

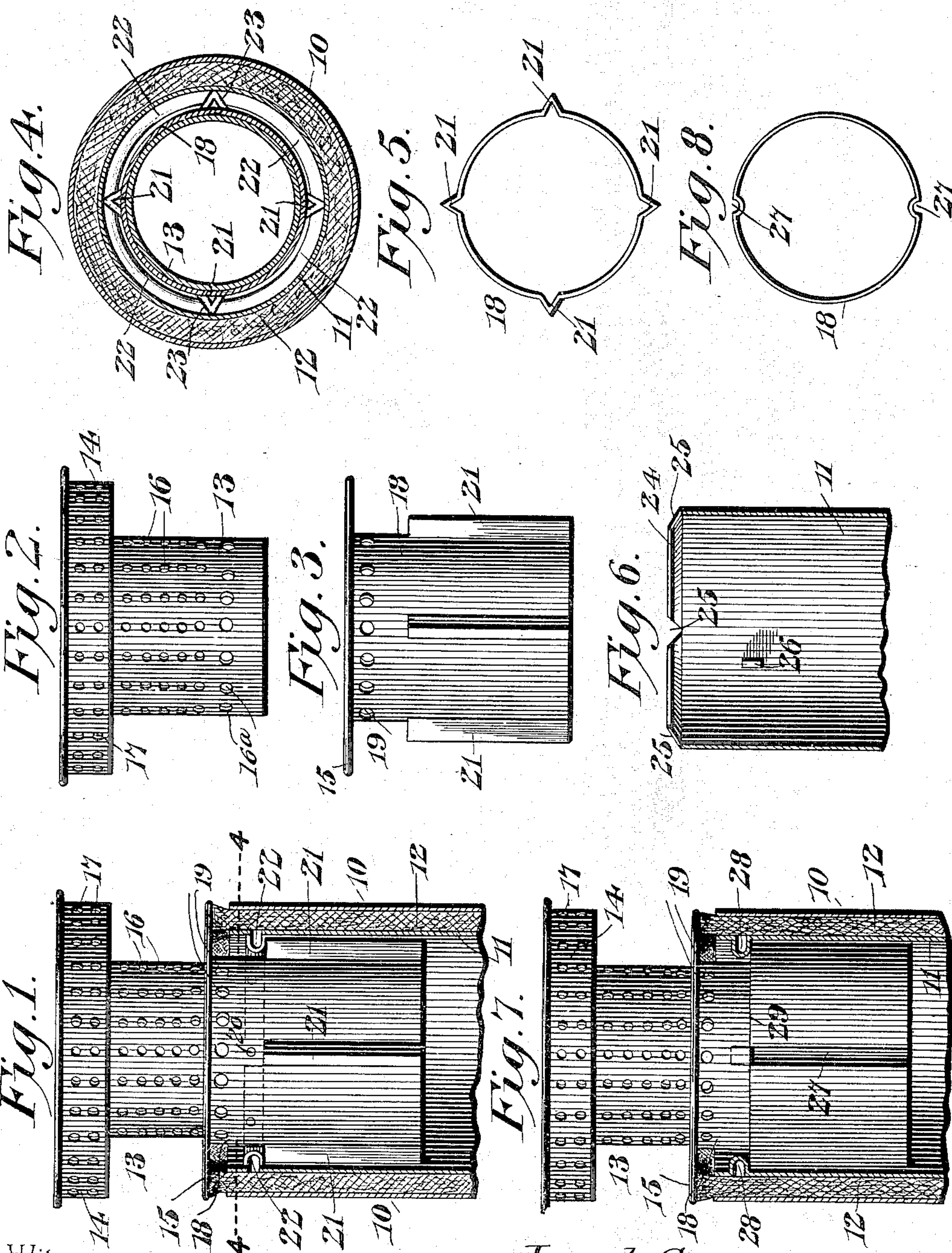
No. 661,517.

Patented Nov. 13, 1900.

J. GREGORY.
LAMP BURNER.

(Application filed Aug. 30, 1899.)

(No Model.)



Witnesses

James K. McLaughlin

H. J. Benhoff

By His Attorneys,

Joseph Gregory Inventor

Cashnow & Co.

UNITED STATES PATENT OFFICE.

JOSEPH GREGORY, OF NEW YORK, N. Y.

LAMP-BURNER.

SPECIFICATION forming part of Letters Patent No. 661,517, dated November 13, 1900.

Application filed August 30, 1899. Serial No. 728,991. (No model.)

To all whom it may concern:

Be it known that I, JOSEPH GREGORY, a citizen of the United States, residing at New York, in the county of New York and State of New York, have invented a new and useful Lamp-Burner, of which the following is a specification.

My invention relates to improvements in lamp-burners of the general type disclosed in my prior application for Letters Patent, filed April 27, 1898, Serial No. 678,972, in which is disclosed a burner for a lamp or stove having concentric wick-tubes forming an intermediate wick-space and a flame-spreader mounted in the inner wick-tube for adjustment vertically therein.

In my present improvement I have provided an improved construction of inner wick-tube and of the flame-spreader by which the vertical movement or adjustment of the latter and its guard-flange in an upward direction is positively arrested, to the end that the guard may rest upon the upper edge of the wick, whereby the wick is prevented by the stopping of the spreader from being lifted too high in the wick-tube and smoking obviated, and at the same time the flame-spreader is adapted for expeditious insertion in or removal from the wick-tube without the necessity of operating fastening devices, so that the flame-spreader may be easily removed for the purpose of cleansing the same when required.

In its broad aspect the invention consists in the provision of coacting flanges and ribs on the inner wick-tube and on the lower part of a flame-spreader adapted for mutual cooperation to arrest the upward movement of the flame-spreader, one of said elements being notched to permit the flame-spreader to be lifted out of the wick-tube.

The invention further consists in the novel construction and arrangement of parts, which will be hereinafter fully described and then claimed.

The improvements which I have made in lamp-burners of this type may be embodied in different forms, and in the accompanying drawings, forming a part of this specification,

I have represented a preferred and modified construction, each of which contains means by which the flame-spreader is arrested in its upward movement and which permits said spreader to be expeditiously removed.

In said drawings, Figure 1 is a vertical sectional elevation of part of a lamp-burner of the central-draft variety embodying the preferred form of my improvements. Figs. 2 and 3 are detail views in elevation of the two parts or members detached one from the other and adapted for assemblage and union to produce a flame-spreader of the type shown by Fig. 1. Fig. 4 is a transverse sectional plan view on the plane indicated by the dotted line 4 4 of Fig. 1. Fig. 5 is an end view looking at the lower end portion of the flame-spreader. Fig. 6 is a detail sectional view of a modified construction of the inner wick-tube adapted for service in connection with a flame-spreader such as shown by Fig. 1. Fig. 7 is a sectional elevation of a portion of a lamp-burner somewhat similar to Fig. 1, but illustrating a modified construction of the flame-spreader and the inner wick-tube. Fig. 8 is an end view of the lower portion of the flame-spreader shown by Fig. 7.

The same numerals of reference are used to indicate like and corresponding parts in each of the several figures of the drawings.

The general construction of the lamp-burner is similar to that of central-draft lamps in that the burner includes an inner wick-tube 11 and an outer wick-tube 10, said wick-tubes arranged concentric to provide an intermediate annular space adapted for the reception of a round wick 12. Within the upper portion of the inner wick-tube 11 is fitted the lower portion of a flame-spreader 13, said spreader extending above the wick-tubes and the wick in an ordinary manner for the purpose of spreading the flame issuing from the wick and of supplying air to different portions of the flame, so as to secure an increased brilliancy of the light, proper distribution of air to the flame, and to minimize smoking of the lamp. The flame-spreader herein disclosed is similar in material respects to the spreader disclosed by my

prior application, to which reference has been made—that is to say, the spreader is of generally tubular form, with an enlarged button or head 14 and an annular flange 15 below said head and parallel therewith, the cylindrical body of the spreader being provided with a multiplicity of air-perforations 16 and the rim of the button or head 14 having a plurality of air-perforations 17.

As hereinbefore indicated briefly, the gist of the present improvement resides in the provision of flanges and ribs on the inner wick-tube and the flame-spreader to limit the upward movement or adjustment of the spreader with relation to the wick-tube, while securing the desirable introduction or removal of said spreader into or from said inner wick-tube.

In one adaptation of this invention I prefer to construct the spreader in two sections or members, the upper member of said spreader being indicated by the numeral 13, while the other lower member of the spreader is indicated by 18. This lower member is generally of tubular form and of a diameter to receive the lower portion of the cylindrical body 13, constituting the upper member of the spreader, the two members 13 18 being united firmly together by means of suitable fastening devices, such as the rivets 20. (See Fig. 1.) The lower tubular member of the flame-spreader is provided with the annular flange 15 at its upper end and with a series of air-perforations 19 immediately below said flange. One of the important features in the construction of this lower member of the flame-spreader resides in the provision of a series of longitudinal ribs 21 on the external surface of the said spreader member 18, the upper ends of said ribs terminating at a suitable distance below the annular flange 15 and the apertures 19 of the member. Any suitable number of longitudinal ribs may constitute the series on the flame-spreader; but as shown by Figs. 4 and 5 of the drawings a series of four ribs are employed, said ribs being arranged equidistant from and parallel with each other and each rib being tapered. I would have it understood, however, that the number of ribs may be decreased and that the cross-sectional shape of the ribs may be varied.

Another important feature of the present improvement as embodied in the construction shown in Fig. 1 resides in the employment of an annular flange on the inner wick-tube 11 and projecting into the central-draft space of the burner, said flange arranged to closely circumscribe the tubular portion of the flame-spreader in the space between the spreader-flange 15 and the upper ends of the longitudinal ribs 21. The inner wick-tube 11 in the construction shown by Figs. 1 and

4 has the inwardly-extending annular flange 22 produced therein by the operation known to the art as "nurling" the metal by suitable metal-working appliances, said annular flange 22 being produced near the upper end of said inner wick-tube. This annular flange 22 is provided at intervals with a series of notches 23, (see Fig. 4,) which correspond in position and contour to the longitudinal ribs 21 on the lower portion of the flame-spreader, whereby the member 18 of the flame-spreader may be fitted in the upper portion of the inner wick-tube for its ribs 21 to register with the notches 23 in the annular flange of the wick-tube 11, so that the spreader may be lowered for the ribs 21 to pass through the notched flange 22 and for the member 18 to enter the upper part of the wick-tube, after which the flame-spreader may be partly turned to move the ribs on the member 18 thereof out of coincidence with the notches in the annular flange 22. The described construction of the parts permits the flame-spreader to be easily inserted into the wick-tube; but at the same time said flame-spreader may be adjusted by hand in order to withdraw it from the wick-tube for the purpose of cleansing the spreader or for any other purpose.

It is to be observed that with the flame-spreader properly assembled within the flange of the tube 11 the annular flange 22 of the inner wick-tube closely circumscribes the lower tubular portion of the flame-spreader and presents an imperforate portion in the path of the ribs 21 for the purpose of arresting the upward movement of the flame-spreader within the burner; but at the same time a considerable space exists between the upper edge of the wick-tube and the flange 15 of the spreader, into which space projects the upper edge of the wick 12, the flame from which is deflected or spread in part by the annular flange 15.

The inner wick-tube 11 may be constructed, as shown by Fig. 6, to produce the annular inwardly-extending notched flange 24. This flange is produced by bending the upper edge of the wick-tube in an inclined direction into the central-draft space of the burner, said flange having a series of notches 25, corresponding in number and form to the ribs on the lower tubular portion of the flame-spreader.

It is to be observed that the flame-spreader after it is slipped into the wick-tube 11 for its longitudinal ribs to clear the notched flange is subsequently turned or partly rotated in order to move its ribs out of alignment with the notches. Under some conditions it is desirable to arrest this turning movement of the flame-spreader within the wick-tube, and to this end I provide a stop-lug 26, which is suitably formed on the inner surface of the wick-

tube 11, so as to project therefrom into the path of one of the ribs 21 on the lower part of the flame-spreader.

In the embodiment of the invention shown by Figs. 7 and 8 of the drawings the relation of the coacting flange and ribs is reversed to the constructions of Figs. 1 to 5, inclusive; but, as heretofore indicated, this embodiment is comprehended within the generic terms of my invention. The spreader shown by Fig. 7 is made of a single piece of metal, and in the lower tubular part of said spreader are produced the longitudinal grooves 27, (see Figs. 7 and 8,) said lower tubular part of the spreader being of larger diameter than the perforated and flanged body of the spreader in order to produce an annular shoulder or ledge 29 between the lower part and the tubular body of the spreader. Instead of producing a continuous annular flange on the inner wick-tube, as in Figs. 1 and 6, I employ in the construction of Fig. 7 a broken or interrupted flange, which is made in the form of short lugs or projections 28, the latter being suitably formed on the inner surface of the wick-tube 11 and arranged in positions corresponding to the grooves of the spreader. In Fig. 8 the lower part of the spreader has two grooves 27 formed therein at diametrically opposite points, said grooves extending through the annular shoulder 29 and the lower edge of the spreader. Of course the lugs or projections 28 are positioned diametrically opposite on the inner surface of the wick-tube, so that the grooved part of the spreader may be slipped into the wick-tube for the lugs or projections to travel in the grooves, after which the spreader should be turned for the lugs 28 to lie in the path of the annular shoulder 29. It is evident that the number of grooves and projections may be increased and that the lower larger part of the spreader may be made separate from and united fast with the upper part of said spreader in the manner shown by Figs. 2 and 3; but as these details will readily suggest themselves to a skilled mechanic I have not considered it necessary to illustrate the same.

As in my prior application, to which reference has been made, the flame-spreader has a guard or flange 15 arranged normally to rest on the upper edge of the wick, which is movable with the usual wick-lifter and with the spreader, so that the spreader and wick travel together or one with the other under the operation of the means for lifting the spreader, the wick-lifter, and the wick. I have not considered it necessary to illustrate the wick-lifter nor the means by which the flame-spreader and the wick-lifter are operated, because these parts may be of the nature disclosed by my prior application, or any other suitable means may be employed.

I prefer to make the flame-spreader shown by Figs. 1, 2, and 3 with a series of holes 16^a

in the tubular body of the member 13 below the holes 16 of a diameter corresponding to the holes 19 in the lower member 18, and the holes 16^a and 19 are arranged to register or coincide when the two members are assembled and fastened to constitute the flame-spreader in its entirety.

Changes may be made in the form and proportion of some of the parts, while their essential features are retained and the spirit of the invention embodied. Hence I do not desire to be limited to the precise form of all the parts as shown, reserving the right to vary therefrom.

Having thus described the invention, what I claim is—

1. In a central-draft-lamp burner, the combination with an inner and outer wick-tube, of a vertically-movable spreader carrying a member having its upper edge flanged outwardly to form an imperforate guard, an air-space being formed between said member and said inner wick-tube, the upper side of said air-space being closed by said guard, and said spreader having perforations above and below the said guard and coacting devices within the inner wick-tube, to limit the upward movement of the spreader, guard and wick, substantially as described.

2. In a lamp-burner of the class described, the combination with an inner wick-tube, and a flame-spreader movable freely therein in a vertical direction within certain limits, of coacting ribs and flanges on said wick-tube and the spreader for limiting the movement of the spreader within said wick-tube and for permitting manual removal of said spreader from said tube, substantially as described.

3. In a lamp-burner of the class described, the combination of a flanged wick-tube, a ribbed flame-spreader, and a stop to limit the adjustment in a horizontal plane of the flame-spreader within the wick-tube, substantially as described.

4. In a lamp-burner of the class described, the combination of a wick-tube having a notched flange extending into the air-space thereof, a flame-spreader provided with longitudinal ribs arranged to cooperate with said flange in limiting the movement of said flame-spreader within the wick-tube, and a flange on the flame-spreader, said wick-tube flange arranged to circumscribe the flame-spreader between its ribs and the flange thereon, substantially as described.

5. In a lamp-burner of the class described, a flame-spreader consisting of tubular members made in separate pieces and firmly united together, the lower member of said spreader provided with longitudinal projections, in combination with a wick-tube, and a flange on said wick-tube to cooperate with the projections of the flame-spreader, substantially as described.

6. In a lamp-burner of the class described, the combination of a wick-tube, a notched flange thereon, a flame-spreader, and ribs on said flame-spreader in coöperative relation
5 to the notched flange, substantially as described.

7. In a lamp, the combination of an inner wick-tube provided at its upper end with an inwardly-projecting notched flange, a vertically-movable spreader, and projections co-

acting with said flange for limiting the upward movement of said spreader within the wick-tube, substantially as described.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in
15 the presence of two witnesses.

JOSEPH GREGORY.

Witnesses:

H. T. NUGENT,

THOS. C. O'CALLAGHAN.