

No. 607,160.

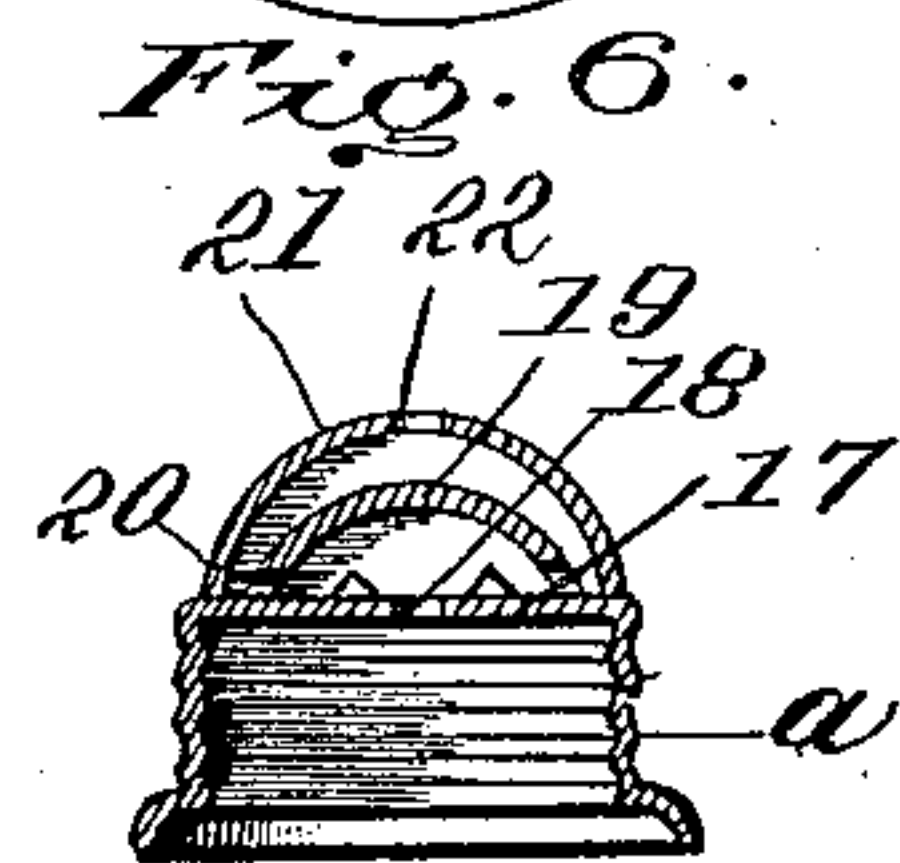
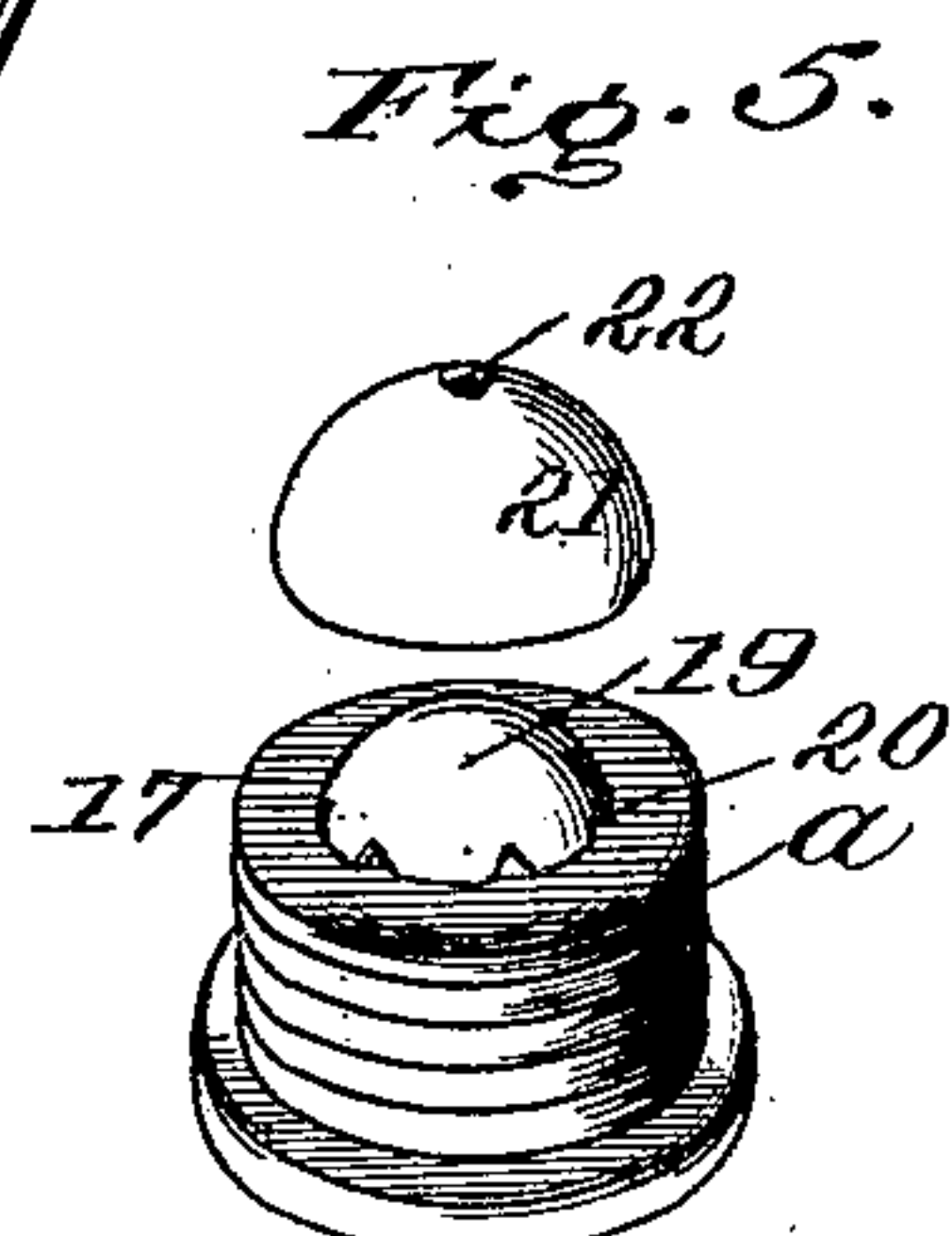
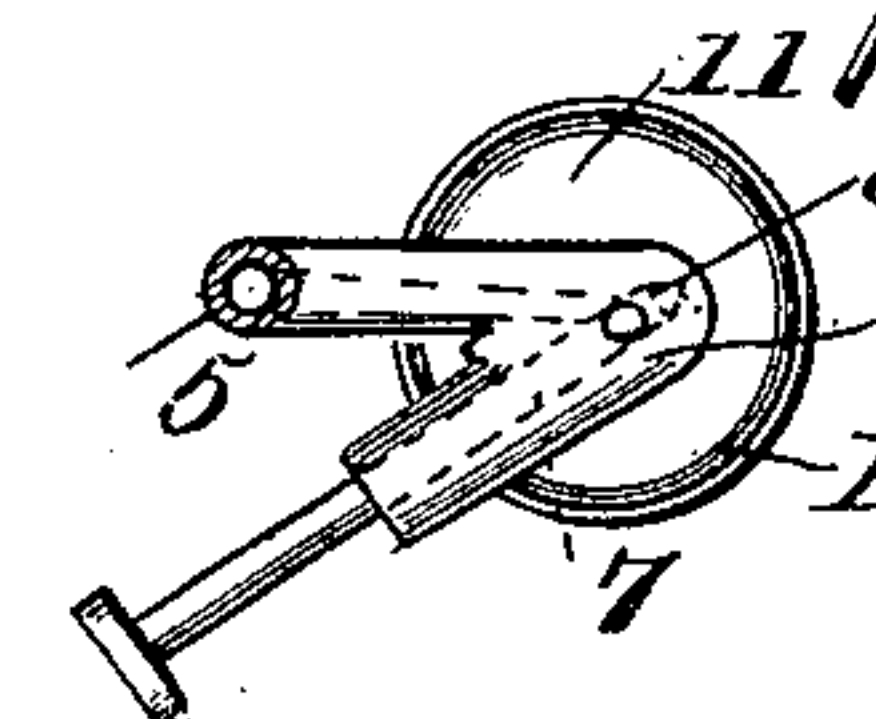
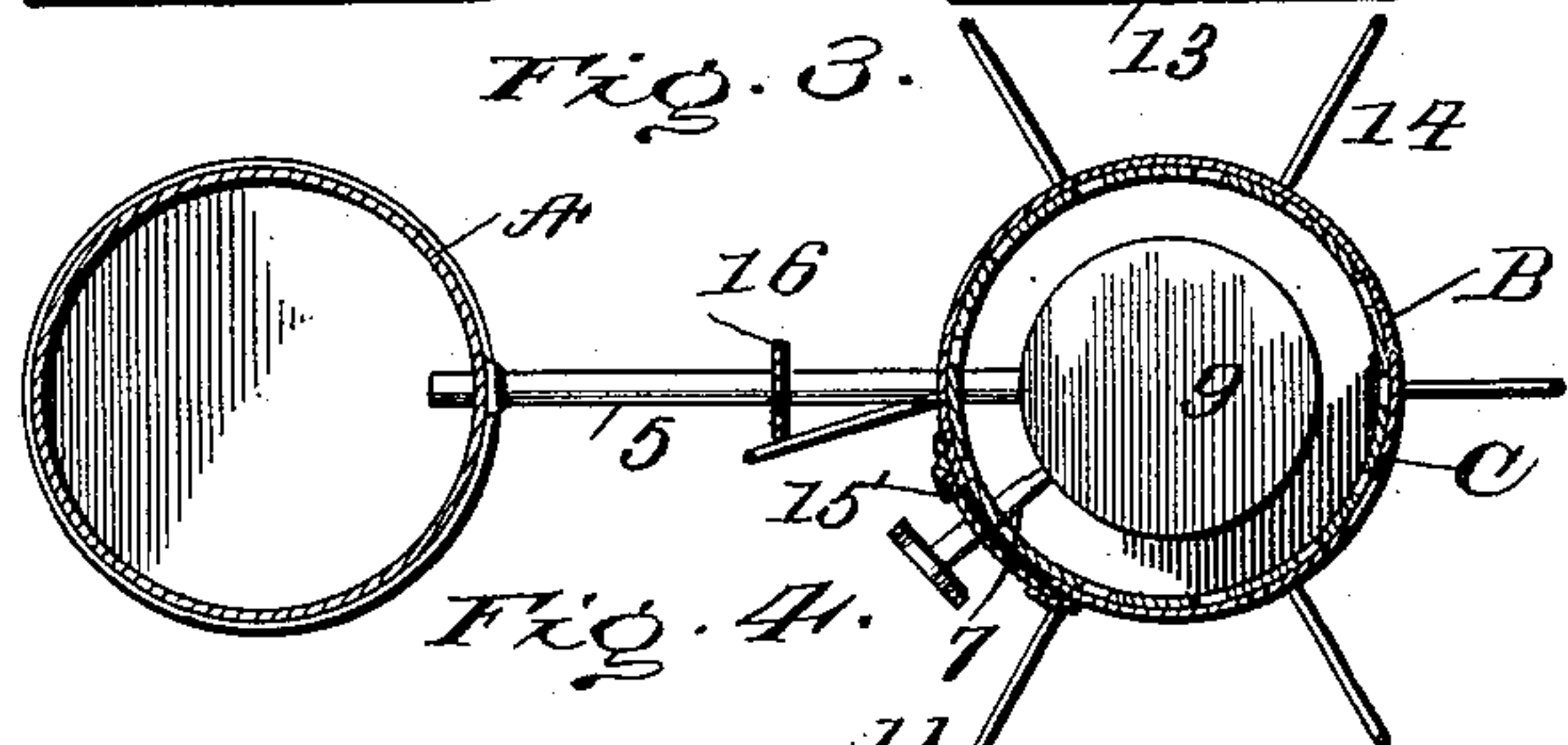
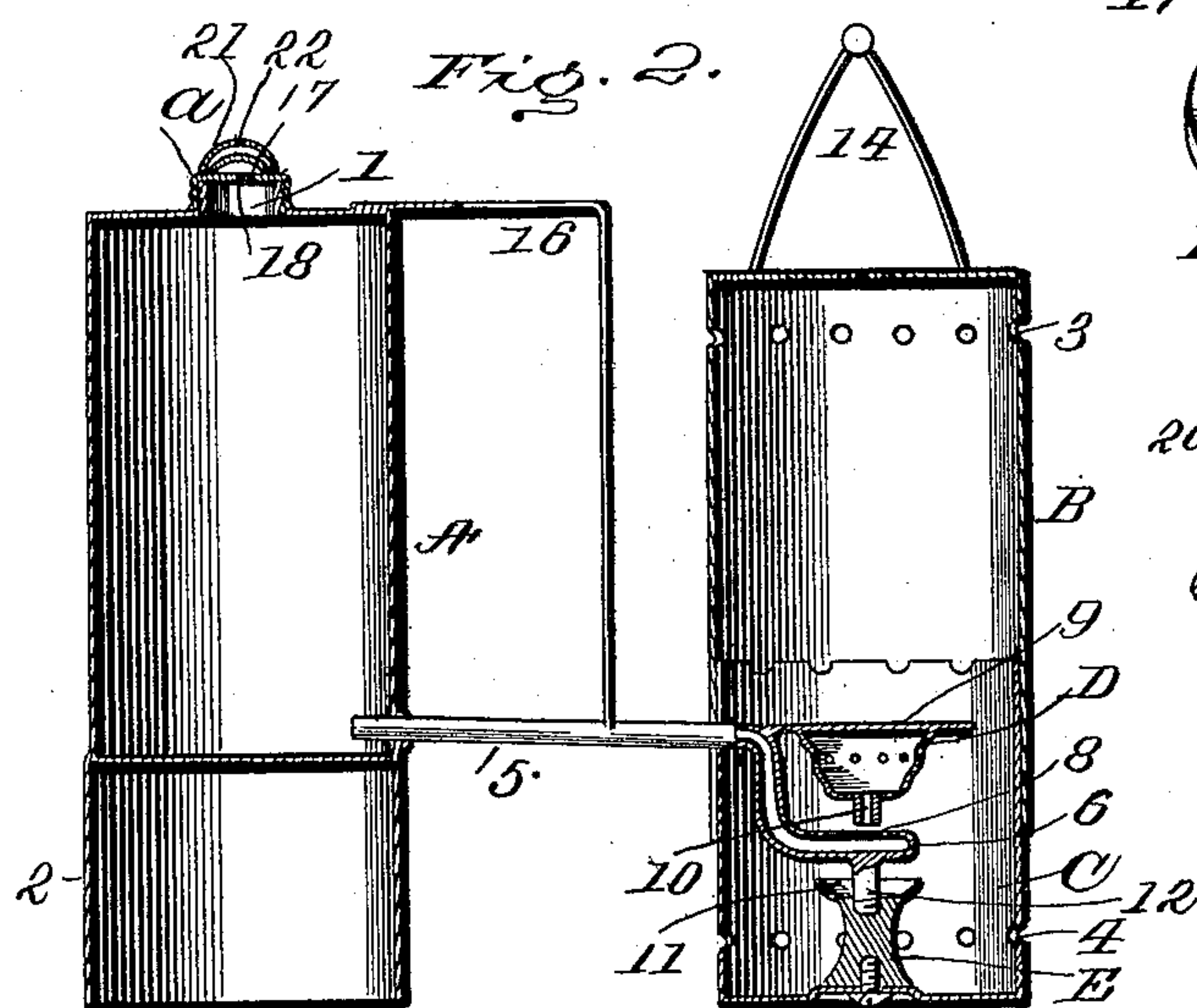
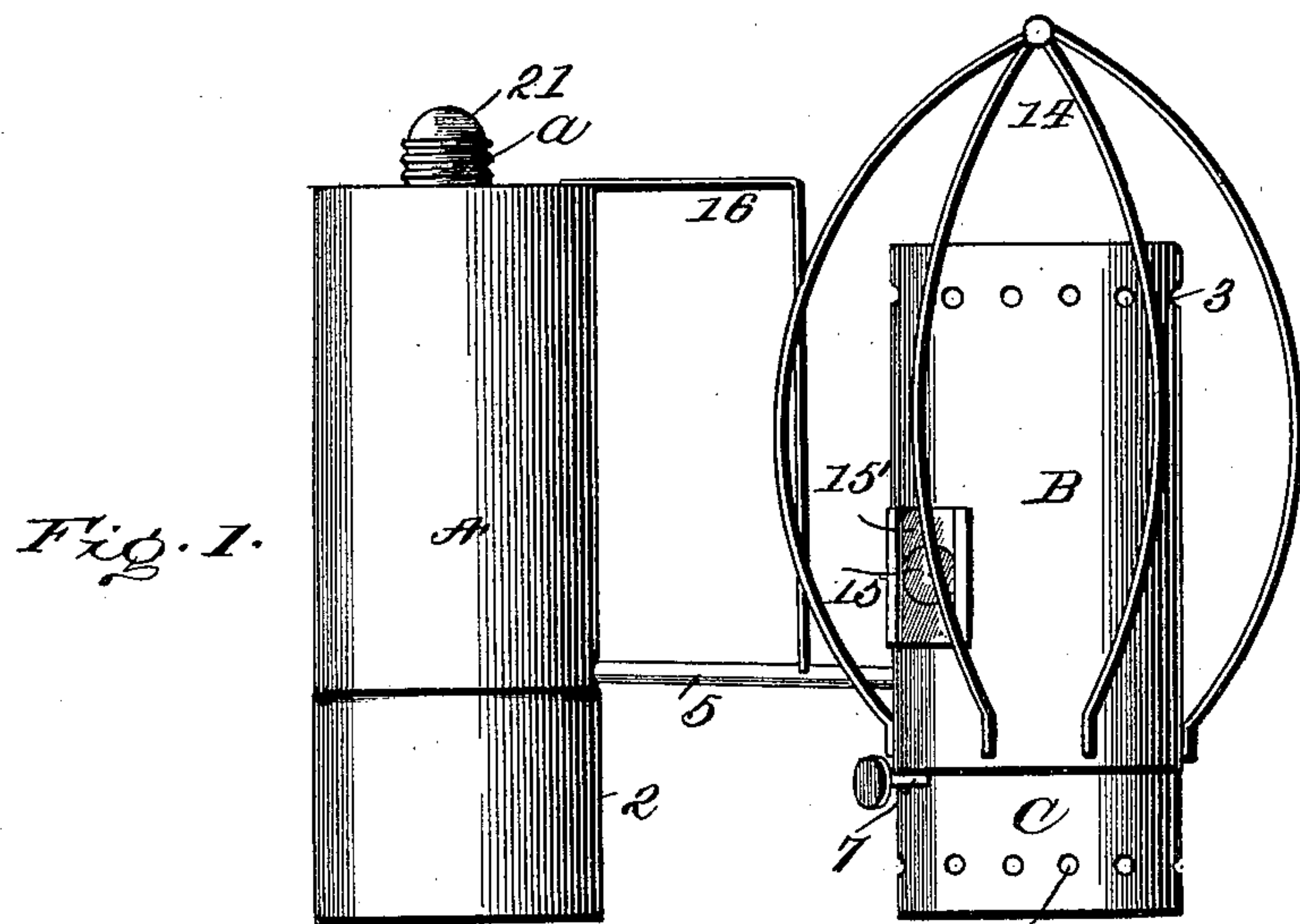
Patented July 12, 1898.

C. S. CLARK & H. H. BALTZLEY.

FOOT WARMER.

(Application filed Aug. 9, 1897.)

(No Model.)



Witnesses
J. J. Smith
David W. Gould.

Inventors
Charles S. Clark
Henry H. Baltzley
by W. Hunter Myers, Attorney

UNITED STATES PATENT OFFICE.

CHARLES S. CLARK AND HENRY H. BALTZLEY, OF ASSUMPTION, ILLINOIS;
SAID BALTZLEY ASSIGNOR TO SAID CLARK.

FOOT-WARMER.

SPECIFICATION forming part of Letters Patent No. 607,160, dated July 12, 1898.

Application filed August 9, 1897. Serial No. 647,557. (No model.)

To all whom it may concern:

Be it known that we, CHARLES S. CLARK and HENRY H. BALTZLEY, citizens of the United States, residing at Assumption, in the county of Christian and State of Illinois, have invented certain new and useful Improvements in Foot-Warmers, of which the following is a specification, reference being had therein to the accompanying drawings.

Our invention relates to an improved portable foot-warmer designed particularly for use in carriages, wagons, sleighs, and the like, the object of the invention being the production of a device for the above-mentioned purpose which will be effective in use and neat and simple in construction.

The invention will first be described in connection with the accompanying drawings and then pointed out in the claims.

Figure 1 of the drawings is a view in elevation of our improved foot-warmer. Fig. 2 is a vertical central section of the same. Fig. 3 is a horizontal section of the warmer, taken on a plane above the burner. Fig. 4 is a detail plan view of the valve mechanism and ignition-cup. Fig. 5 is an enlarged perspective view of the cap for the reservoir-neck, showing the dome-cover detached for the purpose of clearly illustrating the dome. Fig. 6 is a vertical central section of the cap complete.

Referring to the drawings, A is an oil-reservoir having a screw-threaded inlet-neck 1, adapted to receive a cap *a* of peculiar construction, hereinafter more specifically described, the reservoir being also provided with a flange 2, detached from its bottom, the function of which will appear later on.

B represents a drum cylindrical in cross-section and formed near its upper end with a series of perforations 3. Immediately beneath the drum and adapted to partially telescope in the lower end thereof is a heater-casing C, it being a cylindrical vessel adapted to contain the heater mechanism, comprising a burner, a vaporizer, and an ignition-cup, hereinafter described in detail, the bottom of the casing being on the same plane as the lower edge of flange 2 of reservoir A in order that the warmer may rest level when in use. The casing is formed near its lower end with a se-

ries of perforations 4, serving, with the perforations 3 in the drum, to permit the proper circulation of air to promote combustion at the burner. The casing is in communication with the reservoir through a connecting-pipe 5, which after entering the casing through a slot *s*, leading from its upper edge, is turned downward and then horizontally, and to this horizontal portion is connected a short length of pipe 6, which we term a "vaporizer," containing a well-known form of needle-valve 7, the handle of which is of sufficient length to extend outward beyond the wall of casing C for convenience in opening and closing the valve-port 8, formed in top of the vaporizer.

The burner D, of any well-known construction, is secured to the underside of a spreader-plate 9, which is soldered or otherwise fastened to pipe 5 at its downward bend, as shown. A short length of tubing 10, in communication with and secured to the burner D, extends downward, its lower end being in close proximity to and in register with the valve-port 8, forming a vapor-passage to the burner.

Below the valve mechanism is what we term an "ignition-cup" E, comprising a solid standard formed slightly concave at the upper end, as at 11, to hold a slight quantity of oil. A short stud 12, depending from pipe 6, takes into the upper end of the ignition-cup, further securing the valve mechanism in place. The lower end of the cup is formed with a screw-threaded opening adapted to receive a screw 13, the latter also passing through the heater-casing C, as shown, thus securing the casing and the parts therein firmly together.

The drum B is preferably surrounded by a wire framework 14, serving to keep the clothing from direct contact with the heated drum. The drum is also formed with a small opening 15, covered by a transparent plate 15', such as mica or the like, just above the plane of the burner, enabling the user to see when the burner is lighted and also to permit the warmer to be used as a lamp in places where other light is not available.

A right-angled bar 16, secured at one end to the upper end of the reservoir and at the other end to the connecting-pipe 5, serves as a handle for convenience in moving the warmer.

As our warmer is designed to be used in carriages, wagons, and the like, it is evident that the motion of the vehicle will cause more or less splashing of the oil in the reservoir, and therefore the cap for the neck of the reservoir should be of such construction as to admit the necessary air to permit the oil to flow to the burner and yet prevent the oil from splashing out of the reservoir. To this end we have devised a cap *a*, adapted to screw onto the neck 1, the top 17 of the cap being formed with a central opening 18. Over the opening 18 is secured a dome 19, which is formed with a series of radial openings 20, and over the dome 19 is secured a dome-shaped cover 21, soldered or otherwise fastened to the top 17 of the cap, this cover being centrally perforated at 22, all as clearly shown in Figs. 5 and 6. By this construction sufficient air will be admitted to the reservoir to cause a steady flow of oil when desired, the passage for the air being rendered so tortuous as to effectually prevent escape of oil through the vent.

The operation of our improved foot-warmer is as follows: The parts being assembled in the manner described and oil poured into the reservoir, the needle-valve 7 is opened, when oil will flow through pipe 5 and out the valve-port 8 in the vaporizer, overflowing to a slight extent into the ignition-cup E, wherein it is lighted. The heat from this flame acting on the vaporizer heats it, causing the oil which would otherwise flow out of the valve-port 8 to become vaporized, the vapor rising through tubing 10 to the burner D, where it may be ignited, heating the air in the drum and causing the drum to radiate sufficient heat to accomplish the result desired. After the burner is lighted the spreader 9, in addition

to causing the flame from the burner to more effectively heat the air in the drum, will direct the heat back onto the vaporizer 6, maintaining generation of vapor to supply the burner.

If desired to use the warmer to heat small articles—such as a pan, an iron, or the like—the drum B may be removed from the heater-casing C and the article to be heated placed directly above the burner and allowed to rest on the edge of the heater-casing, where, as is evident, an almost direct contact with the flame is permitted.

Having thus described our invention, what we claim as new, and desire to secure by Letters Patent, is—

1. In a foot-warmer, the combination, with a reservoir, of a heater-casing formed with a slot leading from its upper edge, a heater within said casing and secured to the bottom thereof, said heater comprising a burner, a vaporizer, and an ignition-cup, a pipe leading from the reservoir to the heater and adapted to pass through the slot of the casing, and a removable drum carried by said casing.

2. The combination, with a reservoir having a screw-threaded neck, of a cap adapted to screw on said neck, said cap having a perforation in its top, a radially-perforated dome secured to the top of the cap, and a centrally-perforated dome-cover overlying the dome and secured to the top of the cap.

In testimony whereof we affix our signatures in presence of two witnesses.

CHARLES S. CLARK.
HENRY H. BALTZLEY.

Witnesses:

JESSE M. BEEMAN,
E. T. MARSH.