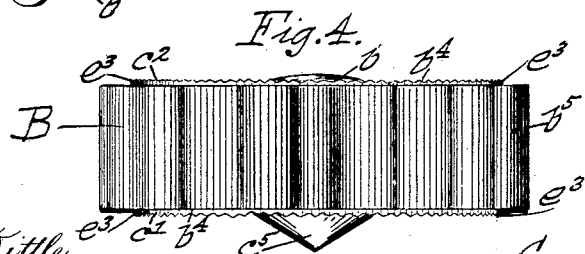
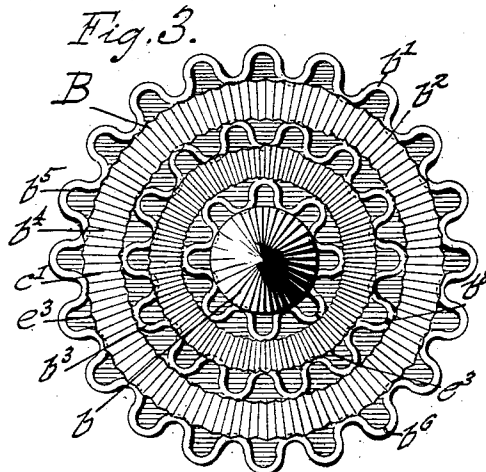
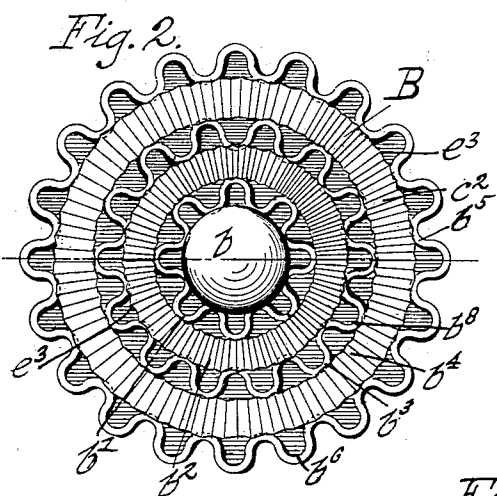
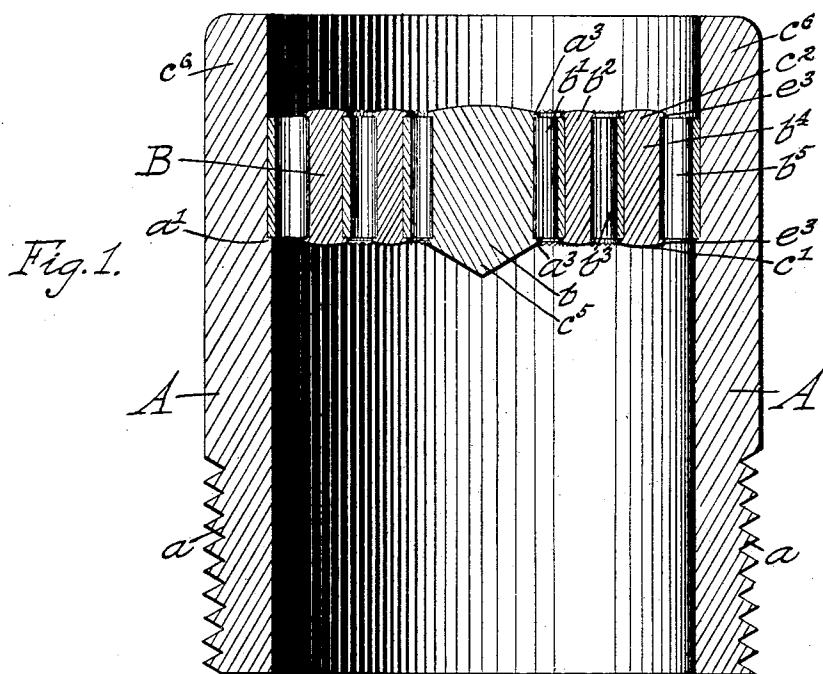


G. MACHLET, JR.
BURNER.

APPLICATION FILED MAR. 31, 1903.

NO MODEL.



WITNESSES

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UNITED STATES PATENT OFFICE.

GEORGE MACHLET, JR., OF ELIZABETH, NEW JERSEY.

BURNER.

SPECIFICATION forming part of Letters Patent No. 733,236, dated July 7, 1903.

Application filed March 31, 1903. Serial No. 150,384. (No model.)

To all whom it may concern:

Be it known that I, GEORGE MACHLET, JR., a citizen of the United States, residing in Elizabeth, in the county of Union and State of New Jersey, have invented certain new and useful Improvements in Burners, of which the following is a specification.

The object of this invention is to provide in a burner having a screen formed of relatively movable members means for promoting the security of the individual members toward each other, so that the combined structure is rendered more durable and the individual parts less liable to displacement.

The object is further to provide in a screen of this type having spaces between the individual members such a fastening means for said members as will not substantially obstruct the free passage of gas and air into and out of said spaces, or at all events will not irregularly impair such passage. A fastening means for this purpose must be one not injuriously affected by extremes of temperature nor subject to disruption under high pressure of combustible gases upon the screen.

The invention consists of a burner-screen composed of a plurality of relatively shiftable members having between them spaces for the passage of a combustible and projections uniformly arranged at the top and bottom of each alternate member of said screen and projecting over the upper and lower edges, respectively, of the adjacent members.

The invention consists, further, in certain details of construction and combinations of parts, which will be fully described hereinafter and finally pointed out in the claims.

In the accompanying drawings, Figure 1 is a vertical central section through a burner constructed according to my invention. Fig. 2 is a top view of the burner-screen. Fig. 3 is a bottom view of said screen, and Fig. 4 is a side elevation of the screen.

Similar letters of reference indicate corresponding parts.

In the drawings, A indicates the burner-tube. At its lower portion said tube is provided with a screw-thread *a* for attachment to any suitable fuel-supply pipe. Within the tube is retained, either frictionally or otherwise, a screen B, composed of a central plug

b and alternating plain and corrugated annular members *b'* *b*² *b*³ *b*⁴ *b*⁵. An annular shoulder *a'* on the burner-tube A limits inward movement of the screen. By the corrugation of the members *b'* *b*³ *b*⁵ a series of passages uniformly distributed are provided for the passage of the combustible gas.

For securing the members *b'* *b*² *b*³ *b*⁴ *b*⁵ together the intermediate members *b*² *b*⁴ are provided at their upper and lower edges with a series of lateral or radial projections *e*³, extending into engagement with the corrugated members—that is to say, extending beyond the upper and lower edges of the same—so that said corrugated members are located between the projections *e*³ at the top and bottom of the intermediate members *b*² *b*⁴. Said projections are arranged uniformly around the entire circumference of said members, so as to render uniform such slight obstructions as they present to the free passage of the combustible. It is obvious that these projections may be replaced by annular flanges arranged in the same location as the projections—namely, one at the upper inner edge of each intermediate member *b*² *b*⁴, one at the upper outer edge of said member, one at the lower inner edge of said member, and one at the lower outer edge of said member. Said projections or flanges are preferably made of the same width as the thickness of the corrugated members, so as to afford the greatest possible hold upon said members consistent with accompanying obstruction to the gas-flow.

Within the innermost corrugated member *b'* is located a plug provided at its upper and lower edges with retaining-flanges *a*³, between which said member *b'* is received.

The annular corrugated members may be severed members—in other words, corrugated strips bent into circular form and the meeting ends not connected, as indicated at *b*⁶ and *b*⁸. In such case and in case said members have not in themselves sufficient spring tension to retain themselves clasped upon the intermediate plain cylindrical members of the screen means may be adopted for retaining said corrugated members in position. In the construction shown the tube A and member *b*⁴ provide such means as to the corru-

gated members between them, and as to the inner corrugated members the plain cylindrical members and plug provide such means.

The series of annular projections c^3 may be produced by any suitable means—as, for example, by use of a nurling-tool of proper dimensions. When this means is pursued, the plain cylindrical members are made of slightly greater depth than the corrugated members and the projections knurled out of the excess. In order to aid in the uniform and undisturbed supply of combustible to the passages between said corrugated and plain annular members, I knurl said plain members over the entire width of their exposed lower faces c' , and I so direct the nurling-tool that the indentations made by the same are located radially of the screen, and thereby form radial channels for directing the supply of combustible gas into the passages between the annular members, thereby assisting materially in the uniformity and regularity of the supply. For convenience the upper surfaces c^2 of the plain annular members may be also radially knurled, so that the burner-screen may be inserted in either position and may be reversed should the channels at one side become clogged. For directing the supply of combustible forcibly toward said radial channels the lower portion of the central plug b is coned, and the conical portion c^5 extends below said radial channels. The cone c^5 acts to uniformly divide and distribute the approaching mixture and laterally direct the same uniformly into the radial channels and the passages between the annular members. The cone c^5 specially facilitates the use of air and gas under high pressure, whereby to produce a high heat. The outer rim c^6 , formed by the upper portion of the burner-tube A, protects the flame against the ingress of the outside air, whereby a steady reliable burning is obtained.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. A burner-screen, consisting of a plurality of relatively movable members affording between them passages for a combustible, and means on some of said members for positively engaging others of the same, substantially as set forth.

2. A burner-screen, consisting of a plurality of relatively movable members affording

between them passages for a combustible, and projections uniformly arranged at the top and bottom of each alternate member and projecting over the upper and lower edges respectively of the adjacent members, substantially as set forth.

3. A burner-screen, consisting of a plurality of relatively movable members affording between them passages for a combustible, some of said members being severed members, projections uniformly arranged at the top and bottom of each alternate member and projecting over the upper and lower edges respectively of the adjacent members, and means for securing said members in engagement, substantially as set forth.

4. A burner-screen, consisting of a plurality of members affording between them passages for a combustible, and channels on the surfaces of said members adjacent said passages, substantially as set forth.

5. A burner-screen, consisting of a plurality of annular members affording between them passages for a combustible, and radial channels on the surfaces of said members adjacent said passages, substantially as set forth.

6. A burner-screen, consisting of a plurality of annular members affording between them passages for a combustible, and radial channels on the exposed lower edge of alternate members, substantially as set forth.

7. A burner-screen, consisting of a plurality of members affording between them passages for a combustible, channels on the surfaces of said members adjacent said passages, and a coned plug extending at its conical portion beyond the entrance ends of said channels, substantially as set forth.

8. A burner-screen, consisting of a plurality of annular members affording between them passages for a combustible, radial channels on the surfaces of said members adjacent said passages, and a central coned plug extending at its conical portion beyond the entrance ends of said channels, substantially as set forth.

In testimony that I claim the foregoing as my invention I have signed my name in presence of two subscribing witnesses.

GEORGE MACHLET, JR.

Witnesses:

HENRY J. SUHRBIER,
FREDERICK STARKE.