

No. 837,063.

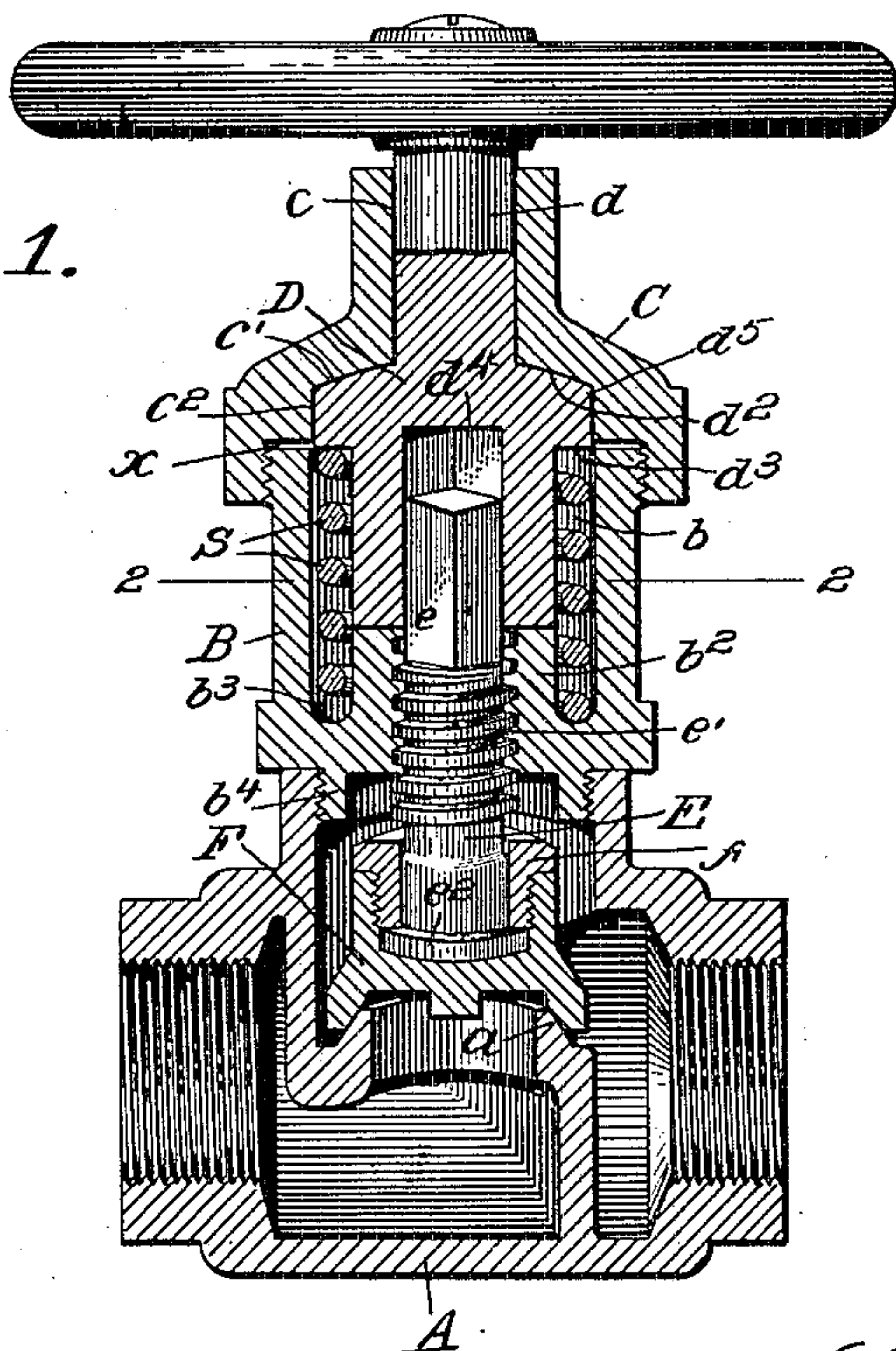
PATENTED NOV. 27, 1906.

C. HITE & J. ROBERTSON.

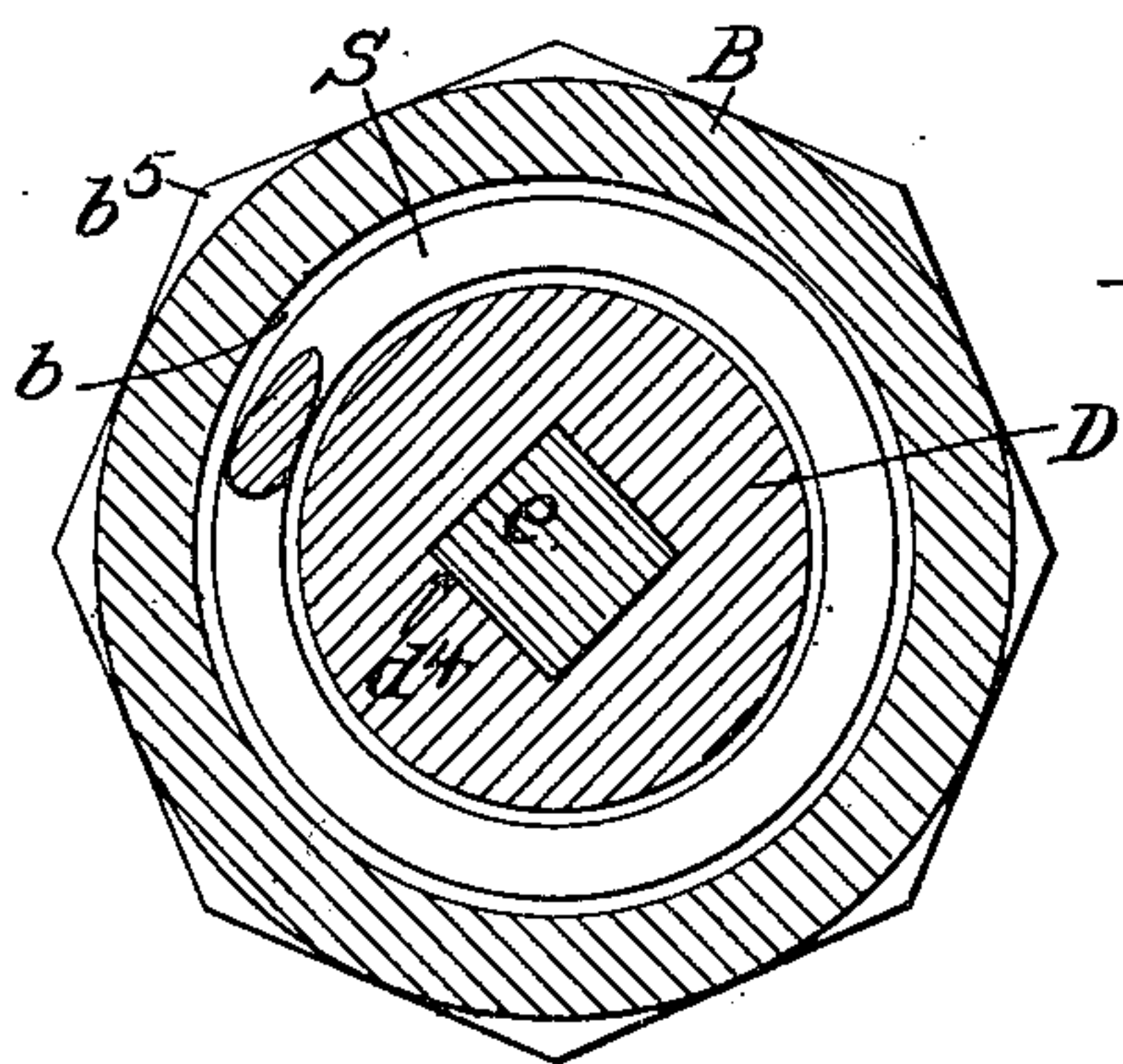
VALVE.

APPLICATION FILED NOV. 8, 1905.

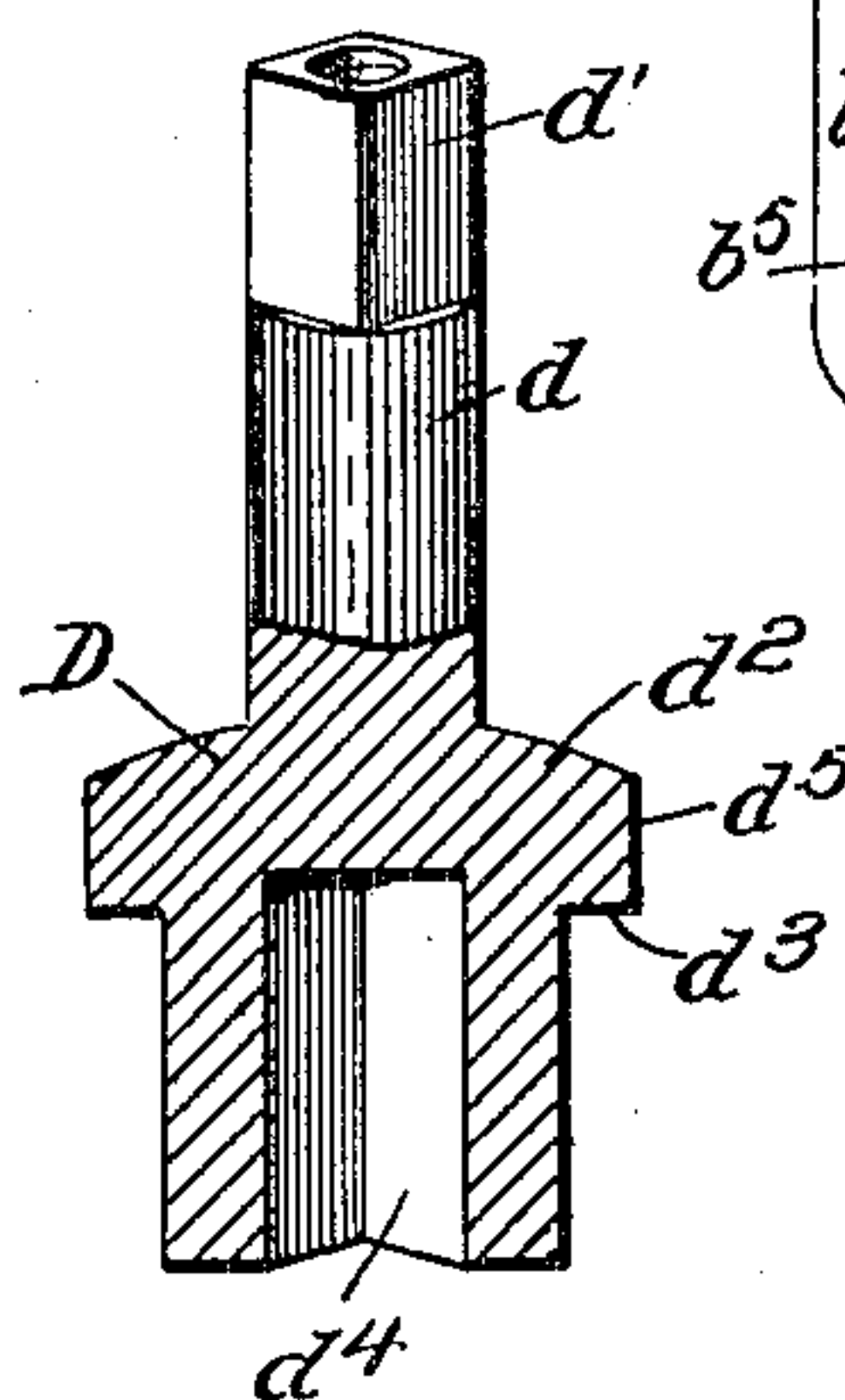
*Fig. 1.*



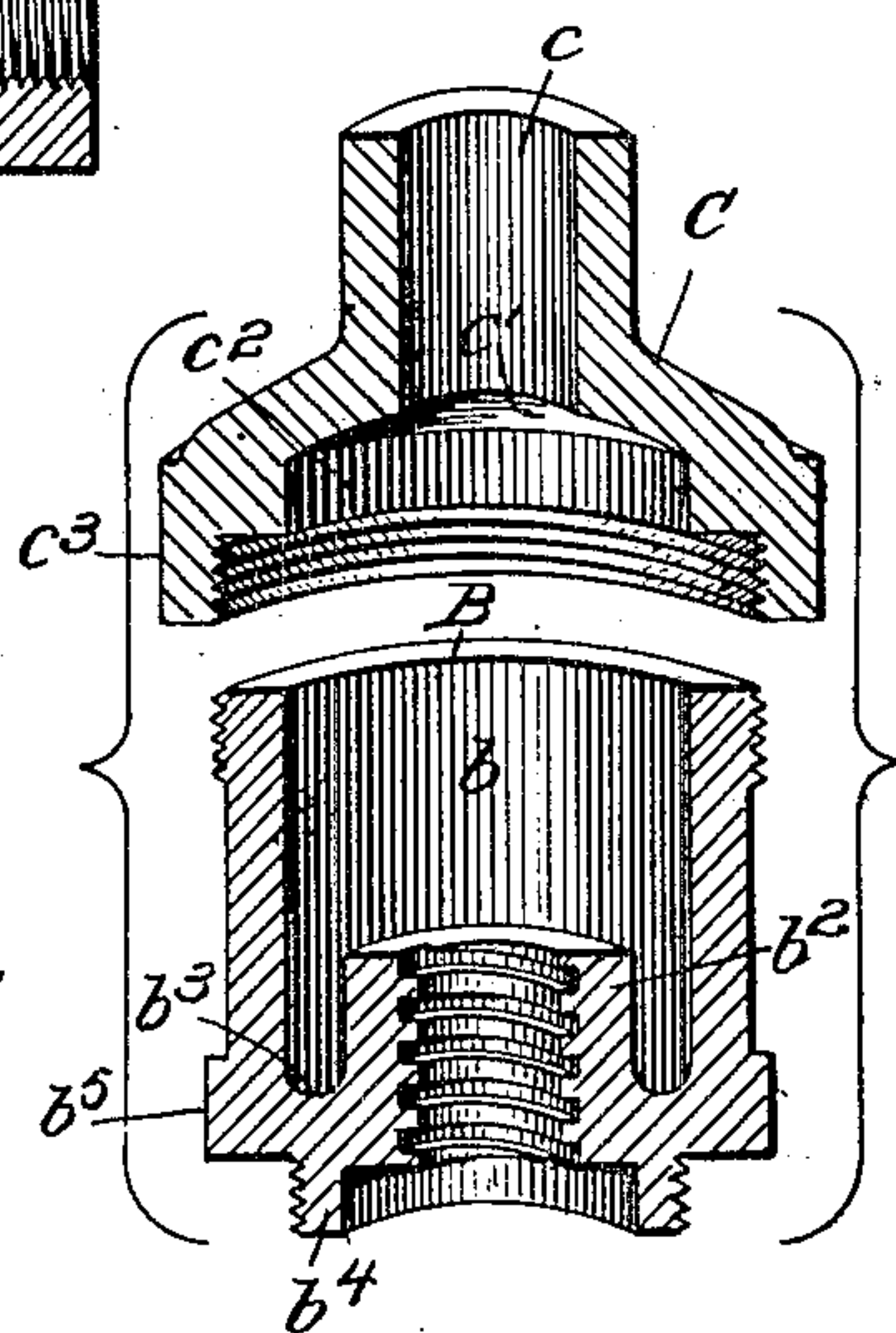
*Fig. 2.*



*Fig. 4.*



*Fig. 3.*



Witnesses  
*F. L. Gibson.*  
*R. S. Bishop*

Inventors  
*Charles Hite*  
*James Robertson.*  
*By Davis & Davis*  
 Attorneys.



# UNITED STATES PATENT OFFICE

CHARLES HITE AND JAMES ROBERTSON, OF PITTSBURGH, PENNSYLVANIA.

## VALVE.

No. 837,063.

Specification of Letters Patent.

Patented Nov. 27, 1906.

Application filed November 8, 1905. Serial No. 286,397.

*To all whom it may concern:*

Be it known that we, CHARLES HITE and JAMES ROBERTSON, citizens of the United States of America, and residents of Pittsburgh, county of Luzerne, State of Pennsylvania, have invented certain new and useful Improvements in Valves, of which the following is a full and clear specification, reference being had to the accompanying drawings, in which—

Figure 1 is a vertical sectional view showing our invention applied to a valve of ordinary construction; Fig. 2, a transverse section on the line 2-2 of Fig. 1; Fig. 3, a sectional perspective view of the casing and the cap detached; and Fig. 4, a detail perspective, partly in section, of the supplemental stem portion.

The object of this invention is to provide a simple attachment for valves which is adapted to be attached to valves of the ordinary construction to take the place of the usual packing-box now universally employed, the attachment being so constructed that it does away with the necessity of packing the stem, as more fully hereinafter set forth.

To the accomplishment of this object and such others as may hereinafter appear, the invention consists of the parts and combination of parts hereinafter fully described, and particularly pointed out in the appended claims, reference being had to the accompanying drawings, forming a part of this specification, in which the same reference characters designate like parts throughout the several views.

Referring to the drawings by reference characters, A designates a valve-casing of the usual construction into which is screwed the nipple  $b^4$  of the cylindrical casing B. The valve-casing A is provided with the usual valve-seat  $a$ , against which seats the valve F, carried on the lower flanged end  $e^2$  of the valve-stem E.

The stem E is threaded, as usual, at  $e'$ , and its upper end  $e$  is squared, as usual. The threaded part works through a threaded sleeve  $b^2$  of the casing B, this sleeve  $b^2$  extending up into the casing B and forming an annular recess  $b^3$  for the reception of a coil-spring S. The casing B is made angular at  $b^5$  for the reception of a wrench.

Screwed on the upper end of the casing B is the cap C, the cap being provided with an angular part  $c^3$  to enable a wrench to be applied to it. This cap is provided with an up-

ward-extending cylindrical extension  $c$ , in which works the part  $d$  of the supplemental stem or key D, this part  $d$  having its upper end  $d'$  squared for the reception of an operating device. The lower end of the stem D is enlarged and provided with an angular recess  $d^4$ , in which works the angular end  $e$  of the main valve-stem. The lower end of the key D extends to near the upper end of the tubular extension  $b^2$ , thus forming, together with the recess  $b^3$ , an annular chamber for the spring S. The upper end of this spring bears against a downwardly-facing shoulder  $d^3$ , and thereby normally presses the key upward. Above the shoulder  $d^3$  the key is provided with an upwardly-facing valve  $d^2$ , which normally bears against a downwardly-facing valve-seat  $c'$ , formed on the cap C, this valve and seat being rounded or inclined downwardly and outwardly. The outer annular edge  $d^5$  of the valve fits within the annular wall or shoulder  $c^2$  of the cap.

It will be observed that the rotation of the supplemental valve stem or key turns the main valve-stem and either opens or closes the valve. The supplemental valve carried by the key avoids the necessity of the use of packing to make the valve water-tight. This attachment may, as will be observed, be attached to the valve-casing in place of the usual packing box or gland, and is therefore adapted to be used in connection with the valves now on the market.

It will be apparent to those skilled in the art that various mechanical embodiments of the invention are possible, and we therefore do not wish to be limited to the exact arrangement and construction shown.

What we claim, and desire to secure by Letters Patent, is—

1. The combination with a valve-casing, a cylindrical casing attached thereto and provided with an internally-threaded upwardly-extending tubular part at its lower end, an annular channel being formed between said tubular part and the outer wall of the chamber, a main valve having a threaded portion working through the threaded tubular part of the cylindrical casing and an angular part above said threaded portion, a cap detachably connected to the end of said cylindrical casing and formed with a downwardly-facing valve-seat, a key extending through said cap and formed with an upwardly-facing valve and a downwardly-facing shoulder directly over the annular channel in the cylindrical



casing, and a downwardly-extending tubular part adapted to rest on the upper end of the upwardly-extending threaded tubular part of the cylindrical casing, the interior of said tubular part being angular in cross-section and adapted to receive the angular part of the valve-stem, a coil-spring extending from the downwardly-facing shoulder of the key to the bottom of the annular channel of the cylindrical casing and surrounding the tubular part of the key, whereby said spring will hold the valve formed on said key against the valve-seat formed on the cap, and an operating device secured to the key above the cap.

2. The combination with a valve-casing, a casing attached thereto formed with a threaded opening through its bottom, a main valve having a threaded portion working through the threaded opening in said casing and an angular part above said threaded portion, a cap detachably connected to the end of said casing and formed with a downwardly-facing valve-seat, a key extending through said

cap and formed with an upwardly-facing valve and a downwardly-facing shoulder, a downwardly-extending tubular part smaller in diameter than the interior of the casing and adapted to form an annular channel within said casing, the interior of said tubular part being angular in cross-section to receive the angular part of the valve-stem, a coil-spring extending from the downwardly-facing shoulder of the key to the bottom of the casing and surrounding the tubular part of the key, whereby said spring will hold the valve formed on said key against the valve-seat formed on the cap, and an operating device secured to the key above the cap.

In testimony whereof we hereunto affix our signatures, in the presence of two witnesses, this 6th day of November, 1905.

CHARLES HITE.

JAMES ROBERTSON.

Witnesses:

BENJ. A. CROWTHER,

W. H. GILLESPIE.