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 REMOVABLE GENERATOR FOR HYDROCARBON LAMPS.
 APPLICATION FILED NOV. 14, 1910.

995,370.

Patented June 13, 1911.

Fig. 1.

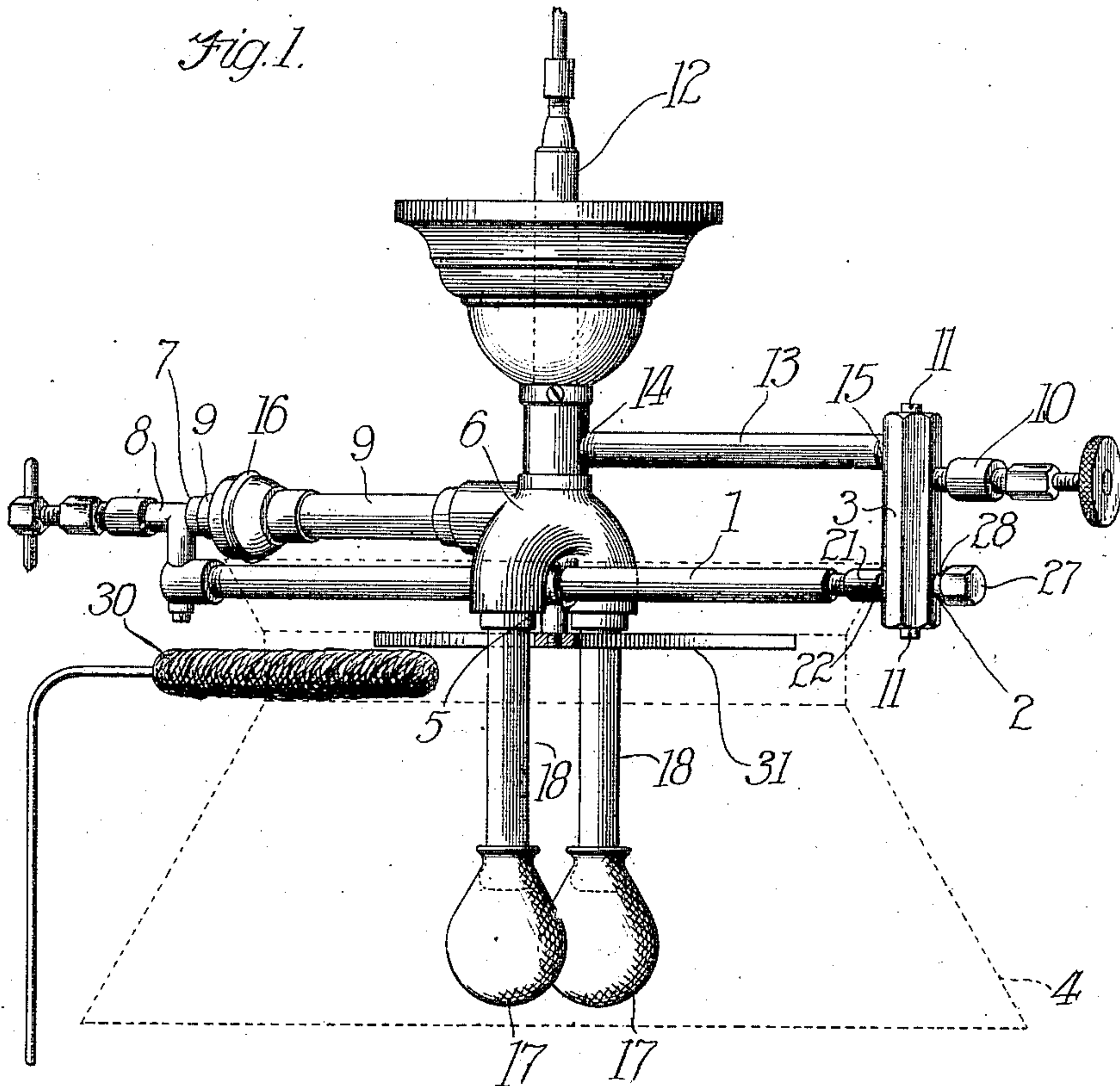


Fig. 2.

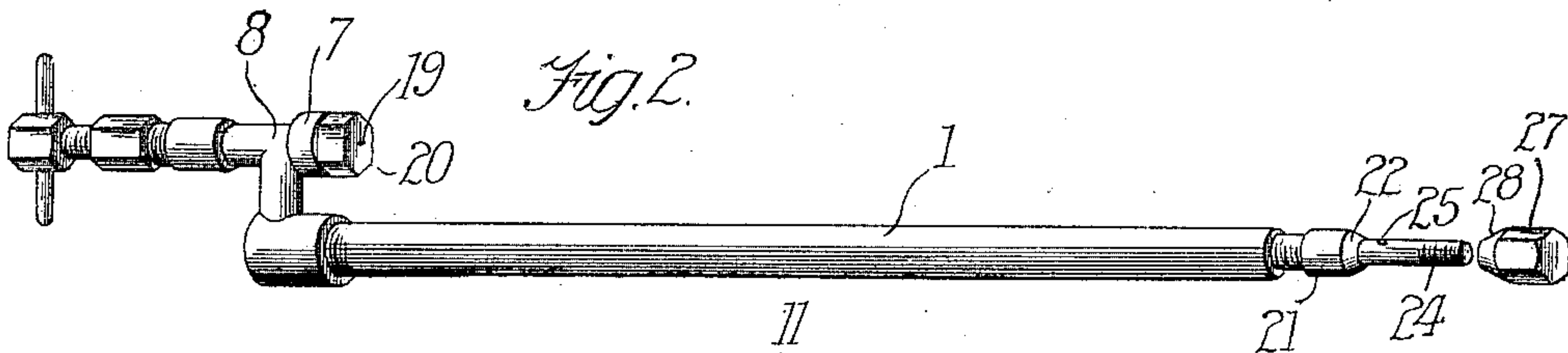
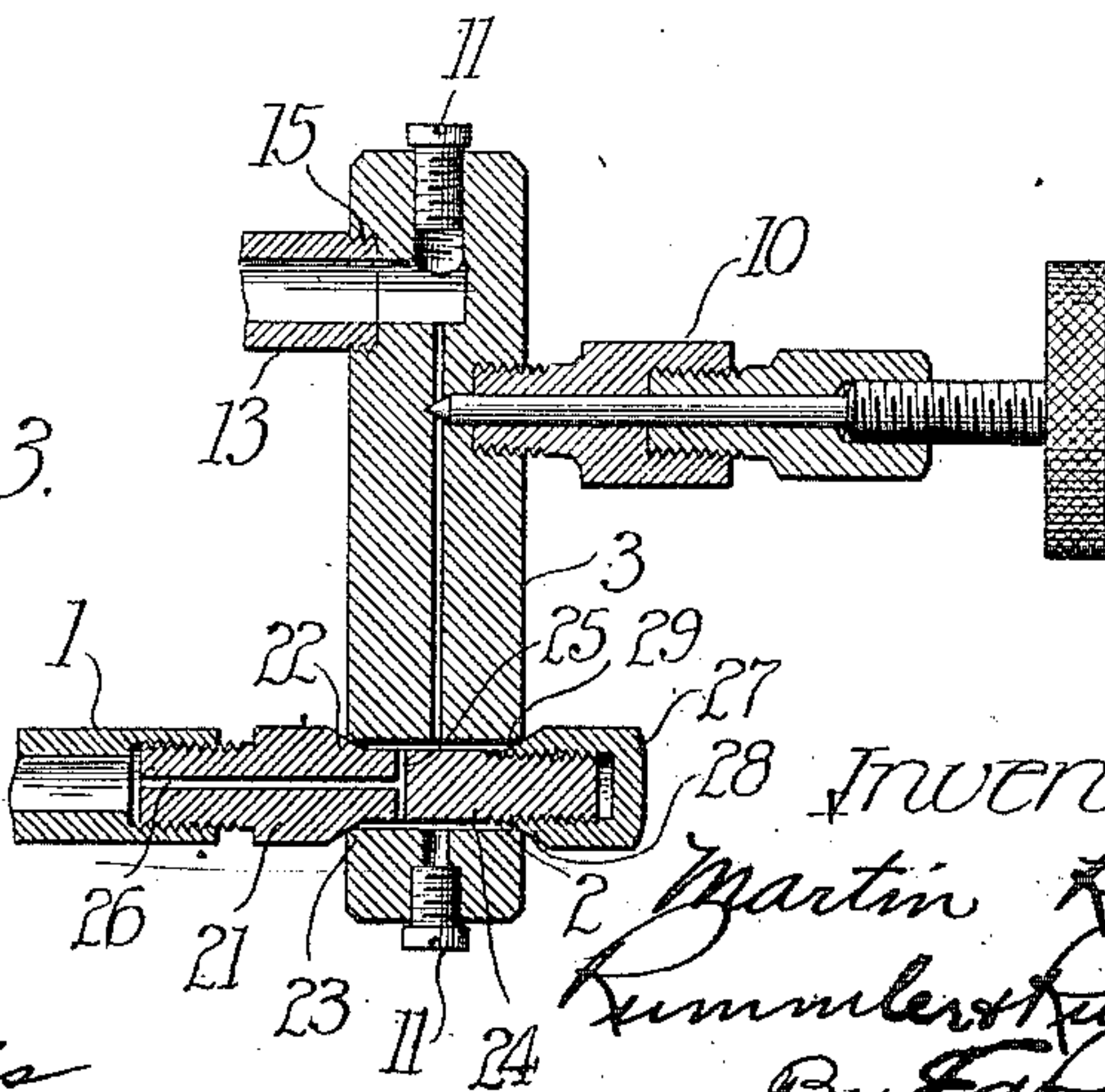


Fig. 3.



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UNITED STATES PATENT OFFICE.

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REMOVABLE GENERATOR FOR HYDROCARBON-LAMPS.

995,370.

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To all whom it may concern:

Be it known that I, MARTIN ROCKSTEAD, a citizen of the United States of America, and a resident of Chicago, county of Cook, State of Illinois, have invented certain new and useful Improvements in Removable Generators for Hydrocarbon-Lamps, of which the following is a specification.

The main objects of this invention are to provide, in a hydrocarbon oil burner, an improved removable generator; to provide an improved construction adapted to permit the generator to be quickly removed and replaced without waiting for the lamp to cool, or disturbing any other member of the structure; to provide an improved, rapid-acting, mechanically locking fluid-tight joint particularly suitable for connecting the generator with an adjacent part; and to provide improved means for supporting the generator.

A specific construction embodying this invention is illustrated in the accompanying drawings, in which:—

Figure 1 is a perspective view of a hydrocarbon gas burner, the casing being shown by a dotted outline, and an auxiliary starting torch in working position. Fig. 2 is the generator unit removed from the lamp. Fig. 3 is a sectional detail of the joint between the generator and the fuel inlet tube.

In the structure shown, the removable generator 1 is supported at three places; first, by a fluid-tight joint 2 between the generator 1 and the fuel inlet member 3, which is located outside of the lamp casing 4; second, by a strap or band 5 which is integral with the body member 6; and third, by a sliding contact between the shoulder 7 on the valve fitting 8 and the inner surface of the mixing tube 9.

The fuel supply to the generator 1 is controlled by the needle valve 10, which is located on the fuel inlet member 3. The ends of the longitudinal bore of the inlet member 3 are closed by the plug screws 11, and passage for the fuel is provided from the main supply pipe 12 to the fuel inlet member 3 by a supporting pipe 13, which has a screw-threaded connection at 14 with a cavity in the body member 6, which connects directly with the main supply pipe 12. The supporting supply pipe 13 also has a screw-threaded connection at 15 with the fuel supply member 3.

The Bunsen burner effect is produced by the usual air openings in the mixing tube 9, which are controlled and hidden by the usual sliding collar 16. In the form shown, gas is delivered to two mantles 17 by way of tubes 18, depending from the body member 6, which connects with the mixing tube 9. The delivery of gas from the generator to the mixing tube 9 is controlled by a self-cleaning needle valve 8, in which the needle point 19 projects through the tip 20 when the valve is closed. Fluid fuel is conducted to the mixer by the fuel supply members 12, 13, 3, 1, and 8.

The joint between the generator tube and the fuel inlet member 3 is of novel construction. The receiving end 21 of the generator 1 is provided with a conical shoulder 22 which coacts with the sloping shoulder 23 formed in the horizontal passage 24 in the fuel inlet member 3. There is enough clearance between that portion of the end beyond the shoulder 23 and the wall of the passage 24 to form a path for the fuel from the inlet pipe 3 to the transverse bore 25 and the connecting longitudinal bore 26 in the generator end 21. The generator is locked in position by a screw cap 27, which is also provided with sloping shoulders 28, which coact with the sloping shoulders 29 in the passage 24. The shoulders 22, 23, 28, and 29, together form a double cone joint, which, with slight pressure, becomes fluid-tight.

To start the lamp, an auxiliary bibulous torch 30 is lighted and inserted through an opening in the casing 4, to occupy a position near the horizontally disposed generator. As soon as the generator is heated, the lamp is ready to start.

The part 31 which appears in full lines in Fig. 1 is a spider which supports the casing 4.

In operation, the generator is first heated to a temperature which will vaporize the fuel, then fuel is admitted to the generator by opening the needle valve 10 in the oil inlet pipe 3. The flow of the gas from the generator may be controlled by the needle valve 8, but the main function of the needle point is to clean the outlet orifice. Gas is delivered to the mixing tube 9, and the proportion of air to give a Bunsen burner mantle flame is obtained by controlling the air supply with the usual sliding collar 16.

The mixing tube delivers the mixed gas to a passage in the body member, from which there are two delivery pipes 18, to which are secured the usual inverted type mantles 17.

5 As soon as the burners are started, the heat from the burners is communicated to the generator which is located above and between the burners. The principal source of difficulty in the operation of this class of
10 hydrocarbon lamp has been that the generator becomes clogged, and the operation of the lamp is suspended, owing to the inability of the repairer to touch the generator until the lamp has cooled off, and then the
15 removal of the generator could only be accomplished by dismantling the lamp, which requires the use of special tools, and special skill in replacing the parts to insure gas-tight joints. In the lamp here shown, the
20 generator can be readily removed as a unit, because the fluid-tight joint is exterior of the casing, and is usually cool enough so that it can be loosened with the fingers and entirely removed from the lamp without
25 disturbing any other part of the lamp. This construction makes it possible to rapidly remove a faulty generator or gas tip and insert an operative one without the use of any tools and without stopping the operation of
30 the lamps more than a few minutes.

Although but one specific embodiment of this invention is herein shown and described, it will be understood that numerous details of the construction shown may be altered
35 or omitted without departing from the spirit of this invention, as defined by the following claims.

I claim:—

40 1. The combination of a pair of fuel supply members, one having a passage there-

through and having conical seats at both ends of said passage, the other said member having a screw-threaded end extending through said passage, a shoulder on said other member adapted to fit one of said
45 seats, and a cap fitting said threaded end and having a shoulder adapted to fit the other of said seats, for the purpose specified.

2. In a hydrocarbon burner, the combination of a fuel supply member having a pas-
50 sage therethrough, conical seats at both ends of said passage, a generator having a reduced and screw-threaded end smaller in diameter than said passage and adapted to extend through said passage, a shoulder on
55 said generator adapted to fit one of said seats, and a screw cap threaded on said generator and having a shoulder adapted to fit the other of said seats, for the purpose specified.
60

3. In a hydrocarbon burner, the combination of a fuel supply member, a passage through said member, seats at both ends of said passage, a generator having an integral
65 shoulder adapted to fit one of said seats and having a reduced part extending through said passage and threaded at its end, and a cap threaded on said end and having a shoulder shaped to fit the other of said seats and adapted to coact therewith to form a
70 fluid-tight connection between said member and generator, and said reduced part having therein an interior cavity communicating with said passage between said seats.

Signed at Chicago this 8th day of November, 1910. 75

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Witnesses:

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