

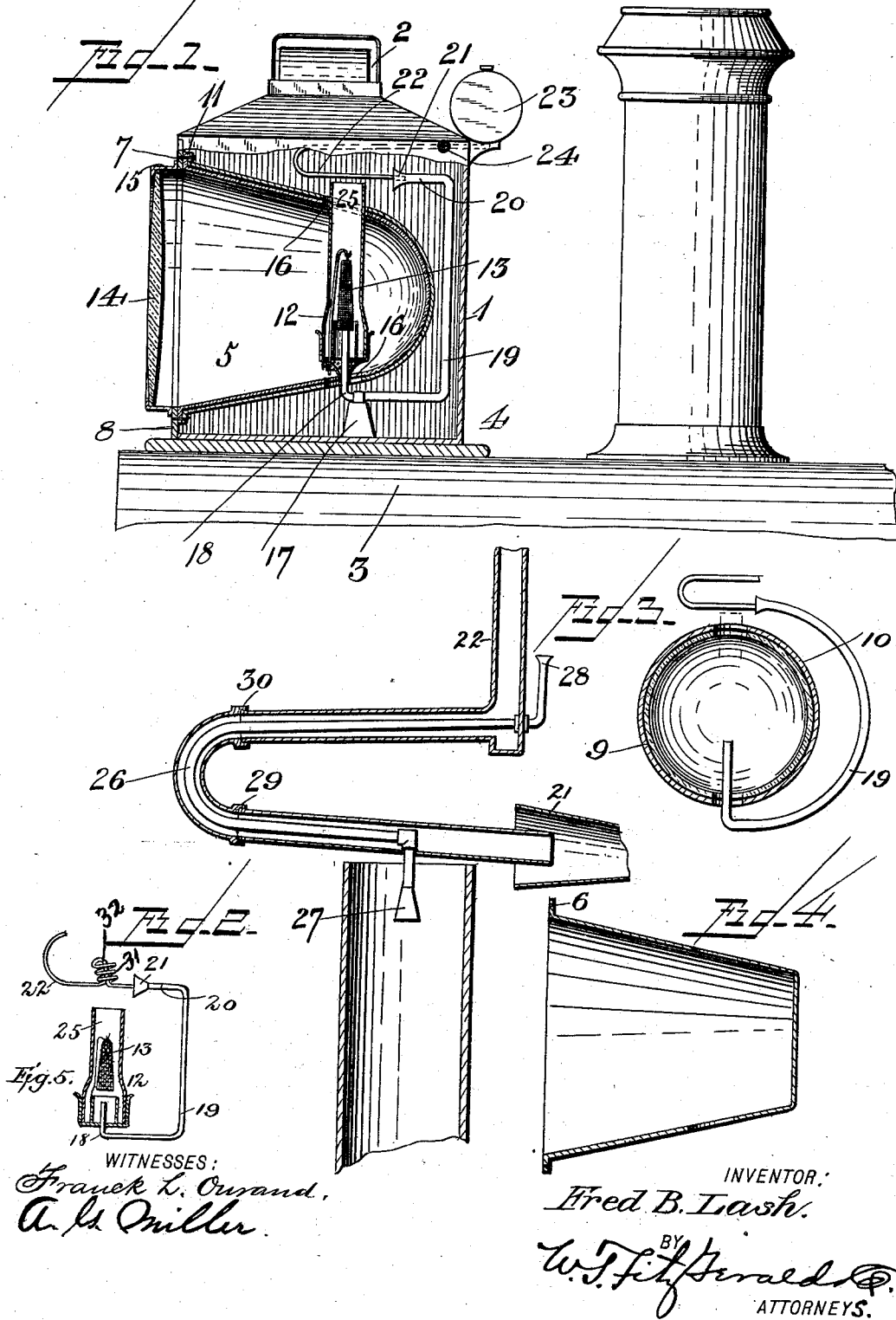
No. 664,418.

F. B. LASH.  
HEADLIGHT.

Patented Dec. 25, 1900.

(Application filed Oct. 17, 1899. Renewed Oct. 18, 1900.)

(No Model.)



# UNITED STATES PATENT OFFICE.

FRED B. LASH, OF FARMERSBURG, INDIANA.

## HEADLIGHT.

SPECIFICATION forming part of Letters Patent No. 664,418, dated December 25, 1900.

Application filed October 17, 1899. Renewed October 18, 1900. Serial No. 33,450. (No model.)

### *To all whom it may concern:*

Be it known that I, FRED B. LASH, a citizen of the United States, residing at Farmersburg, in the county of Sullivan and State of Indiana, have invented certain new and useful Improvements in Headlights; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to certain new and useful improvements in the construction and combination of parts necessary to provide a light designed, primarily, for use as a headlight upon a locomotive, though it will be found desirable and useful for all of the various purposes for which a concentrated light of great brilliancy may be used.

The prime object of my invention is to provide a reflector for my headlight which will have great capacity to concentrate or reflect a light and direct it to a given point.

A further object is to provide reliably-efficient means by which the reflector may be reliably adjusted and securely held in its operative position without liability of its exterior coating of quicksilver or the like being injured or without fear that the reflector will become broken.

A further object of my invention is to provide means for quickly generating a gas from gasolene or similar oil, as will be hereinafter fully set forth, the details of my invention being illustrated in the accompanying drawings, in which—

Figure 1 is a central vertical section of a headlight provided with a portion of the tubing comprised in my invention and showing the relative location of the burner, chimney, and contiguous parts. Fig. 2 shows a central vertical section of a portion of the oil-conveying pipe shown in Fig. 1 supplied with means to quickly generate gas from the oil. Fig. 3 illustrates a transverse section of the reflector and its cushion of rubber and exterior casing, and illustrating another disposition of the gas-conveying pipe from the position thereby occupied in Fig. 1. Fig. 4 is a central longitudinal section of another form of

reflector from that presented in Fig. 1. Fig. 5 illustrates a varied construction for the conveyer-pipe.

For convenience of designation the several parts of my invention and their coöperating features will be referred to by numbers, of which 1 illustrates the exterior casing of the headlight, which may be formed in any preferred way and provided with the usual vent 2, designed to permit the escape of the products of combustion, as is usual, it being understood that the body of the headlight thus provided may be attached at any desired point, as upon the bracket 3 of a locomotive, by means of bolts passing through the base, section 4 or otherwise. Within the housing thus or otherwise provided I dispose my improved reflector, which consists of the reflector proper, 5, formed preferably of glass and molded and shaped as illustrated in Figs. 1 or 4, or otherwise, as may be deemed productive of the best results, and the outside thereof is coated in the usual way with a quicksilver compound designed to make this portion of the reflector entirely impervious to light, and thereby enable the reflector to concentrate the rays of the light and direct the same to any desired point.

An integral radial flange 6 is formed upon the rim of the reflector proper, designed for the purpose of holding the reflector in an adjusted position, as by means of bolts 7, passing through the contiguous wall 8 of the housing, as clearly shown in Fig. 1.

After the reflector proper has been provided with a coating of quicksilver or its equivalent it is fitted with the jacket 9, which is designed to cover all exterior parts of the reflector from the flange 6 inward, said jacket being preferably formed of rubber, though other yielding material may be found desirable, the object in thus providing this covering or jacket being to cushion the reflector proper and hold the same securely in position without liability of injuring the surface formed by the quicksilver dressing, inasmuch as the rubber jacket will cling tightly around the reflector and will protect the same and its exterior coating from becoming injured,

as the yielding character of the rubber jacket will compensate for any slight movement between the outer casing and the reflector.

In order to securely inclose the reflector proper and its cushion of rubber, I provide the exterior casing 10, formed of some suitable sheet metal shaped so as to snugly fit said parts, and in order that the casing may be held into coöperative relationship with said interior parts I form thereon a radial flange 11, designed to coöperate with the flange 6 upon the reflector proper, and it is clear that by reference to Fig. 1 the bolt 7, after passing through the wall 8, is extended through suitable apertures in the flanges 6 and 11 and secured by a suitable nut, and thereby locking all of said parts closely together and insuring that the reflector, with its outer casing, will be disposed within the housing 1 in a proper way to coöperate with the lamp 12, which may be of any preferred construction and is preferably provided with the usual mantle 13, designed to render the light incandescent.

It will be understood that a suitable lens 14 is secured to the outside of the wall 8 in such position that it will coöperate with the reflector, the said lens being held in position in any preferred way, as by the extension or casing 15, secured to the wall 8 in any preferred way, preferably by hinges, so that said lens may be moved out of the way to render the lamp or the interior of the reflector readily accessible, as for purposes of repair or for cleansing said parts.

Suitable apertures 16 are provided in the reflector and its outer casings designed to permit proper draft to the lamp and to allow the chimney thereof to extend upward into the housing, as shown in Fig. 1, and in order to support the lamp in its adjusted operative position I provide at a suitable point beneath the lower aperture 16 the bracket 17, to which I secure the exit or vent portion 18 of the conveyer-pipe 19. The working parts of the lamp are secured to the end of the vent-pipe 18 in any preferred way, as is usual.

The conveyer-pipe 19, as will be seen by reference to Fig. 1, extends upward to a point above the reflector, where it terminates in the inwardly-directed right-angled extension 20, having the flared end 21 designed to receive the free end of the supply-pipe 22, which extends upward to the oil-tank 23 located at any preferred point upon the exterior of the housing 1, the supply of oil from said tank being regulated or controlled by the valve 24.

It will be understood that the disposition of the supply-pipe 22 shall be so made that it will be placed immediately over the end of the chimney 25 in order that the heat from the lamp will result in the generation of gas from the oil, which gas as it leaves the supply-pipe 22 will be conducted into the flared end 21 of the conveyer-pipe 19, and by such pipe delivered to the lamp through the vent 18.

In order to insure that the oil employed as fuel shall be readily converted into a gaseous state, I dispose within the supply-pipe an auxiliary flue, consisting of the U-shaped pipe 26, having the flared receiving end 27 and the flared terminal 28, it being understood that in order that the auxiliary tube or flue 26 may be readily introduced within the supply-pipe the latter is made in sections, as indicated by the joints 29 and 30, thus enabling said parts to be very cheaply manufactured and quickly assembled in their respective operative positions. The construction illustrated in Fig. 2 is upon a slightly-enlarged scale, it being understood that all of the parts shown in said view are wholly inclosed in the housing 1. By this arrangement it is therefore obvious that the vent or terminal 28 will discharge any heat products into the housing, from whence they will escape through the vent 2. The heat products from the chimney will enter the flared end 27 and pass through the U-shaped pipe 26, and from thence into the upper portion of the housing 1, from whence they will escape through the vent 28, thus practically increasing the heating-surface applied to the oil, inasmuch as the heat from the lamp will not only pass through the auxiliary flue thus provided but will also act upon the exterior of the supply-pipe within which said flue is disposed.

In Fig. 3 I have shown that the conveyer-pipe 19 may be disposed laterally or to one side of the position occupied by the lamp instead of to the rear thereof, as shown in Fig. 1, it being understood that the position of said pipe may be determined by expediency.

In Fig. 5 I have illustrated still another construction which may be adopted in forming the supply-pipe, wherein it will be observed that a coil-pipe formed out of said supply-pipe is disposed immediately over the flue and consists in so shaping said pipe that a series of outer coils 31 is formed, and after a sufficient number of said coils have been provided the end of the pipe is turned down through the center of said coils, as indicated by the numeral 32, and after reaching the lower end of the coils 31 is bent substantially at right angles and disposed in the flared end 22 of the delivery-pipe.

It will be seen that I have provided a head-light which will be found to possess great capacity to concentrate the light of the lamp and which will be found to be of a very durable permanent character and that the several parts thereof may be very cheaply manufactured and quickly assembled in their respective operative positions, and while I have described the preferred construction which may be adopted for the various features of my invention it will be understood that I desire to comprehend in this application the substantial equivalent thereof, and I do not therefore wish to be confined strictly to the exact showing herein made.

The cushion 9, it is obvious, will absorb the blows and jars incident to the usage of my improved reflector upon a locomotive or other moving mechanism, thereby insuring that the reflector proper, formed of glass, will be fully protected.

Having thus fully described the construction of my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. As an improvement in headlights, the combination with a suitable housing, of a reflector disposed within said housing, and having a radial flange; a metallic casing fitting said reflector; a cushion of rubber or the like interposed between said casing and reflector; a suitable lamp mounted within the same and having its chimney extending through said reflector and casing; a conveyer-pipe coöperating with said lamp, in combination with a supply-tube coöperating with said conveyer-tube and having an auxiliary flue extending through a portion of its length whereby the

heat of the chimney will be directed through said flue and thereby more quickly transform the oil into gas in the manner specified and for the purpose set forth.

2. The herein-described headlight comprising an exterior housing 1; a reflector proper having a jacket of rubber and an exterior casing of metal disposed within said housing and means to hold said parts in an adjusted position, in combination with a lamp mounted within said reflector and an oil-supply pipe having an auxiliary flue disposed in the interior thereof whereby the oil will be more quickly vaporized by the heat of the lamp passing through it in the manner specified and for the purpose set forth.

In testimony whereof I affix my signature in presence of two witnesses.

FRED B. LASH.

Witnesses:

THOMAS J. WALLS,  
THOMAS REED.