

No. 708,259.

Patented Sept. 2, 1902.

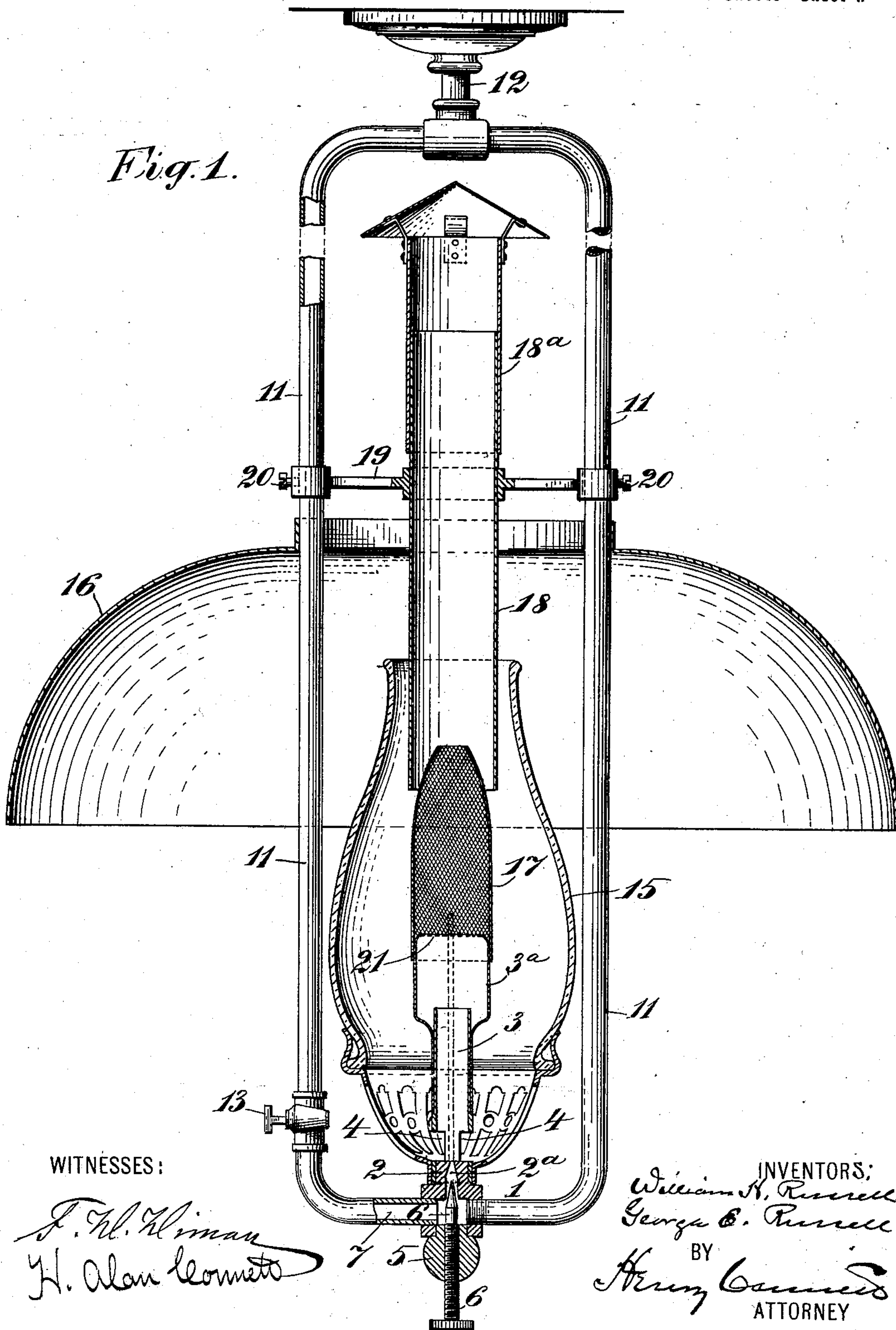
W. H. & G. E. RUSSELL.
BUNSEN BURNER.

(Application filed Dec. 2, 1901.)

(No Model.)

2 Sheets—Sheet 1.

Fig. 1.



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Fig. 2.

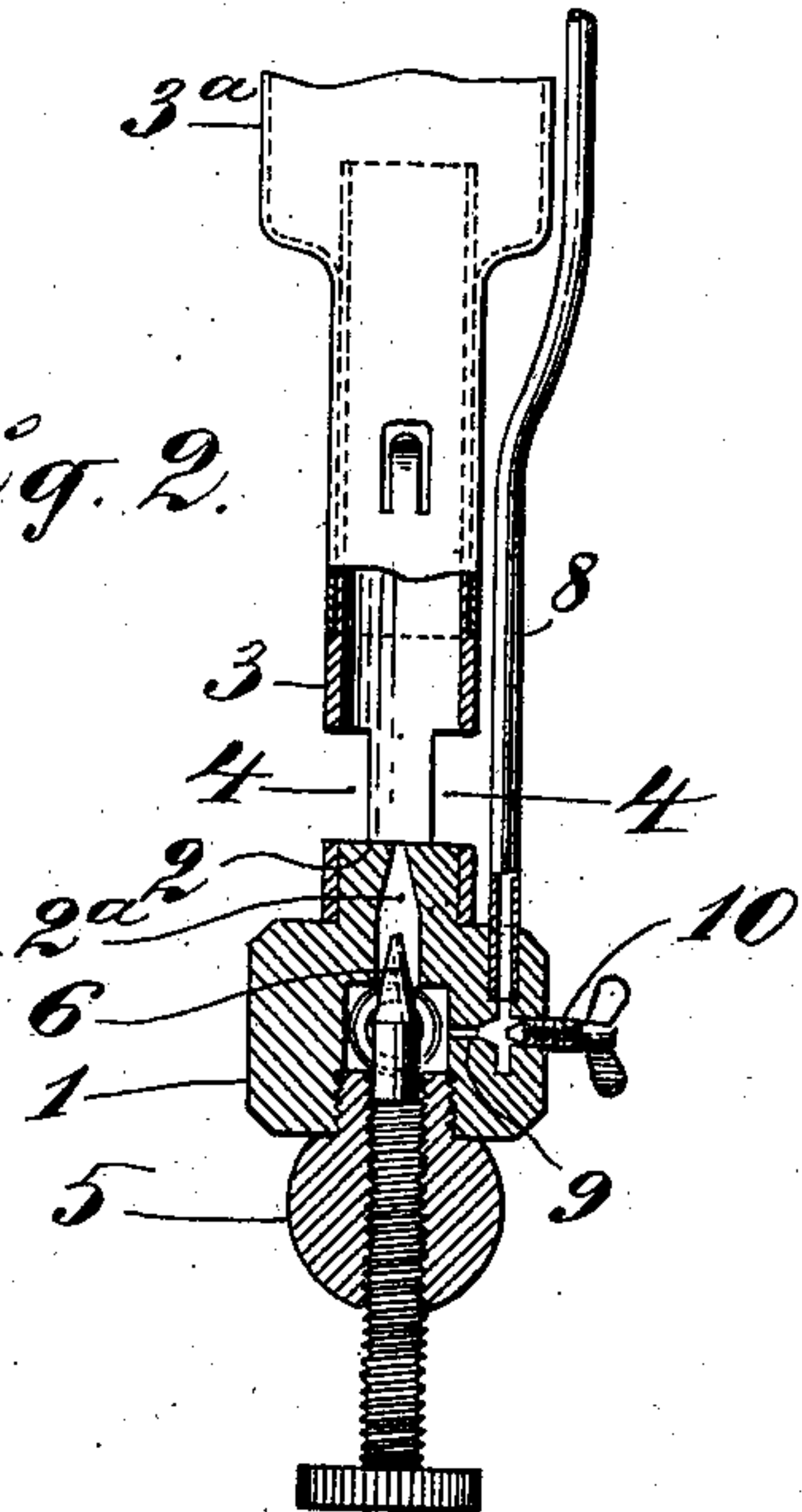


Fig. 3.

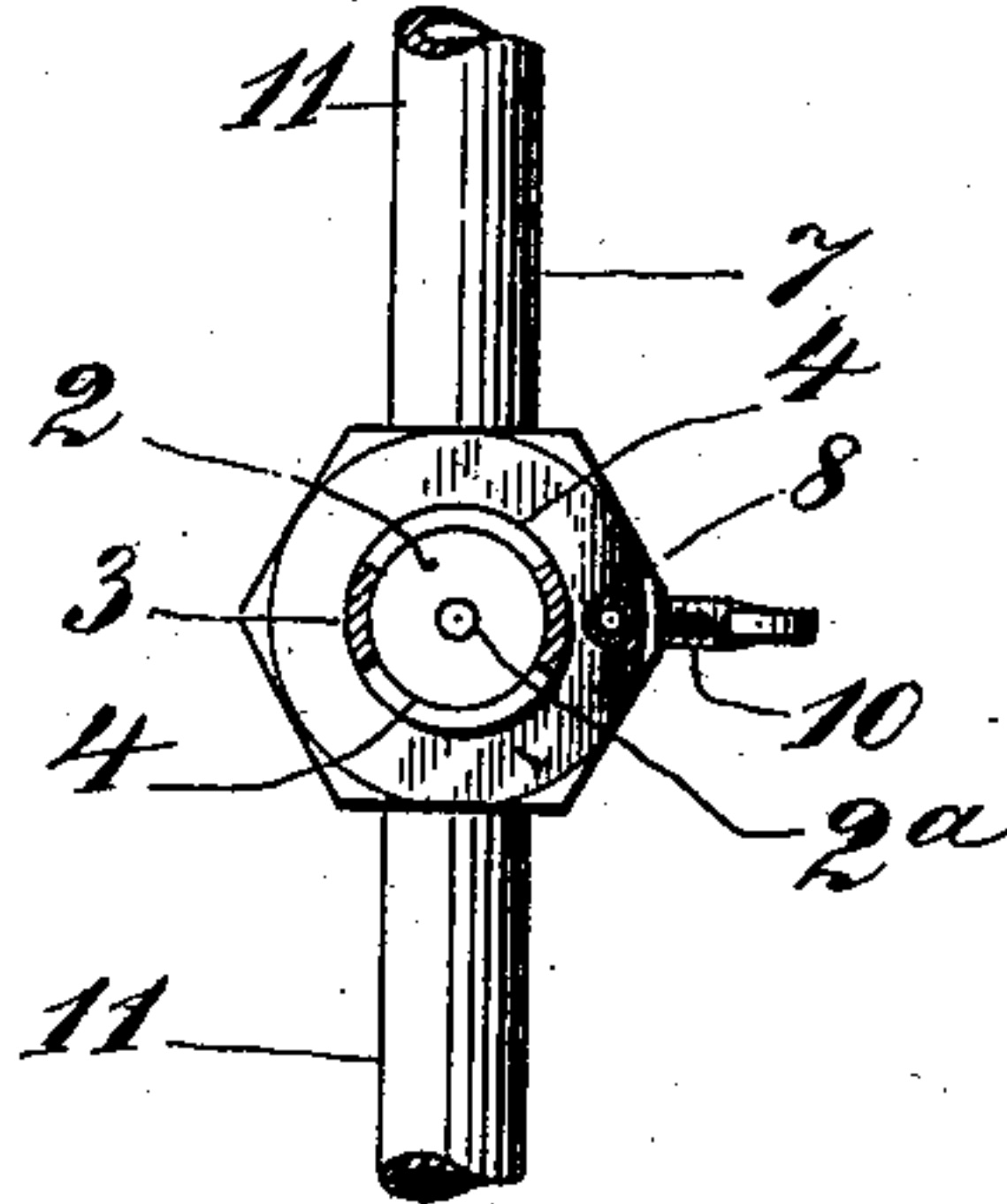
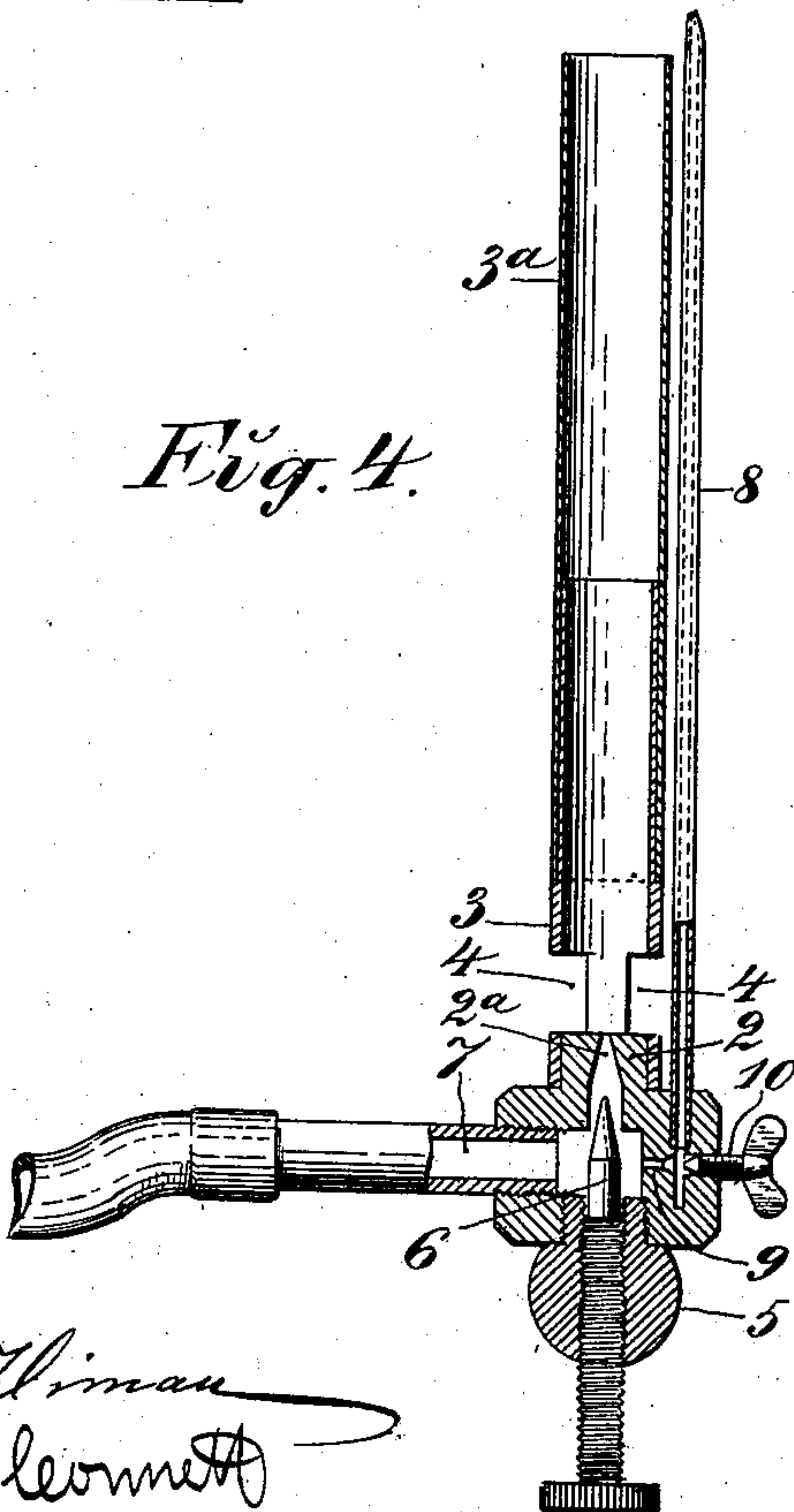


Fig. 4.



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UNITED STATES PATENT OFFICE.

WILLIAM H. RUSSELL AND GEORGE E. RUSSELL, OF JERSEY CITY,
NEW JERSEY.

BUNSEN BURNER.

SPECIFICATION forming part of Letters Patent No. 708,259, dated September 2, 1902.

Application filed December 2, 1901. Serial No. 84,350. (No model.)

To all whom it may concern:

Be it known that we, WILLIAM H. RUSSELL and GEORGE E. RUSSELL, citizens of the United States, and residents of Jersey City, Hudson county, New Jersey, have jointly invented certain new and useful Improvements in Bunsen Burners, of which the following is a specification.

This invention relates to the general class of Bunsen burners where air is drawn in to mix with an injecting jet of hydrocarbon either in the form of a gas or vapor, and our burner is applicable both for heating purposes or for illumination with the aid of a mantle.

Our burner has several novel and important features. The injecting jet of fluid hydrocarbon is controlled by a needle-valve axially alined with the burner-tube, which latter is telescopic, so that it may be made longer or shorter at will to vary the force of the jet. A by-pass igniter is provided which has a separate cut-off. The chimney of the burner is also telescopic.

In the accompanying drawings, which illustrate the embodiment of our burner, Figure 1 is a sectional elevation of the burner as employed in a lamp for illuminating purposes. Fig. 2 is a sectional view the plane of which is at right angles to the sectional plane of Fig. 1. Fig. 3 is a sectional plan, the plane of the section being taken through the air-inlets of the burner-tube. Fig. 4 is a sectional side elevation of the invention as applied to a heater.

Referring, primarily, to the first three figures of the drawings, 1 is the hollow body of the burner, on which is a nipple 2. In this nipple is the jet-outlet 2^a for the gas, which is a contracted conical aperture. On the nipple 2 is secured the fixed section 3 of the burner-tube, provided with a lateral air inlet or inlets 4 near the point of attachment to the nipple, and slidable telescopically on the section 3 is the movable section 3^a of the burner-tube, whereby the said tube may be made longer or shorter to vary the force of the jet. By elongating the tube beyond the air-inlets 4 the force of the jet is increased. This burner-tube is alined axially with the jet 2^a.

In the body 1 opposite to the nipple 2 is secured a plug 5, through which is screwed a

needle-valve 6, which is axially alined with the jet-aperture and burner-tube. The gas or vapor of hydrocarbon is admitted to the chamber of the body 1 at an inlet 7, and the needle-valve 6 controls the outlet 2^a.

In order to provide a means of igniting the burner, it is provided with a slender by-pass tube 8. This tube is connected by a passage 9 with the gas-chamber in the body 1, so that its supply is not cut off by the closure of the jet-outlet by the valve 6, and when ignited it will remain burning when the valve 6 is closed; but a screw needle-valve 10 is provided which is adapted to close or partially close the passage 9, so as to nicely regulate or wholly cut off at will the quantity of gas supplied to the by-pass tube 8. This tube will vary in length according to circumstances.

In Fig. 1 there are two tubes or pipes 11, which depend from the gas-service pipe 12 and supply the burner. One of these parallel pipes may be plugged or stopped and the other, which is provided with a stop-cock 13, be employed to supply the gas. The burner is provided with a chimney-gallery. 15 is the glass globe or outer chimney, 16 the shade, and 17 the mantle. These are common to this class of lamps. 18 is a metal chimney proper which depends into the outer glass chimney to the top of the mantle. The chimney 18 is supported by a transverse bar 19 on the parallel pipes 11, said bar having eyes through which said pipes pass and set-screws 20 to clamp the bar to the pipes. This chimney is telescopic, the upper portion 18^a thereof telescoping with the lower part 18. The object of this is to increase or decrease the draft at will to suit the conditions, and especially the character of the hydrocarbon fluid employed.

The burner when employed for illuminating purposes, as in Fig. 1, will have the movable section 3^a of the burner-tube enlarged at its end and furnished with the usual gauze cap 21 to adapt it to receive the mantle. In Fig. 4 we have shown the burner constructed for heating purposes; but this form differs in no material respect from the form already described. The section 3^a of the burner-tube is represented in Fig. 4 as a plain cylinder; but this section may have any form in cross-

section that is desired or adapted to the uses of the burner.

Having thus described our invention, we claim—

- 5 1. A Bunsen burner having an elongatable burner-tube, means for supplying gas there-
to, a telescopic chimney, a bar carrying said
chimney and upright parallel guides for said
bar, substantially as set forth.
10 2. A Bunsen burner having a telescopic

burner-tube and a telescopic chimney alined therewith.

In witness whereof we have hereunto signed our names, this 29th day of November, 1901, in the presence of two subscribing witnesses. 15

WILLIAM H. RUSSELL.
GEORGE E. RUSSELL.

Witnesses:

HENRY CONNETT,
PETER A. ROSS.