No. 701,347. Patented June 3, 1902.

C. J. JOHNSON.

HYDROCARBON BURNER.

(Application filed June 14, 1901.)

(No Model.)

Fig. 1.

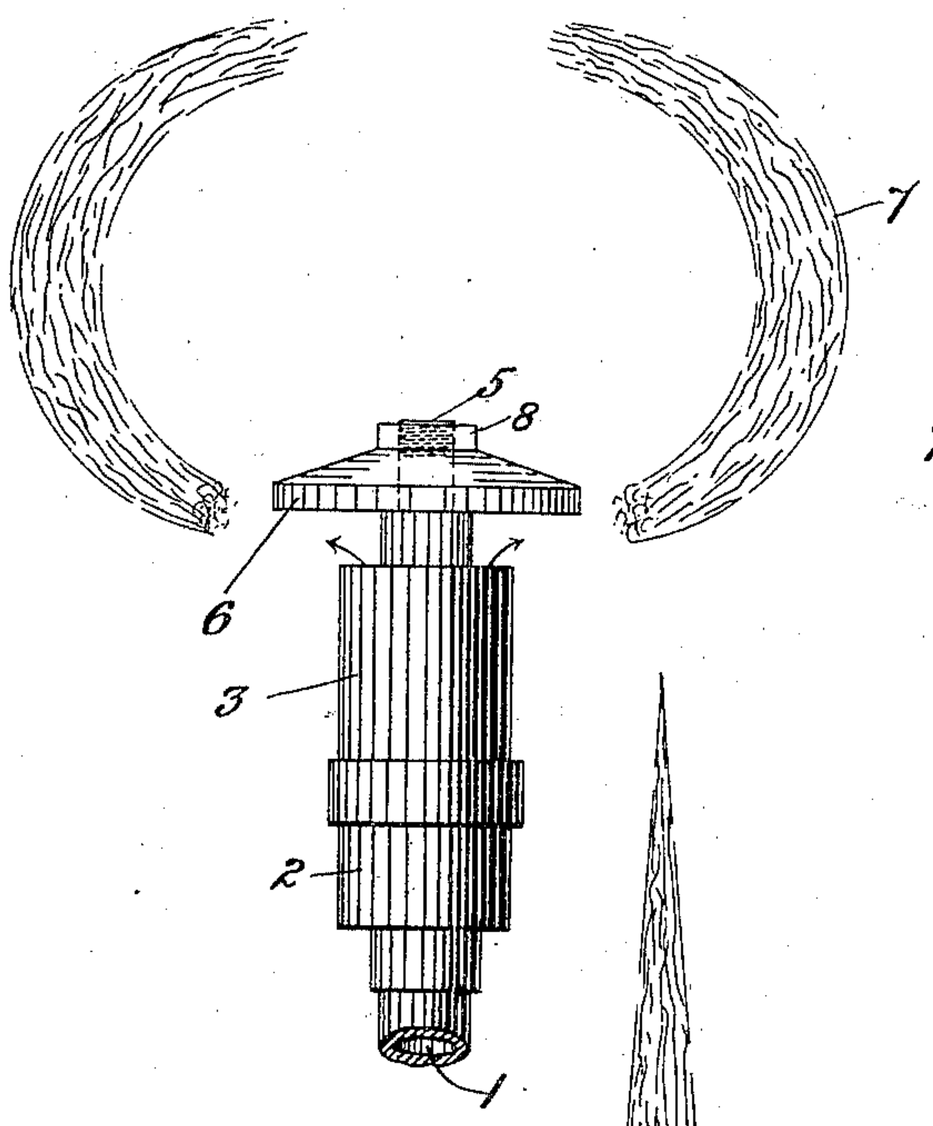


Fig. 2.

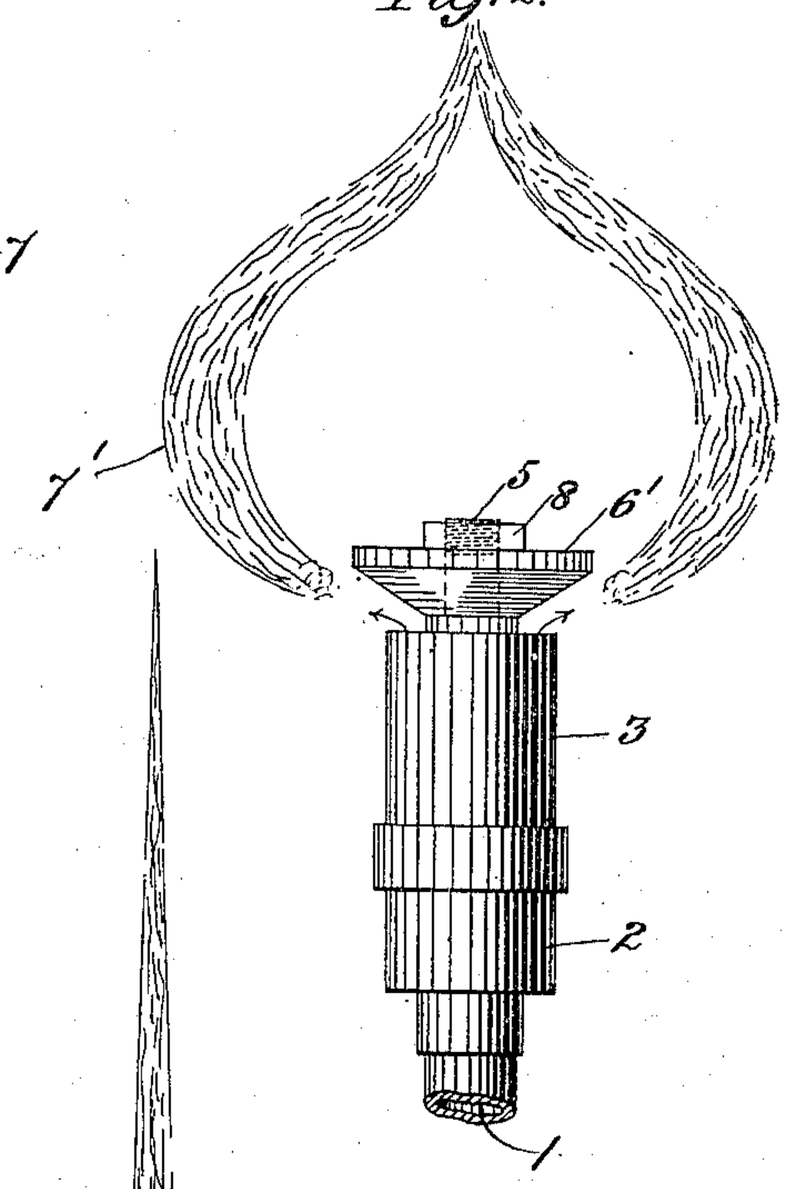


Fig. 5.

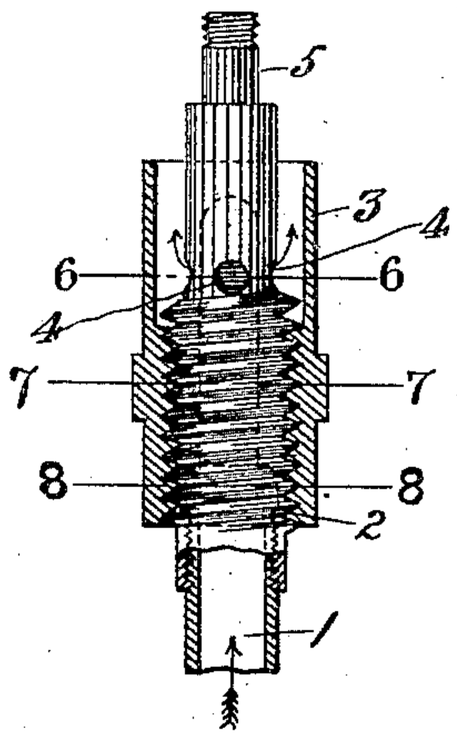


Fig. 3.

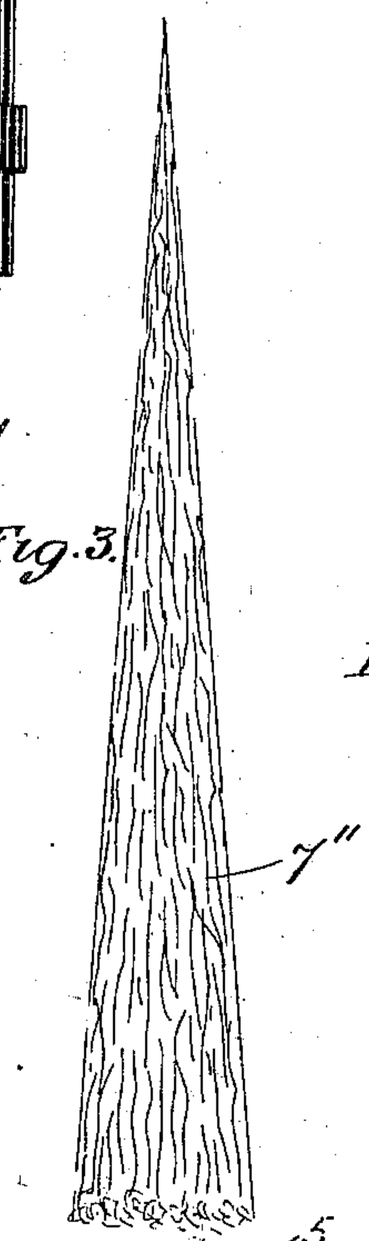


Fig. 4.

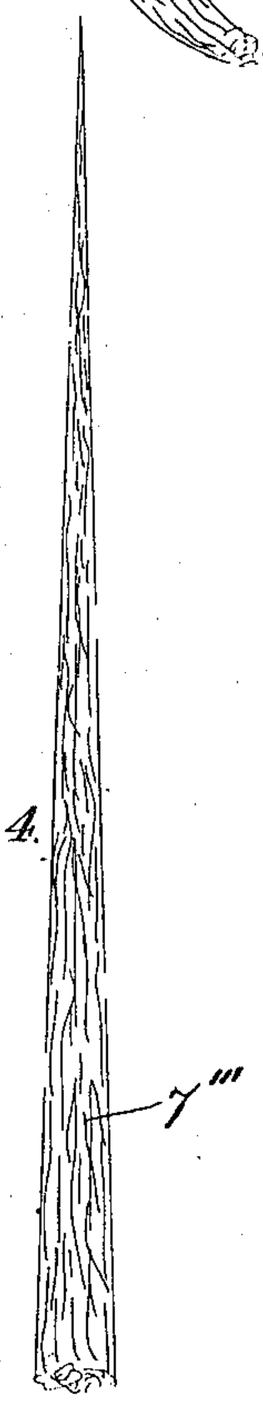


Fig. 6.

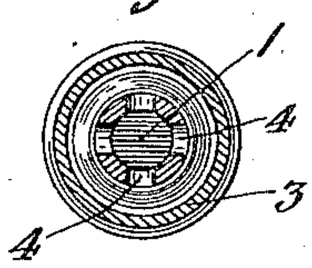


Fig. 7.

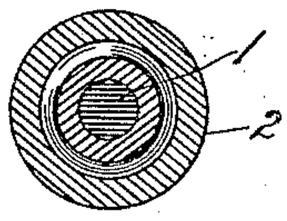


Fig. 8.

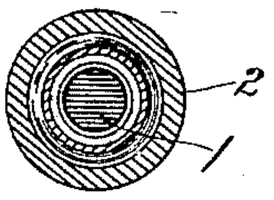


Fig. 5.

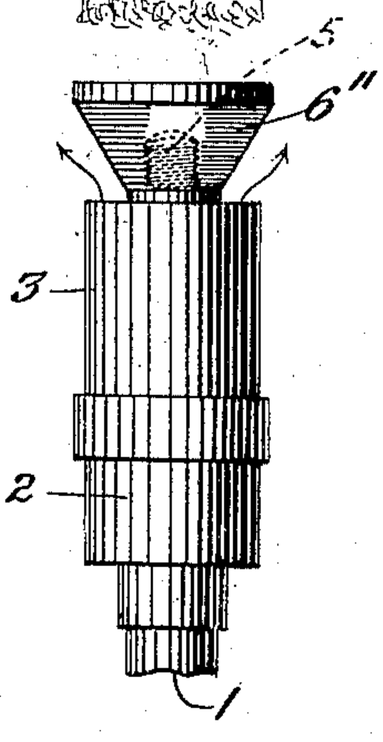
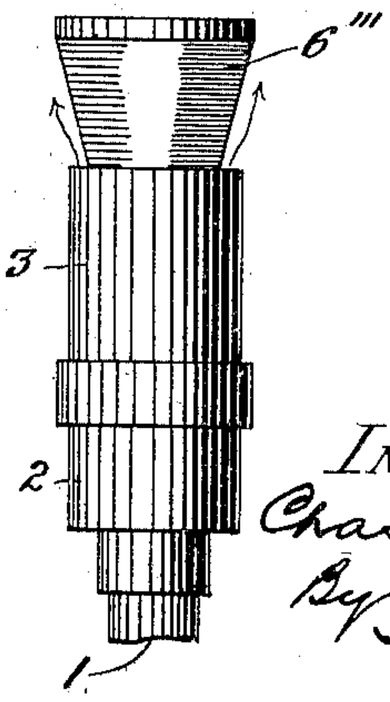


Fig. 6.



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By Stanley Stoner
attorney.

UNITED STATES PATENT OFFICE.

CHARLES J. JOHNSON, OF ST. LOUIS, MISSOURI.

HYDROCARBON-BURNER.

SPECIFICATION forming part of Letters Patent No. 701,347, dated June 3, 1902.

Application filed June 14, 1901. Serial No. 64,495. (No model.)

To all whom it may concern:

Be it known that I, CHARLES J. JOHNSON, a citizen of the United States, residing at the city of St. Louis, State of Missouri, have invented a certain new and useful Improvement in Hydrocarbon-Burners, of which the following is a specification.

My invention relates to that class of burners capable of adjustment and adapted to varying sizes and shape and which secures the maximum of combustion from hydrocarbon gas. It possesses features of novelty hereinafter specifically pointed out and claimed.

Referring to the drawings forming a part hereof, Figure 1 shows a vertical elevation of my device constructed so as to form a flame substantially globular. Fig. 2 shows a modified form which produces a conical flame. Figs. 3 and 4 are still more modified, which produce needle-flames. Fig. 5 shows a vertical section of the burner; and Figs. 6, 7, and and 8 are horizontal sections taken through the lines 6 6, 7 7, 8 8, respectively, on Fig. 5.

1 is the supply-pipe through which is furnished the necessary gas.

2 is a jacket having interior threads to engage exterior threads on the pipe 1. 3 is the extension of this jacket, which extends beyond the perforations 4 in the supply-pipe 1. A clearance-space between the pipe and jacket beyond the threaded portions allows the gas to escape through the said perforations.

5 is a pin on the solid end of the pipe 1, over which the deflector 6 fits, said deflector being held in place by the nut 8.

7 is the flame of the igniting gas.

Gas introduced through the pipe 1 escapes through the perforations 4. The jacket 3 is capable of adjustment by means of the threaded portion, so that the distance between said perforations and the open end of the jacket 3 may be regulated. The escaping gas then dashes against the deflector 6. If said deflector has a flat or horizontal bottom, Fig. 1, the gas will when ignited form a flame nearly globular, as shown. If the bottom slant at about twenty-five degrees, Fig. 2, and said deflector be a truncated inverted cone 6′, the approximate form of the flame will be as shown in said figure, as 7′. The more nearly this slant or angle approaches the vertical the longer and more needle-like will be the flame. 6″ shows an angle of sixty degrees and 6‴ an angle of seventy-five degrees. Instead of the deflector being held in place by a nut 8 it may screw directly onto the pin 5, Fig. 3.

The device is capable of the most perfect adjustment and is extremely simple in its construction. It introduces no oxygen (air) within the tube, as in ordinary Bunsen burners; but the gas is mixed with the air after it escapes the top of the jacket 3. Maximum combustion is secured with the use of but the one blast.

What I claim as new, and desire to secure by Letters Patent of the United States, is—

In a hydrocarbon-burner, the combination of a supply-pipe provided with a closed end, but with perforations on the side thereof, an adjustable jacket engaging and inclosing said pipe and extending beyond said perforations, but leaving a clearance-space between it and the said supply-pipe, and a deflector placed above said jacket and on the end of said pipe, said deflector being of greater diameter than in the interior of said supply-pipe substantially as described.

CHAS. J. JOHNSON.

In presence of—
E. C. LACKLAND, Jr.,
STANLEY STONER.