

No. 719,469.

PATENTED FEB. 3, 1903.

W. R. JEAUVONS.  
HYDROCARBON BURNER.  
APPLICATION FILED DEC. 12, 1901.

NO MODEL.

FIG. 1.

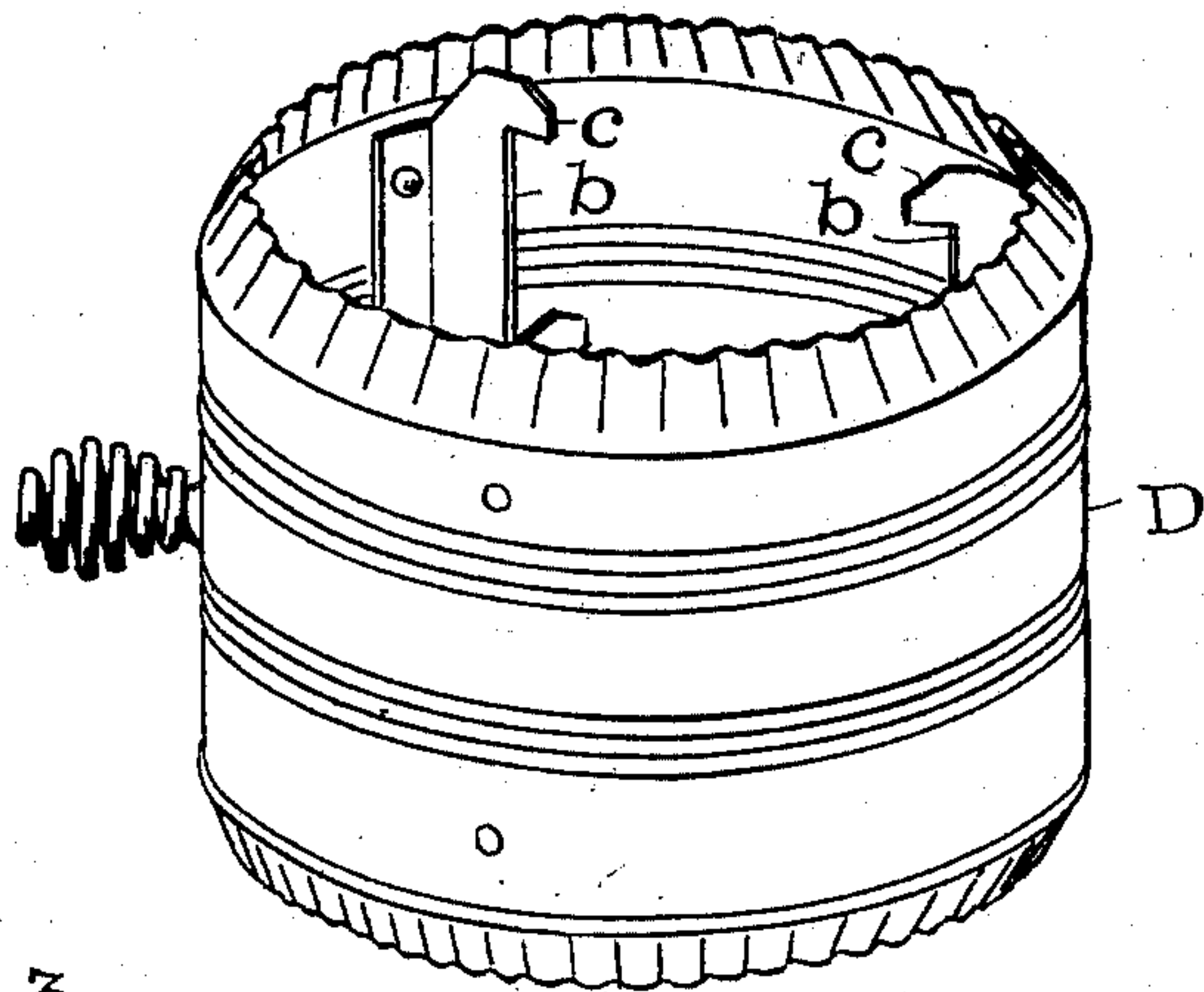


FIG. 3.

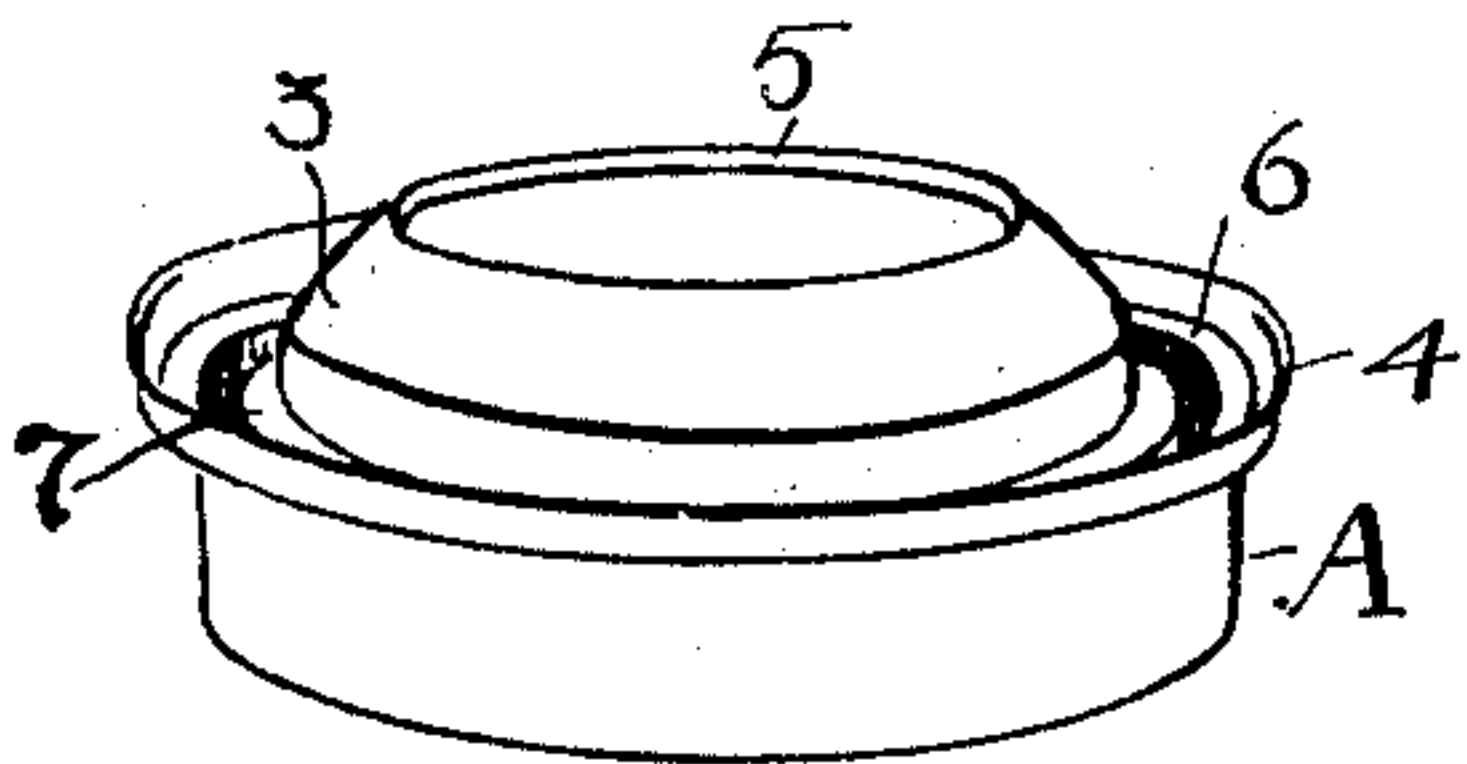


FIG. 4.

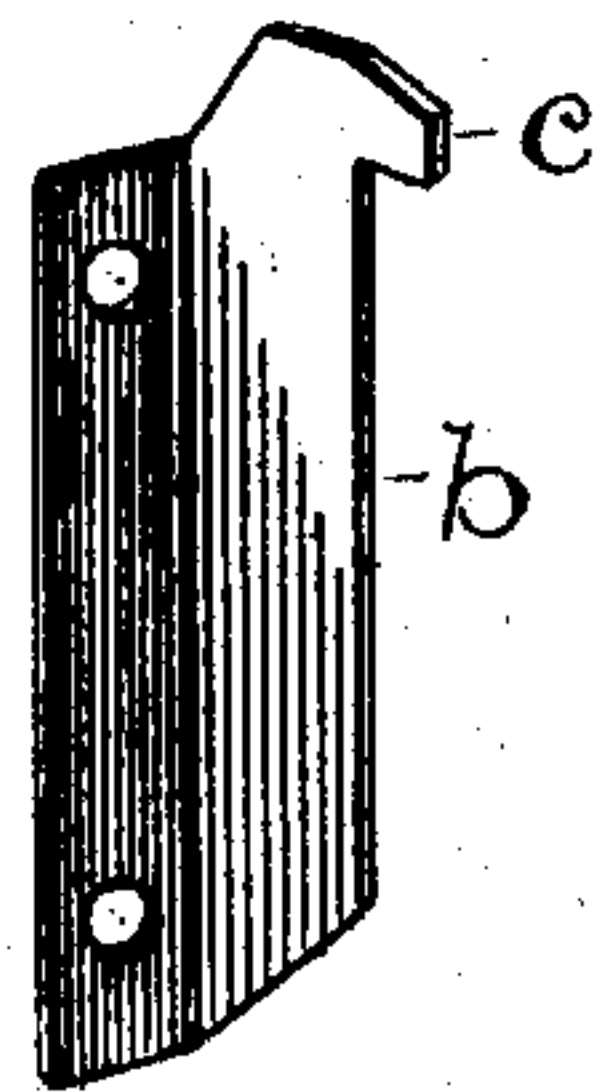
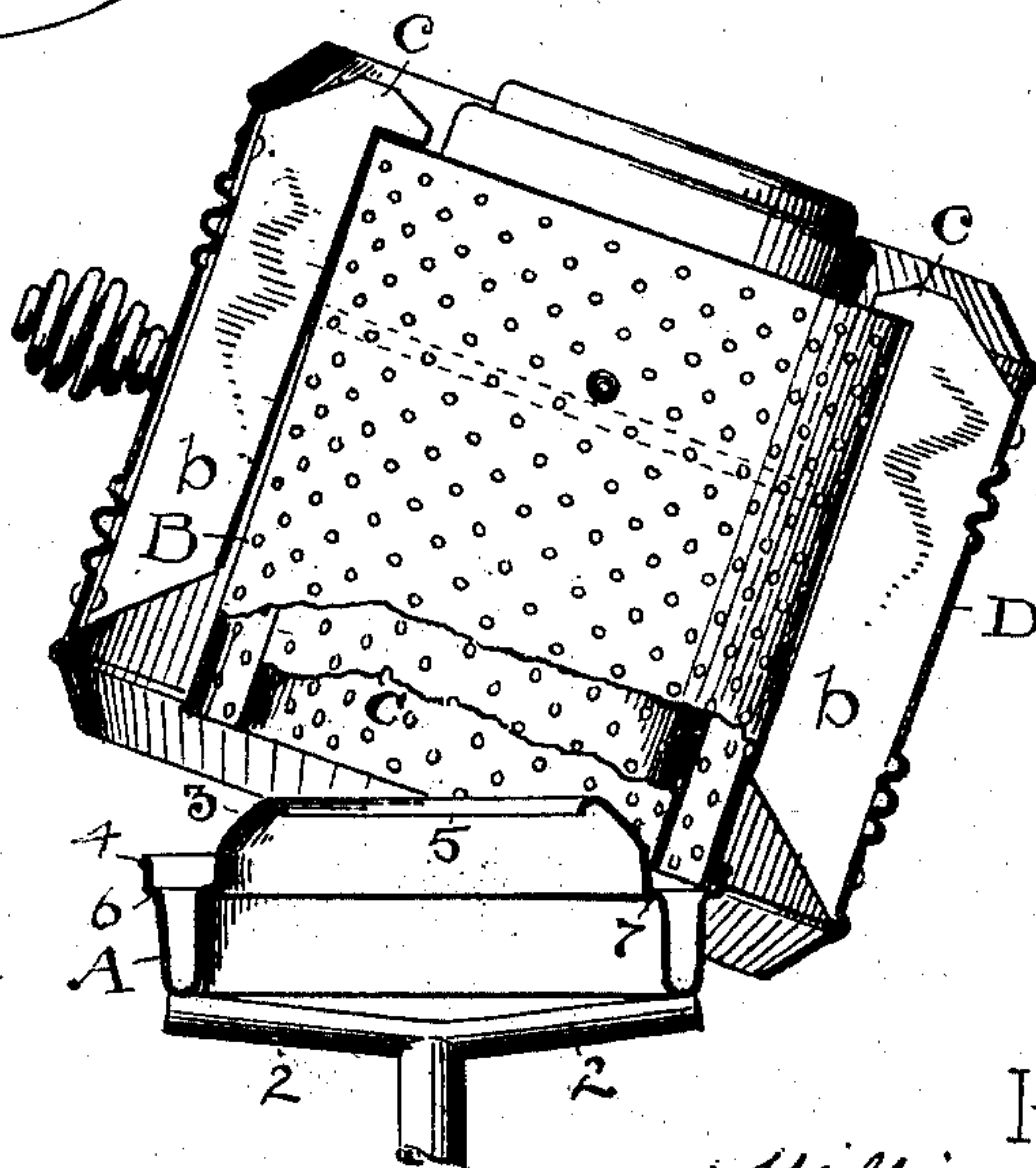


FIG. 2.



ATTEST

*T. B. Moser.*  
*T. Madden.*

INVENTOR

*William R. Jeavons*

BY *W. J. Fisher* ATTORNEY



# UNITED STATES PATENT OFFICE.

WILLIAM R. JEAVONS, OF CLEVELAND, OHIO.

## HYDROCARBON-BURNER.

SPECIFICATION forming part of Letters Patent No. 719,469, dated February 3, 1903.

Application filed December 12, 1901. Serial No. 85,802. (No model.)

*To all whom it may concern:*

Be it known that I, WILLIAM R. JEAVONS, a citizen of the United States, residing at Cleveland, in the county of Cuyahoga and State of Ohio, have invented certain new and useful Improvements in Hydrocarbon-Burners; and I do declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to hydrocarbon-burners; and the invention consists in the construction, combination, and arrangement of parts, all substantially as shown and described, and particularly pointed out in the claims.

In the accompanying drawings, Figure 1 is a perspective view of a new construction of drum forming an element embodied in this invention and constituting also a new article of manufacture and sale. Fig. 2 is a sectional elevation of the entire structure involved in this invention and showing what presumably is a fixed burner-bowl and burner-tubes and drum in tilted relation thereto, as occurs when the burner is being started or initially lighted by means of a match or taper. Fig. 3 is a perspective view of the burner-bowl alone, and Fig. 4 is a perspective view of one of the spacing vanes or plates on the interior of the drum.

It is of course known to be old in the present development of this art to tilt burner-tubes and drum for the purpose of lighting, and this in itself is not broadly new here as a function or adaptation of the parts; but there is novelty in the construction of the parts whereby this may be done more reliably than heretofore and with certainty of having the parts always seat themselves aright, which has not been the case in former constructions, and then there is novelty also in the construction of the drum and its connection with the burner-tubes, in that the drum is a separate and removable part and can be bodily lifted away from the burner at any time, and yet it is so associated therewith in use that both can be tilted together and restored to place the same as if they were mechanically and inseparably connected, as in the old constructions now generally in use. This also has the further advantages of leav-

ing the drum free as an article of manufacture and sale, and especially of enabling the user to remove it at any time for cleaning the parts. In the nature of things these closely-associated parts are liable to become more or less foul in time, rendering cleansing necessary; but when they are bolted or otherwise permanently locked together, as heretofore, it has been very difficult to enter the inner spaces or to reach the inner surfaces for this purpose; but by making the drum so that it can be lifted off from the tubes the operation is simple and easy enough for cleansing both tubes and drum.

Now referring again to the drawings, Fig. 2, A represents the burner-bowl, having its usual tubular and oil-supplying arms 2 and provided according to this invention with a substantially dome-shaped inner upward extension 3. This extension rises above the outer edge 4 of the bowl and inclines inward all around, preferably on a somewhat-curved line, and projecting, as it does, to a point above the lowest rows of perforations in the inner tube C, it serves to shield or protect said perforations from vagrant air-drafts, and inasmuch as the burner is more sensitive to drafts at the lower air-openings than at points higher up the protection afforded by the said extension or shield 3 contributes very materially to the steadiness of the flame. It is also preferable that the shield be formed integral with the inner portion of the bowl, as the radiant heat intercepted by the said shield from the interior of the tube C is then more readily conducted to the body of the bowl, where vaporization occurs. The top of the bowl has the usual seats 6 and 7 about its top for the burner-tubes B and C, which are rigidly united, and the extension 3 rises from about inner seat 7 at such elevation that it becomes at once an unerring guide in seating the tubes both when they are tilted for lighting and when they are replaced after removal for cleansing or other reason. Heretofore there has been constant danger that the burner-tubes would not be brought back aright to their seats, because there was no guide which was sufficient for this purpose and for the further reason that it was not easy to see whether they were properly seated. Then it also occurs that in their haste or careless-



ness persons would not see that these tubes were rightly placed before using them and had work inevitably followed; but by means of my peculiarly-shaped extension 3 proper seating occurs inevitably when the tubes are lowered, because they find their places by gravity about the base of the extension after being released by hand if they have not been properly seated in the first place. This of course occurs also after tilting the burner, as in Fig. 2, for lighting through the medium of the usual asbestos ring or other lighting device. (Not shown.)

As seen in Fig. 2, the drum D hangs upon the burner-tubes and is movable with them in that position as formerly, when they were inseparable, and to this end the drum is provided with vanes or plates *b*, affixed thereto and serving to space it apart from the tubes and keep it in the right relation thereto, and these vanes have hooks *c* at their top engaged over the outer burner-tube, substantially as as shown. In this way the drum is suspended upon or from the top of the burner-tubes and is easily removable therefrom, but otherwise is held in the same operating relation as formerly, with all the advantages found in the old construction. Obviously other suitable means than the vanes here shown may be adopted to take their place, the object in any case being to utilize said vanes as guides and spacers for the drum in respect to the burner-tubes and as hooks to hang them thereon. Of course separate hooks and spacers could be used and a widely-different construction from the vanes and hooks *b c* adopted and serve the same purpose; but these are cheap and easily applied, and hence embody the present preferred form.

What I claim is—

1. In hydrocarbon-burners, a set of burner-tubes and a drum separated therefrom provided with spacers on its inside to hold it uniformly apart from said tubes and hooks on the said spacers to suspend the drum from said tubes, substantially as described.

2. The combination of the burner-bowl having an integral annular burner-tube guide extending above the plane of the outer edge of the bowl and provided with an inwardly-converging guiding-surface above the outer edge of the bowl, a set of burner-tubes seated on said bowl around said guide, and an inde-

pendent drum suspended by hooks from the top of said tubes and provided with spacers to hold the drum uniformly apart from said tubes all around, substantially as described.

3. A drum for hydrocarbon-burners provided with vertical spacers on its inside and hooks at its top to support it in a suspended position, in combination with burner-tubes engaged by said hooks, substantially as described.

4. The drum substantially as shown and vertically-arranged spacers fixed at intervals to the inside of the drum and provided with inward projections at their top, in combination with a set of burner-tubes supporting said drum, substantially as described.

5. In hydrocarbon-burners, a set of burner-tubes and a drum provided with vertically-disposed spacers on its inside to keep it equally apart all around from the burner-tubes, said spacers having inwardly-projecting hooks at their top for supporting the drum, substantially as described.

6. The inner and outer perforated tubes, and the burner-bowl provided with an imperforate extension projecting inward and upward to a plane above the outer portion of the bowl and above the lower perforations in the said inner tube and forming a draft-shield for the inner tube, substantially as described.

7. The burner-bowl provided with a draft-shield having an annular tapered surface extending inward and upward to a higher plane than the outer portion of the bowl and integral with the bowl, in combination with burner-tubes having air-inlet openings behind said draft-shield, substantially as described.

8. In hydrocarbon-burners, a burner-bowl provided at its inner portion with an inwardly-inclined annular draft-shield and tube-guide rising above the plane of the outer portion of the bowl, in combination with burner-tubes, the inner of said tubes having perforations on a plane below the upper edge of said shield and guide.

Witness my hand to the foregoing specification this 30th day of November, 1901.

WILLIAM R. JEAVONS.

Witnesses:

R. B. MOSER,

H. T. FISHER.