C. E. POWERS.

HEADLIGHT BURNER.

APPLICATION FILED SEPT. 25, 1908.

961,012.

Patented June 7, 1910.

Fig 1.

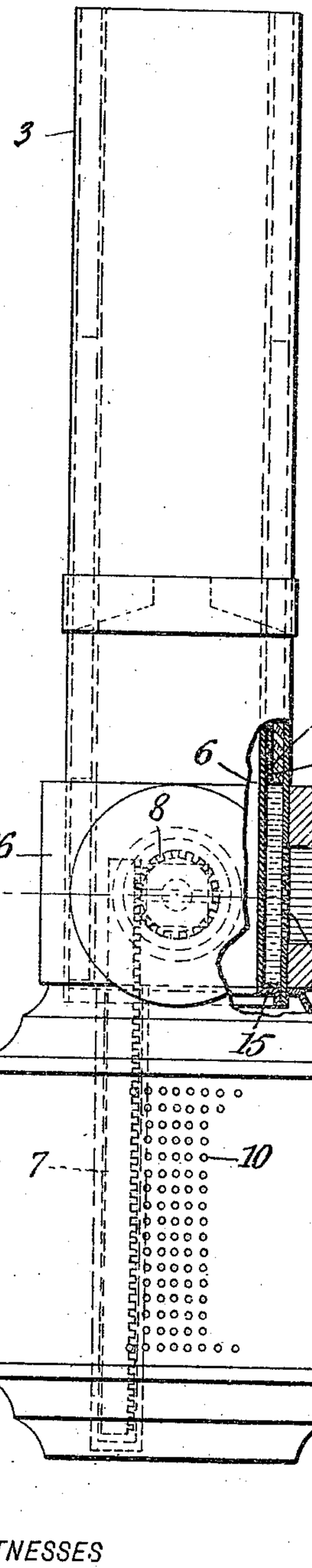
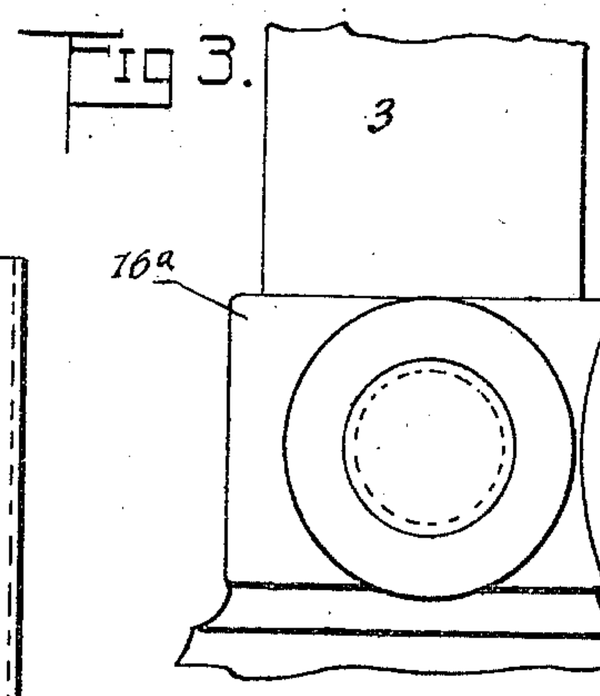
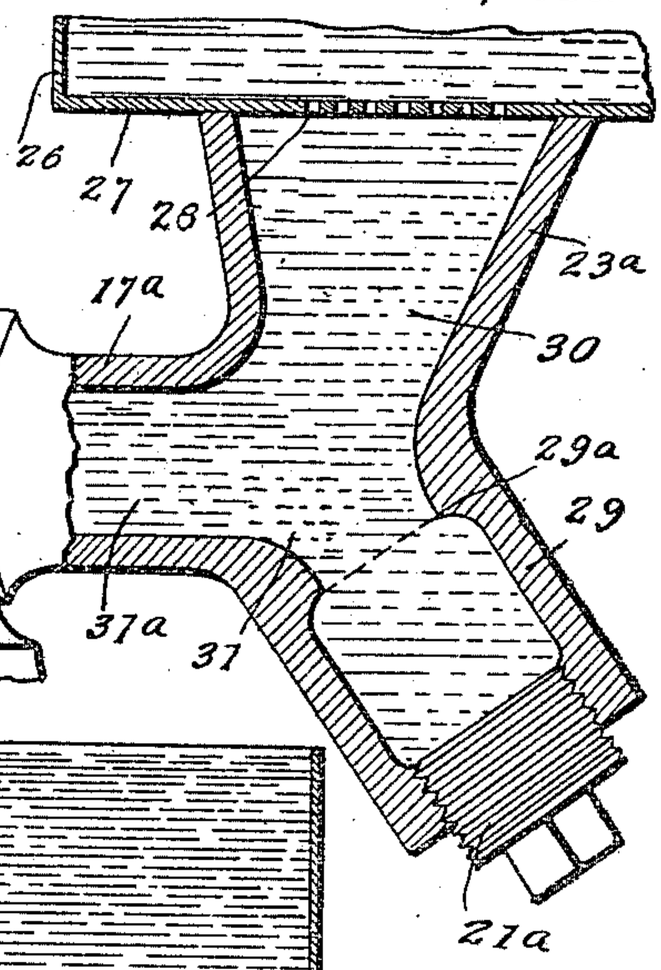


Fig 3.





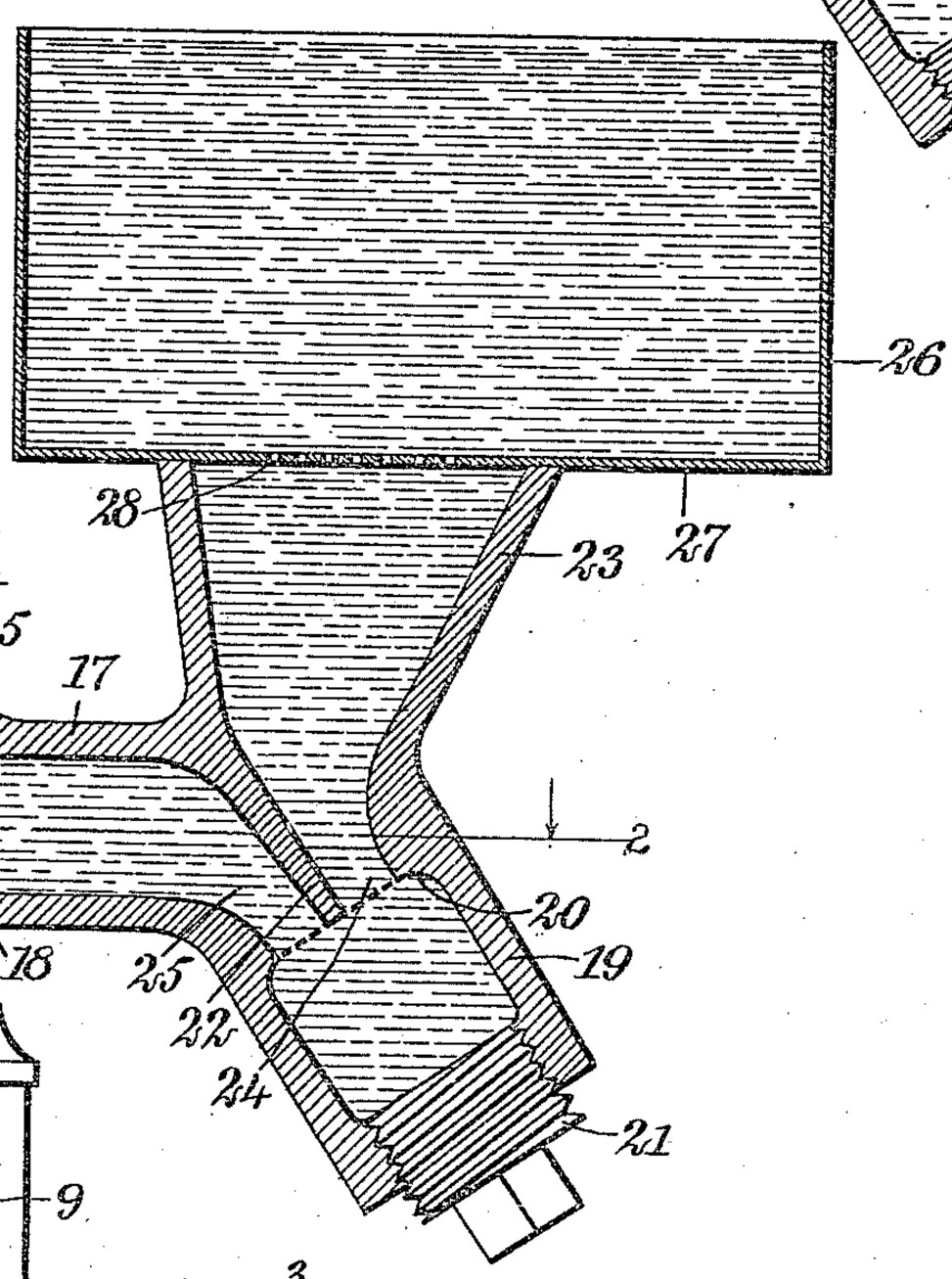
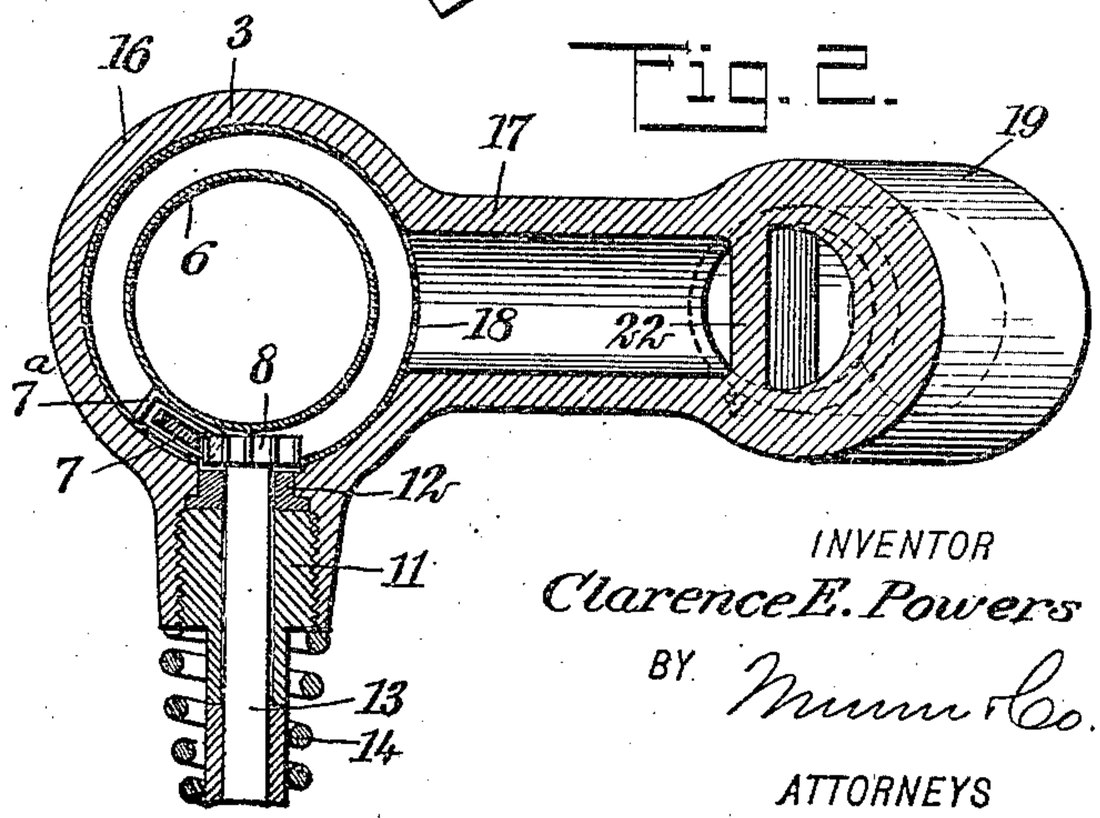


Fig. 2.



WITNESSES

L. Almquist

W. Harrison.

INVENTOR

Clarence E. Powers

BY Munn & Co.

ATTORNEYS

UNITED STATES PATENT OFFICE.

CLARENCE E. POWERS, OF BALTIMORE, MARYLAND, ASSIGNOR TO SCHROEDER HEADLIGHT COMPANY, OF EVANSVILLE, INDIANA.

HEADLIGHT-BURNER.

961,012. Specification of Letters Patent. **Patented June 7, 1910.**

Application filed September 25, 1908. Serial No. 454,688.

To all whom it may concern:

Be it known that I, CLARENCE E. POWERS, a citizen of the United States, and a resident of Baltimore city, in the State of Maryland, have invented a new and Improved Headlight-Burner, of which the following is a full, clear, and exact description.

My invention relates to headlight burners of the kind adapted to consume oil, my more particular purpose being to provide, intermediate the lamp wick and the oil reservoir a member of peculiar shape and offering especial advantages relative to the flow of the oil from the reservoir to the wick.

Reference is to be had to the accompanying drawings forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the figures.

Figure 1 is a view partly in section and partly in elevation, showing my improvement as applied to a locomotive headlight burner, this view also showing the oil reservoir, the wick and its accompanying parts, and the member connecting the oil reservoir with the wick, and showing particularly the internal shape of said member; Fig. 2 is a horizontal section upon the line 2—2 of Fig. 1, looking in the direction of the arrow; Fig. 3 is a view partly in elevation and partly in section, showing another form of the device, in this instance there being no partition in the sediment chamber.

In Figs. 1 and 2 a burner tube is shown at 3 and a wick at 4, the latter being bent substantially into cylindrical form. At 5 is a wick holder and at 6 an air tube concentric with the burner tube and with the wick. A rack bar 7 is connected with the wick holder 5 and is used for raising and lowering this wick holder, together with the wick. A pinion 8 meshes with the teeth of the rack bar which extends downwardly into a metal tube 7^a, which extends into an air cylinder 9, the cylinder being provided with perforations 10 for admitting air. A screw plug 11 and a washer 12 encircle a revoluble stem 13 upon which the pinion 8 is mounted. A spiral spring 14 encircles the screw plug 11 and stem 13, for the purpose of holding the pinion 8 outward and causing it to occupy a favorable position for actuating the rack bar. A ring 15, having a suitable opening to allow the rack bar tube to pass through it, connects the burner tube 3 with the air tube 6. Encircling the burner tube 3 is a collar 16, and integral with this collar is a neck 17. The burner tube 3 is provided with one or more perforations 18 for establishing communication between the wick 4 and the neck 17. A sediment chamber 19 is integral with the neck 17 and is shown as provided with a shoulder 20. A screw plug 21 temporarily closes the bottom of the sediment chamber 19. A partition 22 integral with the sediment chamber 19 and neck 17 extends obliquely downward toward the screw plug 21. At 23 is a funnel which is integral with the neck 17, partition 22 and sediment chamber 19. The partition 22 is so shaped and so disposed that passages 24, 25, upon opposite sides of it, have each an aggregate cross section smaller than the internal cross section of the sediment chamber 19. An oil reservoir is shown at 26 and is provided with a bottom 27, the latter having one or more perforations 28 opening directly into the funnel 23 for the passage of oil, the perforations 18 performing a similar mission in the flow of oil to the wick.

My device is used as follows: The reservoir 26 being wholly or partially filled with oil, and the wick 4 being properly adjusted, the oil flows downwardly through the funnel 23 so as to fill the sediment chamber 19, the passages 24, 25, the neck 17, and to pass through the perforations 18 to the wick. The flow of the oil is substantially constant. Since, however, in the preferred construction shown in Fig. 1, the passages 24, 25 are of comparatively small area in cross section, the liquid passing downwardly through the passage 24 and upwardly through the passage 25 must move with comparative slowness while in the sediment chamber. This is upon the principle that a given volume of liquid in flowing through a passage of large diameter has a slower speed than when flowing through a passage of smaller diameter. The shoulder 20 in this construction performs an important mission. Any sediment passing downwardly through the funnel 23 goes into the sediment chamber 19 and tends to stay there. If, for any reason, a floating impurity happens to rise, it can not very well get back into the funnel 23, as it is unable to pass upwardly beyond the shoulder 20. The instant it attempts to pass this shoulder, it meets with the down-flowing current of oil occupying the passage 24.

The annular shoulder also prevents the sediment from going out through the passage 25, as will be understood from Fig. 1. Any sediment contained in the oil, therefore, accumulates in the sediment chamber 19. Upon proper occasions the screw plug 21 may be removed so as to allow the sediment chamber to be cleaned out, or at least to permit any sediment in this chamber to be ejected. By having the collar 16, the funnel 23, the neck 17, the partition 22 and the sediment chamber 19 all integral with each other, all possibility of leakage is avoided. Moreover this simplifies the construction. It will be noted that as the oil passes downwardly from the funnel 23 and upwardly through the neck 17, it must go below the lower edge of the partition 22, and this lower edge, as will be noted from Fig. 1, extends below the lowest horizontal internal level of the neck 17. This insures that any sediment passing downwardly through the funnel 23 can not find its way to the wick until after it has passed below the lowest edge of the partition 22, and in this event it is not likely to rise, pass under the partition, and climb its way to the perforations 18.

In the form shown in Fig. 3 the burner tube 3 is supported by a collar 16ª having a neck 17ª integral with it. The oil reservoir is shown at 26 and, as shown in Figs. 1 and 2, is provided with a bottom 27 having perforations 28. A funnel 23ª is provided with a portion 29 serving as a sediment chamber, this portion being integral with it and extending downward and having an annular shoulder 29ª and being normally closed by a screw plug 21ª. At 30 is shown a frusto-conical passage which is in open communication with a passage 31 leading obliquely downward into the sediment chamber 29. Communicating with the passage 31 is a passage 31ª which leads to the burner tube 3.

The construction just described and shown in Fig. 3 is identical with that shown in Fig. 1 with the exception that in Fig. 3 there is no partition 22.

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

1. In a headlight burner, the combination of a funnel, a neck extending therefrom, and a sediment chamber integral with said funnel and with said neck, said sediment chamber being so disposed that its general axis extends intermediate said funnel and said neck, and a web integral with said funnel and with said neck, said web extending in the general direction of the axis of said sediment chamber.

2. The combination of a funnel, a neck and a sediment chamber, these parts being integral with each other, said sediment chamber being provided internally with a rounded shoulder, and a web separating a portion of said funnel from a portion of said neck, said web extending diametrically across said sediment chamber and reaching substantially to said rounded shoulder.

3. The combination of a funnel, a neck and a sediment chamber, these parts being integral, said sediment chamber being so disposed that its general longitudinal axis inclines obliquely downward when said neck is horizontal, and a web integral with said neck and with said funnel and extending in a plane coinciding with the general direction of the axis of said sediment chamber and reaching slightly into said sediment chamber.

4. The combination of a neck and a sediment chamber integral with each other, said sediment chamber being provided with an opening having a rounded shoulder, and a screw plug mounted within said sediment chamber and forming a stop against which sediment may lodge.

5. The combination of a funnel and a neck separated by a web, and a sediment chamber integral with said funnel, said neck and said web, said sediment chamber being so disposed that its general axis extends obliquely from the general axis of said neck, said sediment chamber containing a passage which communicates with the inside of said funnel and also with the inside of said neck, so that the interior of said sediment chamber is always in open communication with two passages to facilitate the cleaning of the device.

6. The combination of a neck and a sediment chamber integral with each other, said sediment chamber having generally a cylindrical form and being provided with an opening, the diameter of which is greater at the middle than at the ends of said sediment chamber, and a closure member extending into said sediment chamber and forming a stop against which sediment may lodge.

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

CLARENCE E. POWERS.

Witnesses:

B. J. Hock,

Wm. J. Kavanaugh.