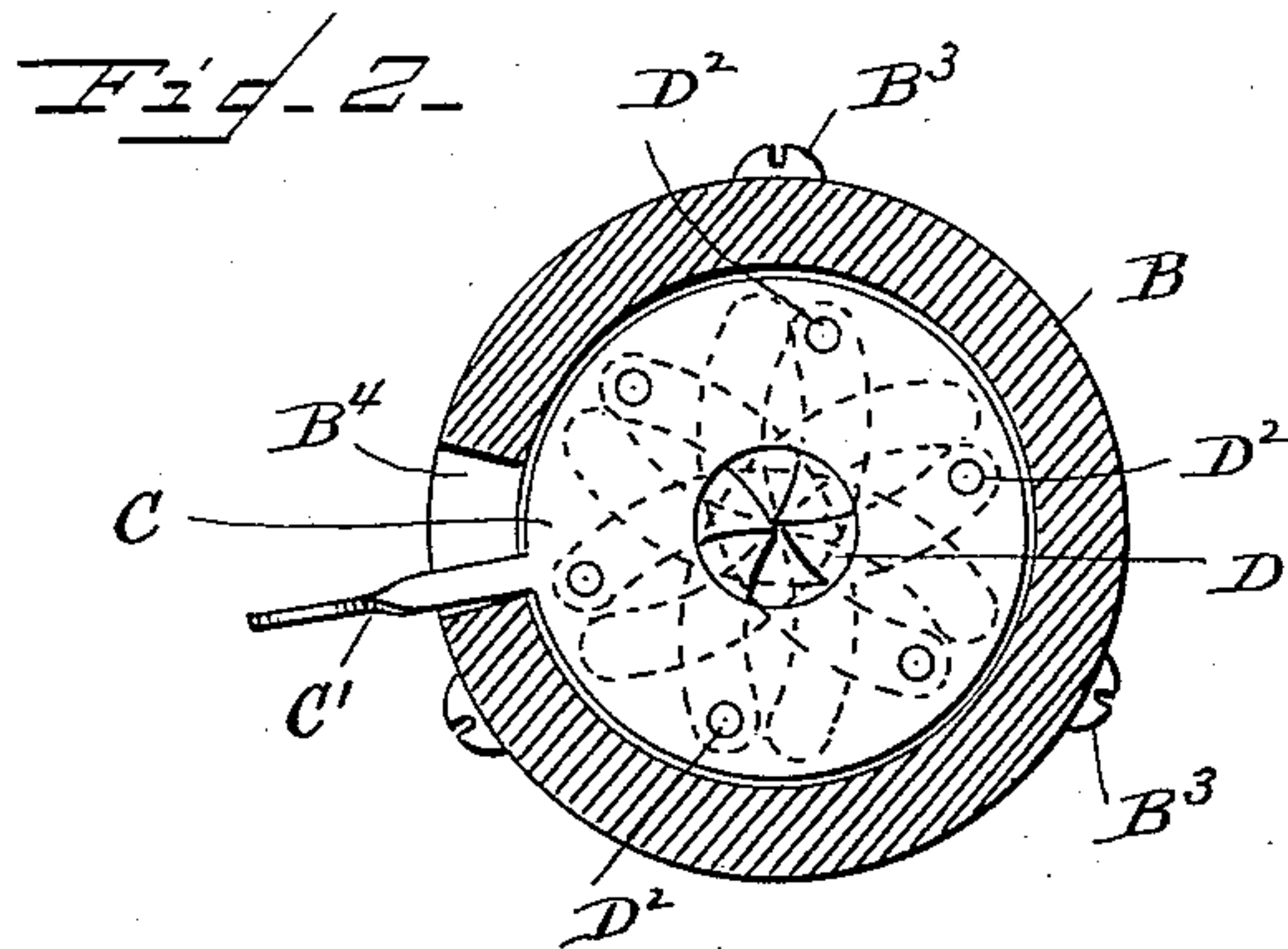
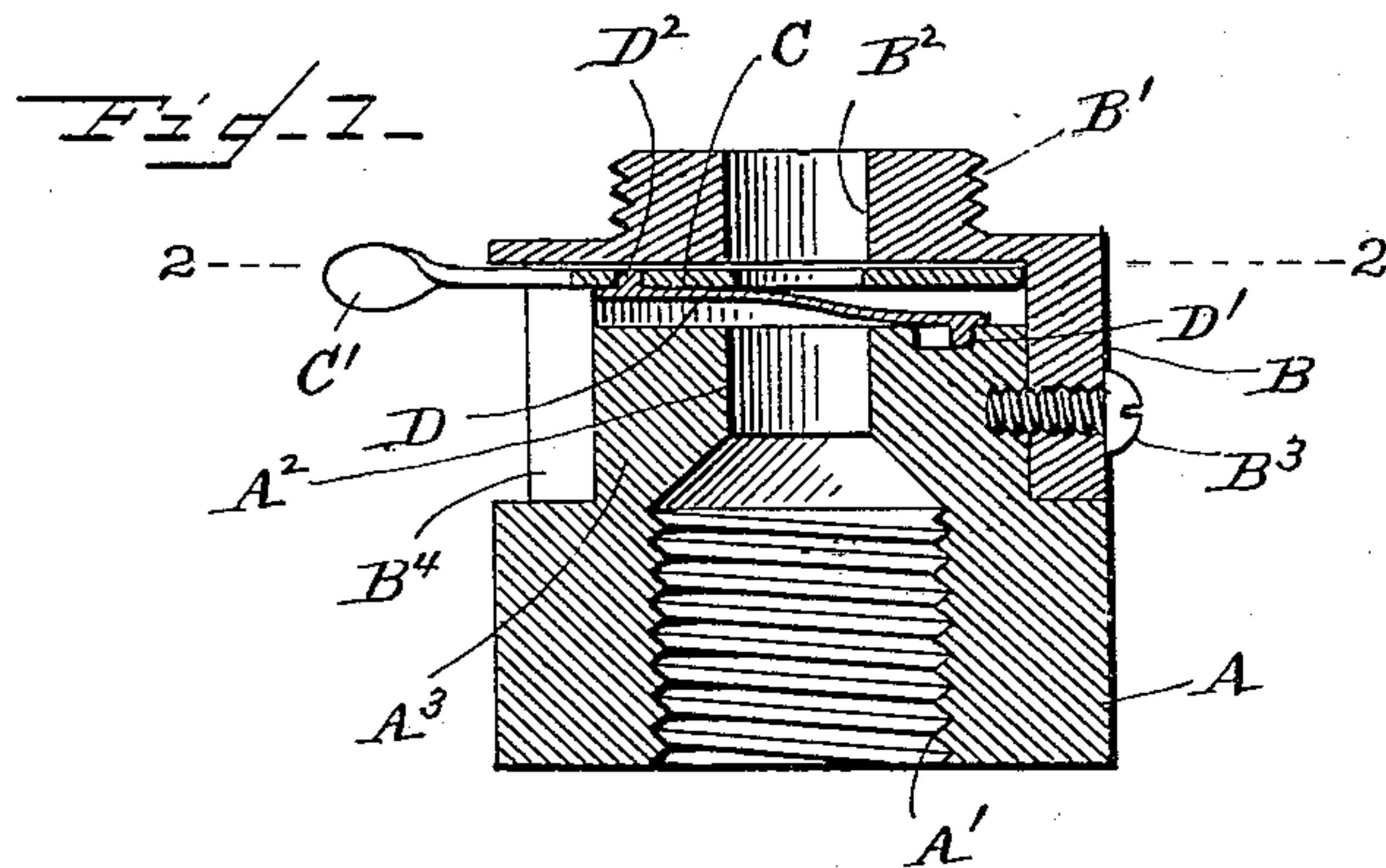


No. 751,107.

PATENTED FEB. 2, 1904.

V. A. RETTICH.  
ADJUSTABLE GAS CHECK.  
APPLICATION FILED JUNE 10, 1903.

NO MODEL.



WITNESSES:

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# UNITED STATES PATENT OFFICE.

VICTOR ALEXANDER RETTICH, OF NEW YORK, N. Y., ASSIGNOR OF ONE-HALF TO STANTON D. BULLOCK, OF MONTCLAIR, NEW JERSEY.

## ADJUSTABLE GAS-CHECK.

SPECIFICATION forming part of Letters Patent No. 751,107, dated February 2, 1904.

Application filed June 10, 1903. Serial No. 160,901. (No model.)

*To all whom it may concern:*

Be it known that I, VICTOR ALEXANDER RETTICH, a subject of the King of England, residing in the borough of Manhattan, in the city and State of New York, (post-office address, No. 224 West One Hundred and Thirty-third street, New York,) have invented a certain new and useful Improvement in Adjustable Gas-Checks, of which the following is a specification.

Adjustable gas-checks are devices having a gas passage-way and a jet-orifice which is adjustable in the sense that its area is capable of being increased or diminished at the will of the operator, thus permitting a greater or less quantity of gas to escape through the jet-orifice.

It is manifestly desirable to construct adjustable gas-checks so as to maintain the highest possible gas-pressure at the jet-orifice and to obtain the greatest velocity of the gas as it enters the mixing-chambers of the Bunsen burner, in connection with which adjustable gas-checks are commonly used, thus producing a strong stream of gas in the direction of the axis of the Bunsen burner; but adjustable gas-checks as constructed prior to my invention have a tendency to reduce the velocity of the gas, or to split the stream of gas into a spray, or to divert it from its desired truly axial direction, which features have unfavorably affected the character of the resultant flame by causing incomplete combustion and in case of incandescent mantle-burners a reduction of the number of heat units obtained and a resulting loss of light.

An adjustable gas-check constructed in accordance with my invention maintains a truly axial stream of gas without checking its velocity, and this irrespective of the size of the opening to which the check may happen to be adjusted.

In the drawings, Figure 1 is a vertical cross-section of an adjustable gas-check with some parts omitted for the sake of clearness, and Fig. 2 is a horizontal cross-section on the line 2 2.

My adjustable gas-check comprises a nipple A, having the threads A' for securing it to a

gas-bracket, a central gas passage-way A<sup>2</sup>, and a reduced portion A<sup>3</sup> for the reception of the cap B. This cap B is rigidly secured to the reduced portion A<sup>3</sup> of the nipple A by screws B<sup>3</sup>, although it may be secured in any other convenient way. The cap B has a screw-thread B' for receiving the Bunsen burner and an inner gas passage-way B<sup>2</sup>, through which the stream of gas passes into the Bunsen burner. The cap B is also provided with a cut-away portion B<sup>4</sup>. The nipple A and the perforated cap B constitute the body of the gas-check.

In the space between the nipple A and the cap B, I mount a series of curved leaves D, each of which has a downwardly-extending pintle D' at one end and an upwardly-extending pintle D<sup>2</sup> at the other end. The downwardly-extending pintles D' of the leaves D are pivoted in the upper surface of the nipple A, and the upwardly-extending pintles D<sup>2</sup> of the leaves D are pivoted in orifices in the annulus C, although this arrangement might be reversed. The annulus C has a central aperture for the passage of gas and an exterior handle C', by which the annulus may be turned back and forth through an angle. The curved leaves D being arranged in the order shown and being pivoted at their respective ends in the manner shown and just described, it will be evident that by turning the handle C' and with it the annulus C in one direction the opening formed at the center of the set of leaves may be diminished in area to any desired extent and that by turning the handle C' in the other direction this opening may be correspondingly increased in area, all on the principle of the well-known iris diaphragm. Each curved leaf D is seen to be pivoted at its upper and lower ends, respectively, to relatively rotatable parts to constitute an adjustable opening in the gas passage-way. The amount of gas which passes upwardly through the gas passage-way A<sup>2</sup> in the nipple A and into and through the gas passage-way B<sup>2</sup> in the cap B is manifestly determined by the size of the opening formed at the center of the set of curved leaves. This opening is nearly circular in form and may be increased or de-



creased in area within wide limits or may be closed entirely. It has been found that an opening of the character which is formed by the set of curved leaves has no tendency to  
5 reduce the velocity of the gas or to split the stream of gas into a spray or to divert it from its truly axial direction, so that when the adjustable gas-check of my invention is used in connection with incandescent lamp-burners  
10 the amount of gas supplied to the burner may be closely adjusted within wide limits of adjustment without interfering with the purity and perfection of the resultant flame.

While I have shown and described a specific form of iris diaphragm which is peculiarly useful, it will be understood that from a broad standpoint any other well-known or improved form of such diaphragm may be employed as a gas-check without departing  
20 from my invention and that I am therefore not limited to the precise construction herein shown and described.

I claim—

1. An adjustable gas-check having a jet-orifice formed by an iris diaphragm, substantially  
25 as described.

2. An adjustable gas-check comprising a set of curved leaves, each pivoted at its upper and lower ends to relatively rotatable parts to  
30 constitute an adjustable opening in the gas passage-way, substantially as described.

3. An adjustable gas-check comprising a set

of curved leaves each pivoted at one end to a rotatable annulus and at the other end to the body of the gas-check, to constitute an adjustable opening in the gas passage-way, substantially as described. 35

4. An adjustable gas-check comprising a nipple and perforated cap constituting the body of the gas-check, and a set of curved  
40 leaves and a rotatable annulus in the space between the nipple and cap, each curved leaf being pivoted at one end to the rotatable annulus and at the other end to the body of the gas-check, substantially as described. 45

5. An adjustable gas-check comprising a nipple and a perforated cap, with a cut-away portion, constituting the body of the gas-check, and a set of curved leaves and a rotatable annulus in the space between the nipple  
50 and cap, the rotatable annulus being provided with a handle lying within the cut-away portion of the cap, and each curved leaf being pivoted at one end to the rotatable annulus and at the other end to the body of the gas-check, substantially as described. 55

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

VICTOR ALEXANDER RETTICH.

Witnesses:

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M. TETZTAFF.