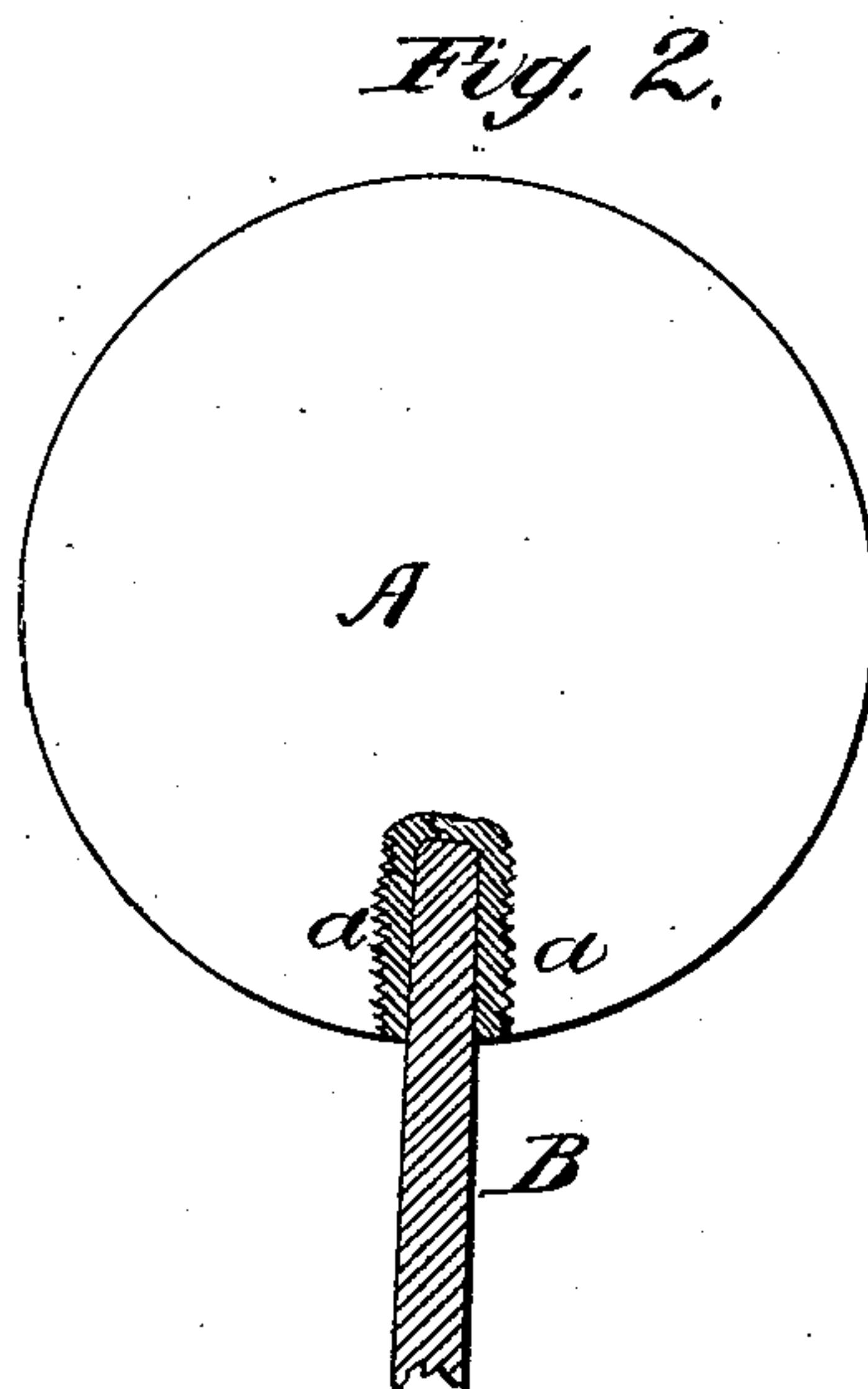
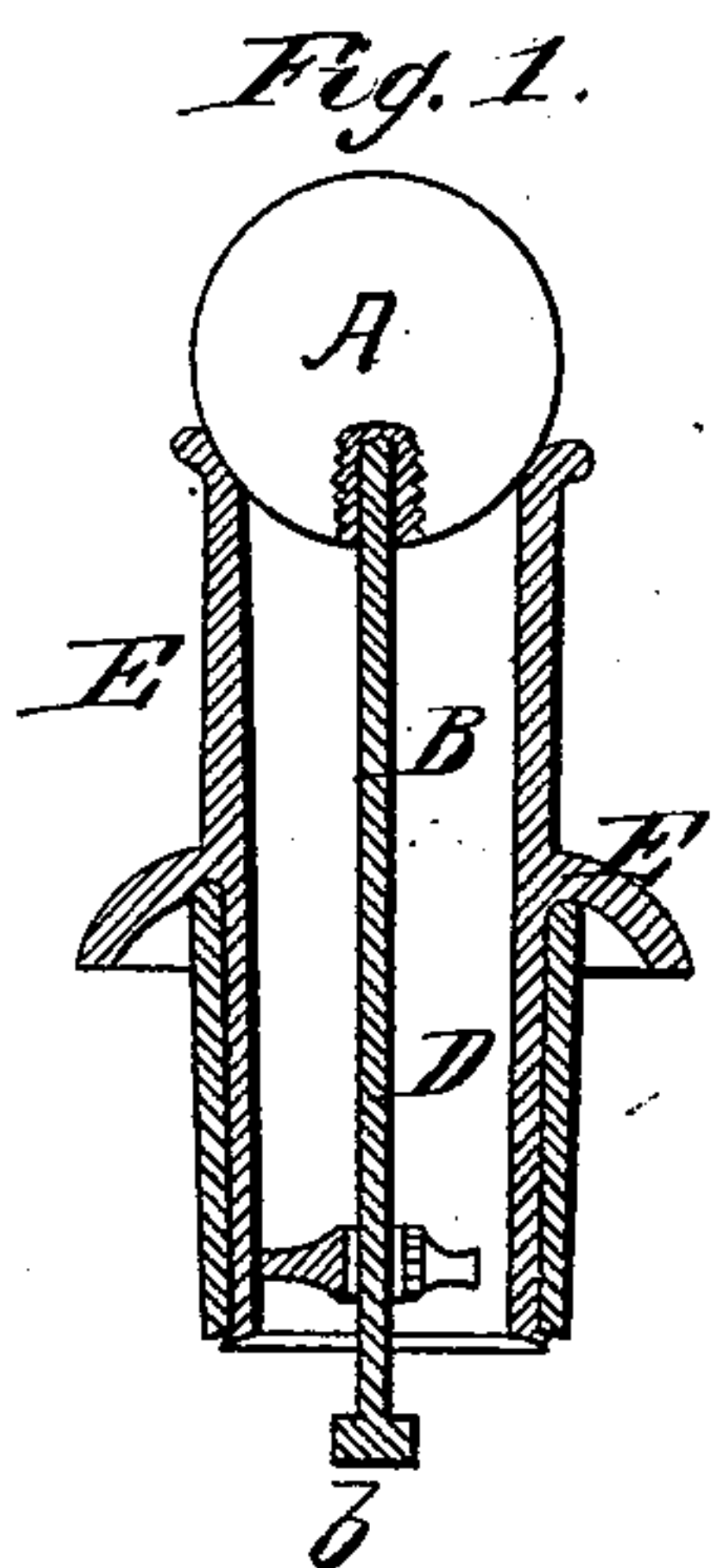


D. A. Draper.
Bottle Stopper.
No. 40,251. *Patented Oct. 13, 1863.*



Witnesses.
Norman W. Stearns.
P. H. Tschemacher.

Inventor
Daniel A. Draper

UNITED STATES PATENT OFFICE.

DANIEL A. DRAPER, OF EAST CAMBRIDGE, MASSACHUSETTS.

IMPROVEMENT IN SELF-ACTING BOTTLE-STOPPERS.

Specification forming part of Letters Patent No. **40,251**, dated October 13, 1863.

To all whom it may concern:

Be it known that I, DANIEL A. DRAPER, of East Cambridge, in the county of Middlesex and State of Massachusetts, have invented an Improvement in Self-Acting Bottle-Stoppers, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, making part of this specification, in which—

Figure 1 is a section through my improved bottle-stopper. Fig. 2 is an enlarged section through the ball or valve, showing more particularly the method of attaching the same to its stem.

In that description of bottle-stopper where the mouth-piece was opened and closed by a glass or marble ball or valve a serious difficulty has been experienced in permanently fastening the same to its stem.

Those stoppers now in use have been attached to their stems by a process of cementing, which has always proved ineffectual, as the cement, being composed of sulphur, shellac, or other composition, became loosened after being used a short time, and the ball and stem-piece were detached from each other.

The object of my invention is simply to overcome this difficulty; and it consists solely in the use of a fusible metal or solder instead of cement, which insures the permanent attachment of the ball to its stem.

To enable others skilled in the art to understand and use my invention, I will proceed to describe the manner in which I have carried it out.

In the said drawings, A represents the glass

or stone ball or valve; B, a wire stem secured thereto by means of the solder *a*. Said wire passes through this throat D of the stopper E. The lower extremity of this wire is provided with a projection, *b*, which prevents the ball from falling out of the mouth-piece only a sufficient distance to allow the contents of the bottle to be poured out.

The wire B is usually made of galvanized or plated iron, and the end to be inserted in the ball or valve is tinned. I attach this stem to the ball in the following manner: A hole is first drilled into the ball A about one-fourth of the diameter of the same, its interior surface being left rough. It is now held in a convenient position while the fused metal is poured therein. The end of the wire to be fastened being heated is then inserted within the hole. After the solder is allowed to cool the attachment becomes permanent and complete.

Having thus fully described the nature and object of my invention, I would state that I am aware that bottle-stopper valves have heretofore been attached to a stem. This I do not claim; but

What I claim as my invention, and desire to secure by Letters Patent, is—

As an improvement in bottle-stoppers, attaching the ball or valve A to its stem B by means of fusible metal, in the manner substantially as set forth.

DANIEL A. DRAPER.

Witnesses:

NORMAN W. STEARNS,
P. E. TESCHEMACHER.