

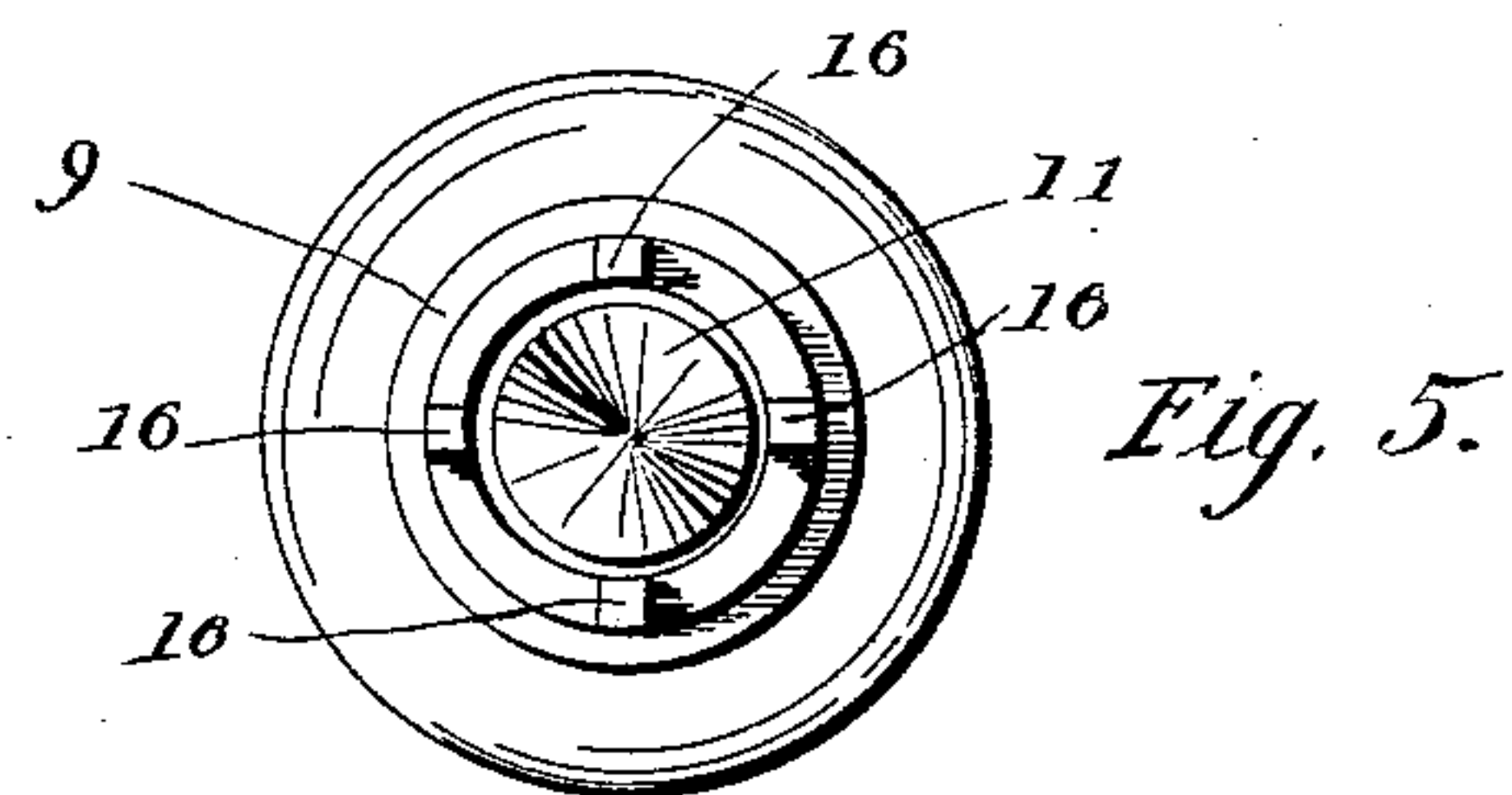
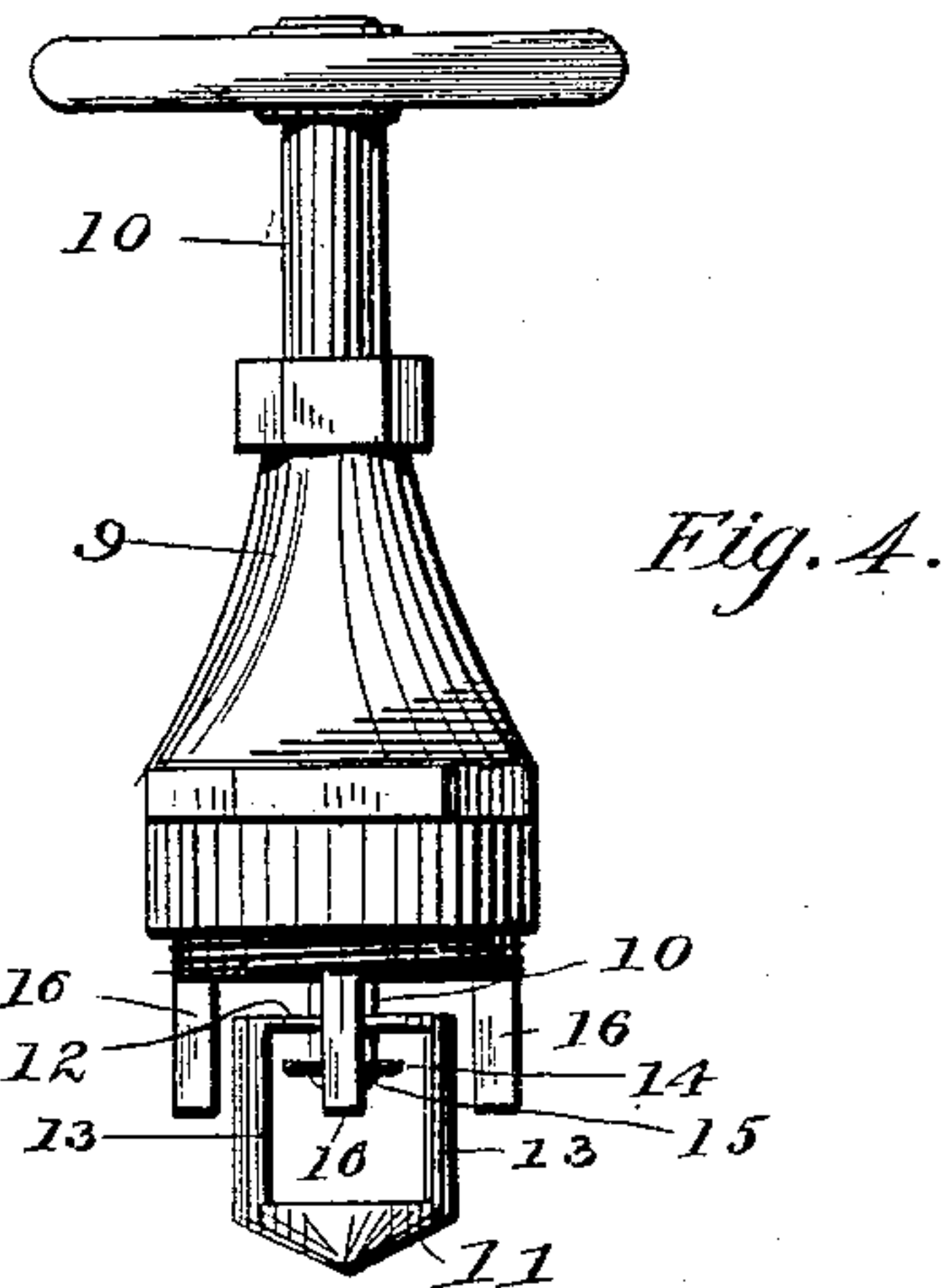
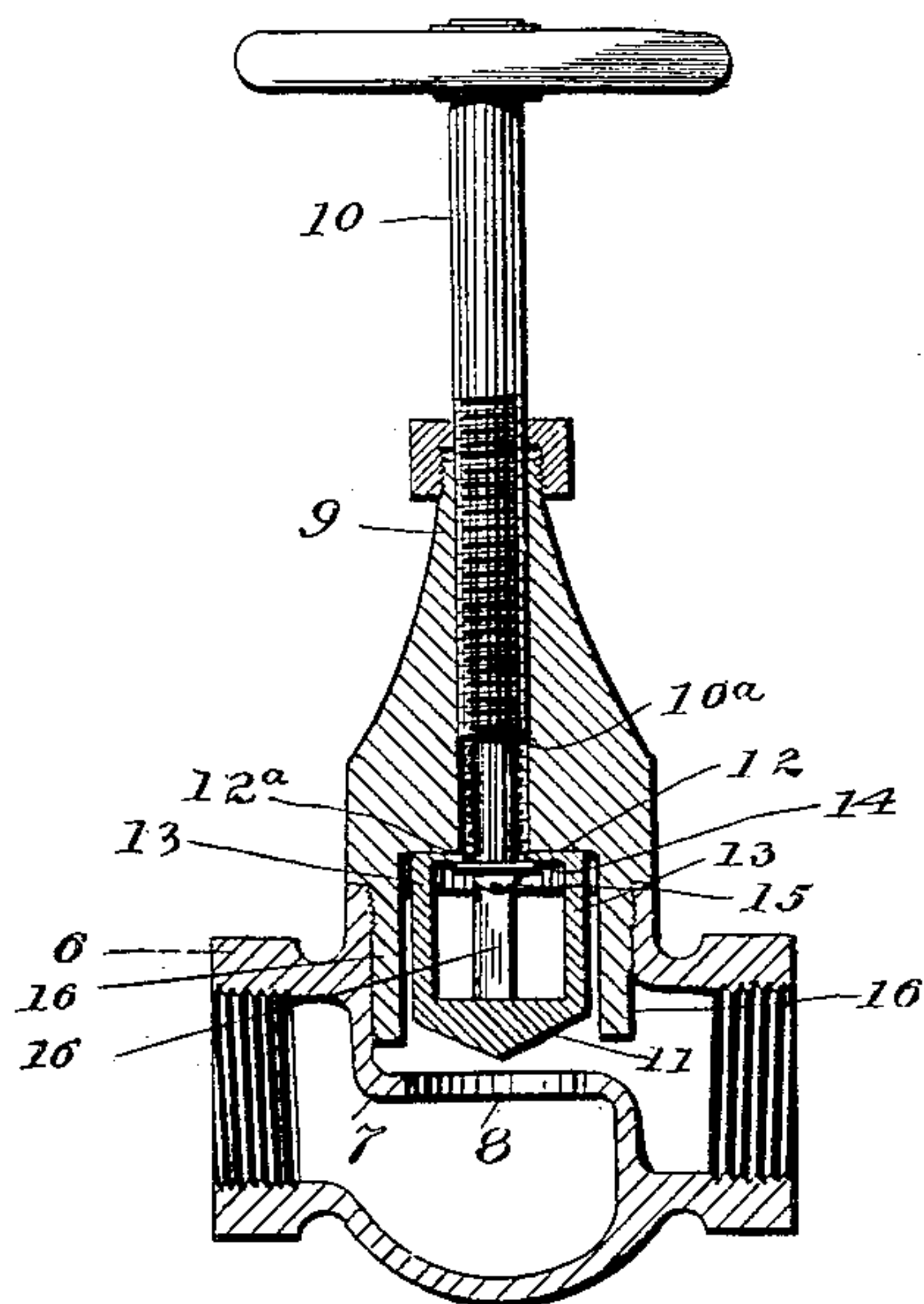
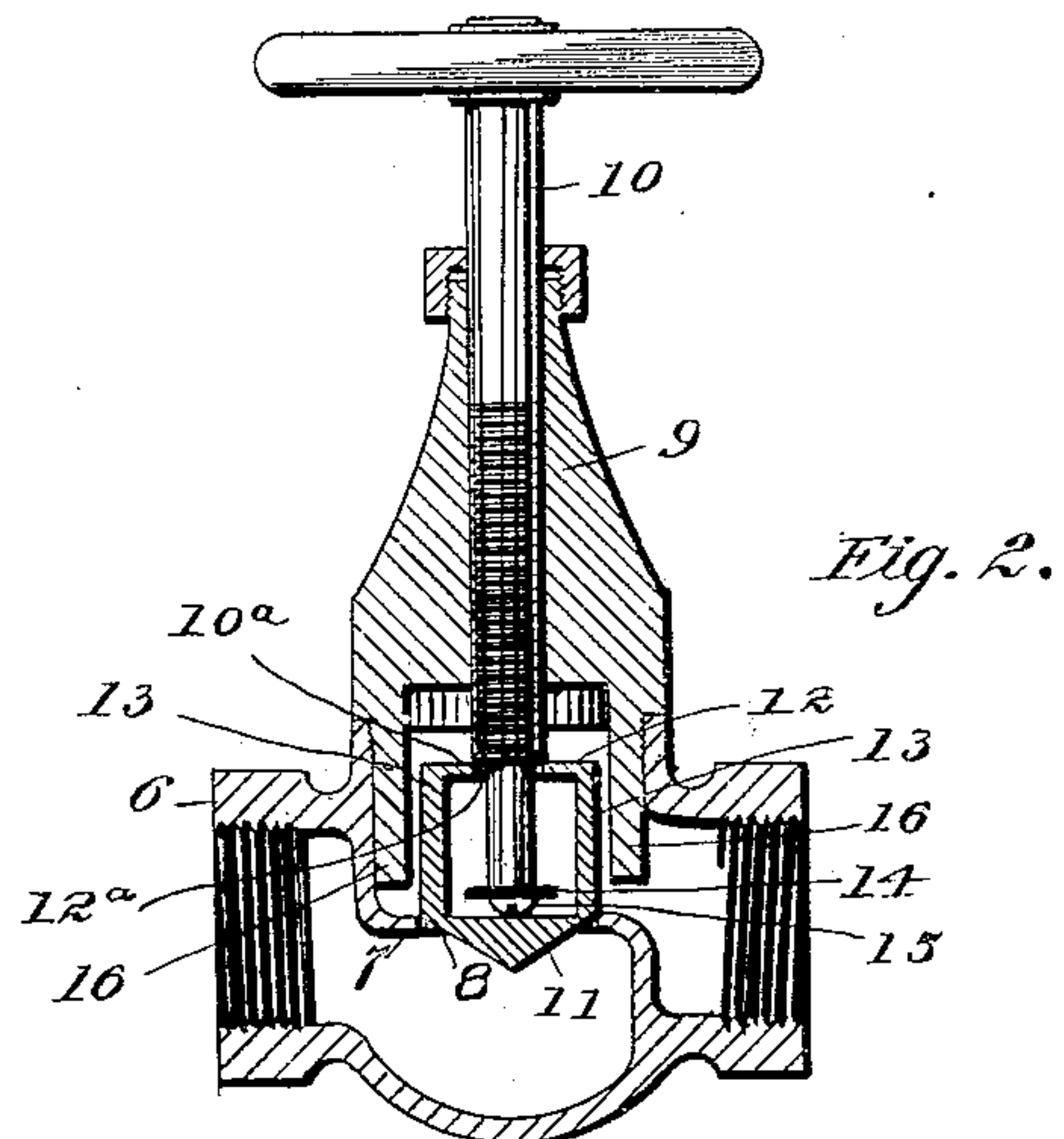
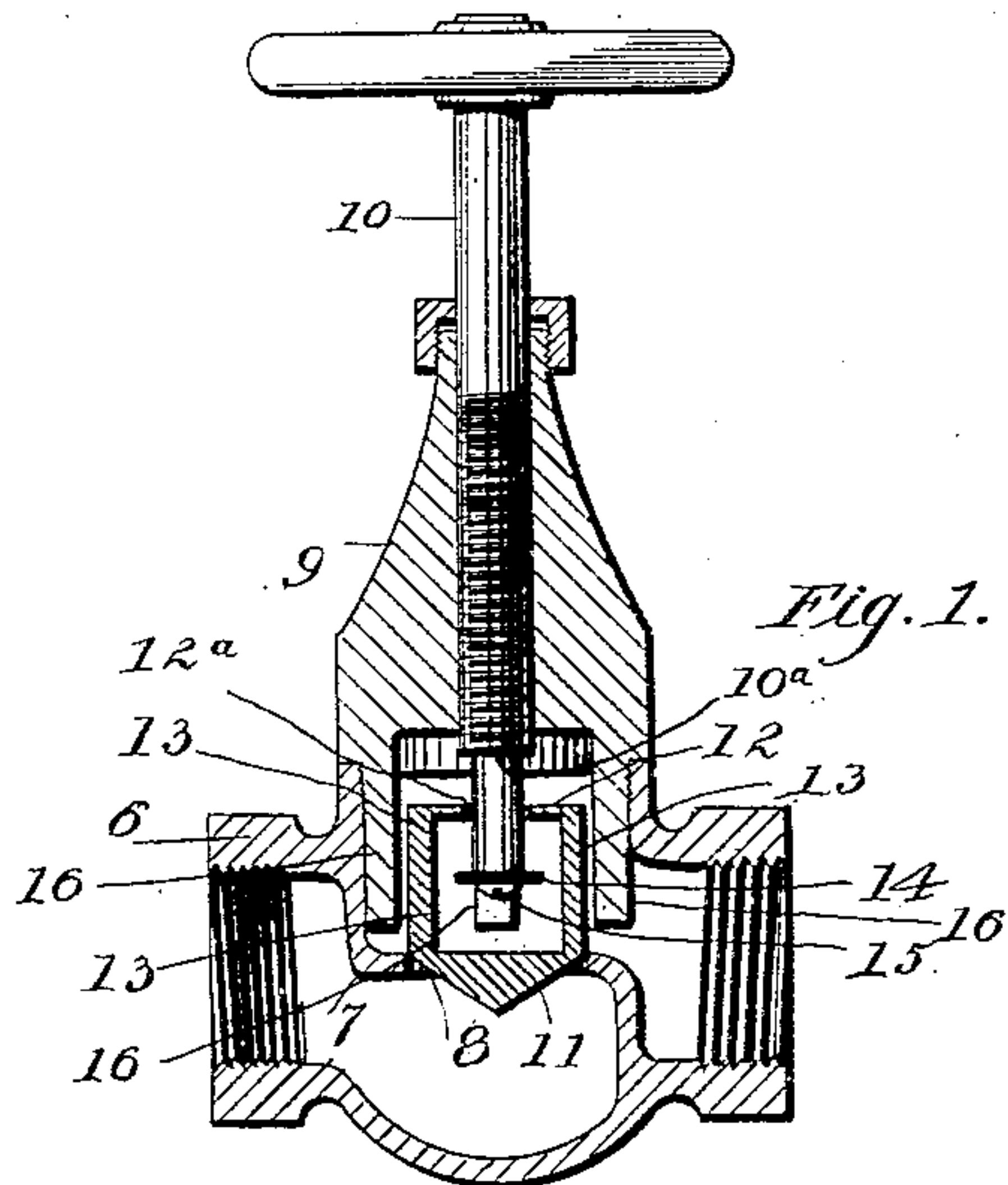
No. 704,087.

Patented July 8, 1902.

N. Z. NORRINGTON.
VALVE.

(Application filed Jan. 2, 1902.)

(No Model.)



WITNESSES:

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VALVE.

SPECIFICATION forming part of Letters Patent No. 704,087, dated July 8, 1902.

Application filed January 2, 1902. Serial No. 88,085. (No model.)

To all whom it may concern:

Be it known that I, NOVA Z. NORRINGTON, a citizen of the United States, residing at Hammond, in the county of Lake and State of Indiana, have invented certain new and useful Improvements in Valves; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the figures of reference marked thereon, which form a part of this specification.

15 This invention relates to valves.

The object of the invention is to form a check-valve which may be adjusted to serve as a stop by having its disk held to its seat and also to form a free pipe by having the disk held away from its seat.

A further object is to form a valve with its disk movable upon its stem with little liability to stick to either the stem or the seat.

25 A further object is to generally improve the construction of combined check and stop valves.

Referring to the accompanying drawings, Figure 1 is a sectional view showing the valve in normal position as a check-valve. Fig. 2 is a similar view showing the valve as a stop-valve closed. Fig. 3 is a similar view showing it as a stop-valve open. Fig. 4 is a side view of the valve and cap removed from the casing. Fig. 5 is an end or face view of the parts shown in Fig. 4.

Referring more particularly to the drawings, the valve-casing 6 is of a common type, having a diaphragm 7, in which the circular valve-seat 8 is formed. The valve-chamber is closed by a screw-cap 9, which has a threaded central bore for the threaded valve-stem 10, to which is attached the valve proper. This comprises a lower disk 11, preferably the shape of an inverted cone, and an upper disk 12, said disks being spaced apart and joined by bars 13 at their outer edges. The upper disk has a central circular hole 12^a, through which extends quite loosely the lower end of the valve-stem 10, which is reduced to form a shoulder 10^a above the upper disk. A retaining-washer 14 of greater diameter than the hole 12^a is attached to the lower end of the valve-stem by the screw 15 and engages under the upper disk to lift the valve.

55 Several, preferably four, bars 16 project from

the bottom of the cap 9 toward and around the valve-seat and serve to guide the valve to the seat and also to form a cage in which the valve works. I consider it preferable to have the valve so loosely mounted on the valve-stem that it will be guided in its reciprocating motion by the bars 16 rather than by the stem, as there is then less liability of the valve sticking either to the seat or the stem. A suitable hand-wheel may be fixed to the upper end of the stem to turn it.

By means of the construction shown three operative adjustments may be made: By screwing the stem down or in its lower end contacts with the disk 11 and holds the same to its seat, forming a stop, as shown in Fig. 2. By screwing the stem out the valve is lifted and retained from its seat, giving a free way, as shown in Fig. 3, these being the uses of a stop-valve. By moving the stem to an intermediate position, as shown in Fig. 1, the valve is free to reciprocate thereon within the cage formed by the bars 16, acting as a check or puppet valve.

The valve herein described will be found very useful in boiler-feeds, where it will serve both as cut-off and check, instead of the two valves commonly used for such purposes; also, to permit the pipes to be drained, as to prevent freezing; also, in cases where pipes have to be cleaned or blown out; also, to correct sticking of check-valves, since this valve may be forcibly moved from its seat, and for various other purposes which will suggest themselves to those skilled in the art.

Having thus described the invention, what is claimed as new, and desired to be secured by Letters Patent, is—

The combination with a valve casing and seat, and a cap for the casing having bars projecting therefrom forming a cage above and around the valve-seat, of a valve comprising connected upper and lower disks, the former having an axial opening and the latter fitting the valve-seat, and an axially-adjustable valve-stem extending loosely through the upper disk and having stops above and below the upper disk to engage the disk and hold the valve to or from the seat.

In testimony whereof I affix my signature in presence of two witnesses.

NOVA Z. NORRINGTON.

Witnesses:

EVA A. IRISH,

LE GRAND T. MEYER.