, when the valve is set in the required position, open or shut, is tied to the nearest adjacent arms of the hand-wheel B' . This mode of securing the valve in any required position has the advantage that it interposes a decided stop to prevent the valve being turned by accident, and goes far to insure against the valve being turned by carelessness or wantonness, while it can be readily untied, or in an emergency promptly cut by a pocket-knife by any person without waiting for a key.

There are many situations eminently in the fire apparatus of large manufactories, where the valves are in plain sight, but as ordinarily constructed and equipped do not indicate by any external sign whether the valves are in the open or closed condition. It is easy to make a valve indicate its position when the stem is allowed to rise and sink; but this is objectionable not only on account of the increased room required to operate the valve, but also on account of the increased risk of accidental strains applied when the stem is extended upward, which are liable to bend the stem and render the valve inoperative. This invention does not require the valve-stem to rise and sink.

The words for indicating the open and shut position, and also the graduations for indicating the intermediate positions, are plainly visible to the eye, and are also in emergencies readily recognized by the sense of feeling. Any one running to the valve with an imperfect light, or in absolute darkness, can determine at once by the sense of feeling whether the valve is open or closed. This is of great importance in fire apparatus in some situations.

Modifications may be made without departing from the principle or sacrificing the advantages of the invention. I can use the apparatus with only one set of the words "Open" and "Shut." I can use a single letter in place of each word, as "O" for "open" and "S" for "shut." I can use one word in full, the other being indicated by a single letter.

This may be of advantage to facilitate determining the position by feeling.

Instead of forming the longitudinal groove in the boss and using a thin sleeve with a pin projecting from the sleeve into the groove, I can use a thicker sleeve and produce the groove in the interior of the sleeve, causing it to receive a pin tapped or otherwise set in the boss.

It will be observed that the general features of the valve do not have to be changed to adapt it to this invention. It is only necessary to take care that the boss is adapted to allow a sleeve to move up and down on it, and that the exterior of the cap, which compresses the packing around the stem, is sufficiently small to be turned within the yoke D' . The sleeve D may be narrower, and the yoke D' attached at such points that the entire sleeve may serve as a shield. In such case, the word "Open" should be below the word "Shut," and the shield, in being raised, will cover the uppermost and uncover the lower, the opposite result, of course, occurring when the shield is moved the other way.

The graduations on the boss A' may be varied, or may in many cases be omitted entirely. It is for many purposes, and especially for fire apparatus, mainly important to be able to instantly and certainly set the valve wide open when desired, and to certainly know at once whether it is open or closed. I attach importance to the fact that the shield D is in the form of a sleeve loosely embracing the boss A' , because it gives great strength and certainty of being kept in condition for use under all circumstances. I attach importance to the leather thong through the lug D^3 , because it may be easily destroyed in an emergency, but will hold the valve in any ordinary condition.

I claim as my invention—

1. In a valve having a casing A and boss A' , with operating shaft B , having a screw-thread b , the combination therewith of a sleeve D , surrounding such boss and connected therewith by the longitudinal groove a' and pin D^2 , so as to allow longitudinal motion, and the yoke D' , connecting such sleeve with the thread b , all arranged for joint operation, as herein specified.

2. The easily-destroyed fastening M , in combination with the casing A , stem B , having hand-wheel B' , and screw-thread b , and with the sleeve D , yoke D' , and lug D^3 , and with the groove a' and pin D^2 , for holding the sleeve against rotation, all substantially as herein specified.

In testimony whereof I have hereunto set my hand, at New York city, this 29th day of August, 1888, in the presence of two subscribing witnesses.

DANIEL KENNEDY.

Witnesses:

W. B. GONSALVES,
H. A. JOHNSTON.