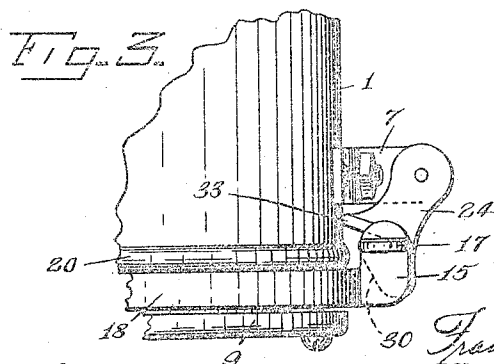
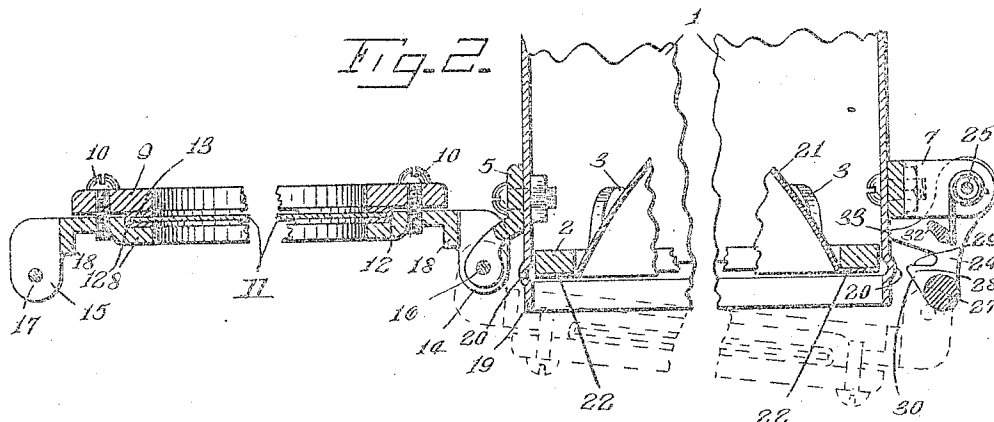
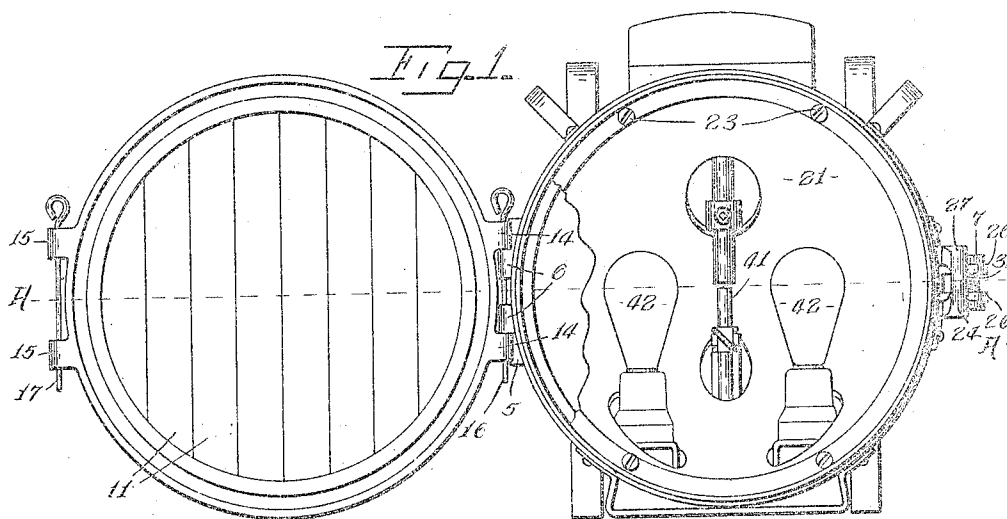


F. BUCHANAN.
HEADLIGHT.
APPLICATION FILED APR. 24, 1911.

1,057,409.

Patented Apr. 1, 1913.
2 SHEETS—SHEET 1.



WITNESSES:

Chas. Young.
S. Davis.

INVENTOR.
Frank Buchanan
BY
Parsons Hall Baker
ATTORNEYS

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Fig. 4.

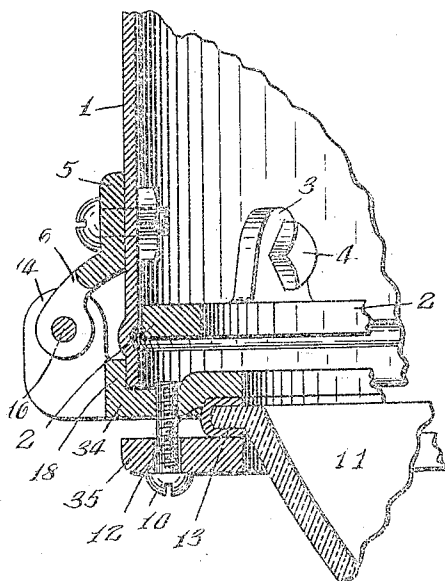


Fig. 5.

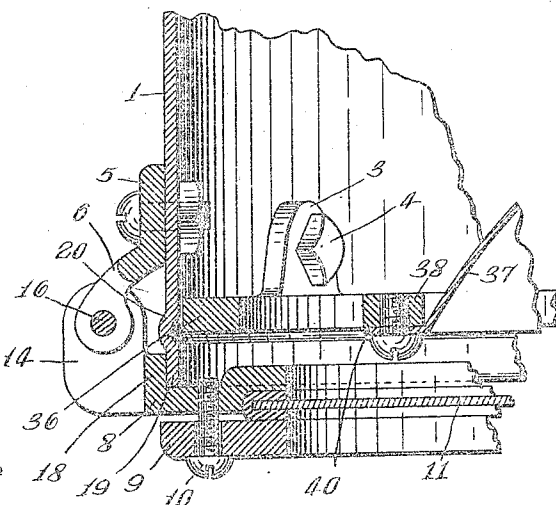
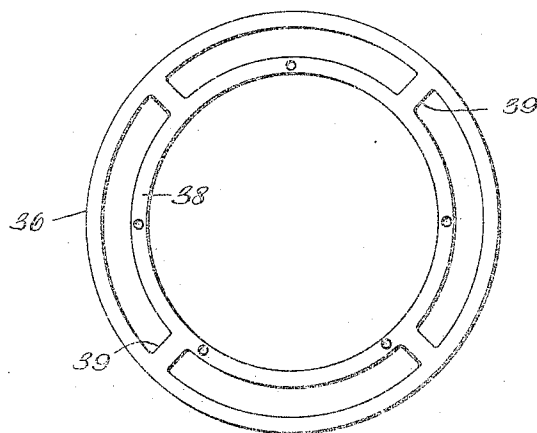


Fig. 6.



WITNESSES:

Chas. H. Young
S. Davis

INVENTOR.
Frank Buchanan
BY
Charles H. Young
ATTORNEYS.

UNITED STATES PATENT OFFICE.

FRANK BUCHANAN, OF SYRACUSE, NEW YORK.

HEADLIGHT.

1,057,409.

Specification of Letters Patent.

Patented Apr. 1, 1913.

Application filed April 24, 1911. Serial No. 622,873.

To all whom it may concern:

Be it known that I, FRANK BUCHANAN, of Syracuse, in the county of Onondaga and State of New York, have invented a certain new and useful Headlight, of which the following is a specification.

This invention relates to head lights, and has for its object a particularly simple and efficient construction and arrangement of the door and associated parts; and it consists in the combinations and constructions hereinafter set forth and claimed.

In describing this invention reference is had to the accompanying drawing in which like characters designate corresponding parts in all the views.

Figure 1 is a front elevation of a head light embodying my invention, the door being in open position. Fig. 2 is an enlarged sectional view, partly broken away, on line "A—A" Fig. 1. Fig. 3 is a fragmentary view illustrating the catch and contiguous parts of the door and casing. Fig. 4 is a fragmentary view showing in section the door supporting a different form of lens from that shown in Fig. 2. Fig. 5 is a fragmentary view showing a different form of reflector support. Fig. 6 is a face view of the reflector support illustrated in Fig. 5.

1 is the casing of the lamp, such casing being cylindrical in form and usually constructed of sheet metal.

2 is an annular frame element inserted within the casing 1 from the front side thereof and being spaced apart from the front edge of the casing 1, the frame element having rearwardly projecting lugs, as 3, which lap the inner face of the casing 1 and are secured thereto by a fastening member as 4 passing through each lug.

5 is a bracket or hinge leaf secured to one side of the casing on the outside thereof and comprising lugs 6 spaced apart and offset from the casing; the lugs having openings for receiving the hinge pin to be described.

7 is a bracket projecting from the casing diametrically opposite to the bracket 5 for supporting the catch for the door. The door comprises a marginal metallic frame, and a lens or cover glass supported by the frame, and as here shown the frame comprises flat inner and outer rings 8, 9, having opposing normally spaced apart flat surfaces and means as screws 10 for drawing the rings together and clamping the lens or cover glass 11 between such rings. One of

the rings, here shown as the inner ring, is formed with a channel 12 opening into the central opening of the ring and being encircled by said flat surface of the ring opposed to the outer ring, and a portion of the opposing flat surface of the outer ring is opposed to the channel 12. Said channel forms a seat for the margin of the lens 11 and such margin is protected by a wrapper or packing 13, the combined thickness of said margin and wrapper being greater than the depth of the channel 12. The inner ring is formed with pairs of rearwardly extending lugs 14 and 15 located on diametrically opposite sides thereof, the lugs of the pairs being spaced equidistant apart so that the door is symmetrical, and the lugs of each pair being formed with alined openings which are arranged at an angle to a line extending axially through the ring, and receive, respectively, pins 16 and 17, the pin 16 also passing through alined openings in the lugs 6 of the hinge leaf 5 and serving as a hinge pin. The upper lug 14 is arranged above the upper lug 6 and the lower lug 14 is arranged below the lower lug 6. The inner ring 8 of the door is also formed with a rearwardly extending annular flange 18 which receives the front marginal flange 19 of the casing 1 when the door is closed in order that the door may be tight when closed, said flange 19 extending in the same general direction as the longitudinal axis of the casing, and for further rendering the door tight the casing is provided with an annular external bead 20 at the base of such marginal flange 19, such bead engaging the edge of the flange 18 when the door is closed.

21 is a reflector within the casing, the reflector extending through the opening of the annular frame element 2 and having an annular flange 22 which laps the annular front face of the element 2 and is secured thereto by screws 23 passing through such flange.

24 is a catch supported by the bracket 7 and pivoted at 25 thereto, such catch having means for coacting with the pin 17 supported by the lugs 15, the pivot 25 being located outwardly relatively to the longitudinal axis of the casing farther than the point of engagement of the catch 24 and the pin 17. As here shown, the catch 24 is formed with hubs 26 mounted on the pivot pin 25 and spaced apart, and with a head 27 at its free end, the head being formed with hook-

shaped parts 28 spaced apart, each part 28 having a shoulder 29 for hooking over the pin 17 and also having a cam face 30 in advance of the shoulder 29 for engaging the pin 17 as the door approaches its closed position and causing the catch to be pressed outwardly against the action of a spring 31 until the door is entirely closed, when the catch is moved into operative position by said spring. The spring is coiled about the pivot pin 25 between the hubs 26 of the catch, and is provided with an arm pressing against a shoulder 32 on the catch. The movement of the catch by the spring is limited by a shoulder 33 projecting from the intermediate portion of the catch inwardly relatively to the longitudinal axis of the casing beyond the pin 17 when the door is closed, and engaging the peripheral face of the casing 1.

A door constructed with a marginal frame composed of two rings as described is particularly advantageous in that different forms of lenses may be safely supported thereby and as seen in Fig. 4, a signal lens as a Fresnel lens is supported between the inner and outer rings 34 and 35 of the door.

In Figs. 5 and 6 a different form of annular frame element 36 is shown, such element being adapted to support a reflector 37 of less size than the reflector shown in Fig. 2, the ring 36 being formed with a concentric ring 38 within and spaced apart from the outer ring 36 and connected thereto by integral webs or spokes 39, and the reflector 37 having a flange 40 which is secured to the inner ring 38.

My head light is also provided with a plurality of lamps it being here shown as provided with electrodes 41 projecting in front of the reflector and incandescent lamps 42, and it is also provided with suitable lamp mechanism located behind the reflector, such mechanism forming no part of my present invention. It will be understood however that the reflector may, if desired, be omitted.

What I claim is:

1. In a headlight, the combination with a casing having a substantially cylindrical portion; of a door consisting of inner and outer marginal rings and a cover glass, the inner ring having a rearwardly extending flange encircling the front end of said cylindrical portion and also having rearwardly extending lugs diametrically opposed to each other, one of said lugs being pivotally connected to the casing and the other being detachably connected to the casing, said inner ring having its front face provided with a channel for receiving the margin of the cover glass, and the outer ring having a flat surface opposed to the channel and normally spaced apart from the opposing surface of the inner ring, and screws extending through the outer ring for drawing said rings to-

ward each other and clamping the margin of the cover glass, substantially as and for the purpose described.

2. In a head light, a cylindrical casing, an annular frame element inserted in the casing and having rearwardly projecting lugs secured to the casing, and an annular front face, and a reflector extending through the opening of the annular frame element and having a flange lapping the annular front surface of said frame element and being secured thereto, substantially as and for the purpose described.

3. In a head light, a substantially cylindrical casing, a hinge leaf supported on the periphery of the casing, a door for the front end of the casing comprising a marginal frame, and a cover glass supported by the frame, the marginal frame having pairs of lugs projecting from diametrically opposite sides thereof, the lugs of the pairs being spaced equidistant apart, and the lugs of each pair having aligned openings arranged at an angle to a line extending axially through the marginal frame, pins passed through the openings, one of the pins serving as a hinge pin to connect one pair of the lugs of the marginal frame to the hinge leaf, and a yielding catch carried by the casing and detachably engaging the other pin, substantially as and for the purpose set forth.

4. In a head light, a casing, a door for the front end of the casing comprising a marginal frame hinged to the casing, and a cover glass supported by the frame, said frame being provided with a pin extending parallel to the axis of the hinge of the door and located diametrically opposite to said hinge and a catch supported by the casing and coacting with the pin at points spaced apart, the catch being pivotally connected to the casing, and the axis thereof being located outwardly farther than the point of engagement of the catch with the pin, substantially as and for the purpose described.

5. In a head light, a substantially cylindrical casing, a door for the front end of the casing comprising a marginal frame hinged to the casing, and a cover glass supported by the frame, said frame being provided with a pin extending parallel to the axis of the hinge of the door and located diametrically opposite to said hinge, and a catch supported by the casing and coacting with the pin at points spaced apart, the catch being pivotally connected to the casing, and the axis thereof being located outwardly farther than the point of engagement of the catch with the pin, said catch being formed with a hook-shaped engaging head for engaging the pin carried by the door, the head having cam faces on its advance side, substantially as and for the purpose specified.

6. In a head light, a substantially cylindrical casing, a door for the front end of the casing comprising a marginal frame hinged to the casing, and a cover glass supported by the frame, said frame being provided with a pin extending parallel to the axis of the hinge of the door and located diametrically opposite to said hinge, and a catch supported by the casing and coacting with the pin, the catch being pivotally connected to the casing, and the axis thereof being located outwardly farther than the point of engagement of the catch with the pin, the catch having means for engaging such pin at points spaced apart, such means including shoulders spaced apart and cam faces in advance of the shoulders, substantially as and for the purpose set forth.

7. In a head light, a casing, a door for the front end of the casing comprising a frame hinged to the casing, said frame being provided with a pin extending parallel to the axis of the hinge of the door and located diametrically opposite to said hinge, a catch supported by the casing and coacting with the pin at points spaced apart, the catch being pivotally connected to the casing, and the axis thereof being located outwardly farther than the point of engagement of the catch with the door, a spring for forcing the catch into operative position, and a shoulder for engaging the casing and limiting the movement of the catch into operative position, substantially as and for the purpose described.

8. In a head light, a substantially cylindrical casing, a hinge leaf supported on the

periphery of the casing, and comprising lugs spaced apart, a door for the front end of the casing comprising a marginal frame, and a cover glass supported by the frame, the marginal frame having pairs of lugs projecting from diametrically opposite sides thereof, the lugs of the pairs being spaced equidistant apart and the lugs of each pair having alined openings, and pins passed through the openings, one of the pins serving as a hinge pin to connect one pair of the lugs of the marginal frame to the lugs of said hinge leaf, a bracket projecting from the casing and located diametrically opposite to the hinge leaf, a catch for coacting with the other pin of the door and being pivoted to the bracket, the point of engagement of the catch and said other pin being located between the axis of the catch and the casing, the catch having spaced apart shoulders for engaging said other pin of the door and cam faces in advance of the shoulders, the shoulders and cam faces engaging the last-mentioned pin at points diametrically opposite to the lugs of the hinge leaf, and a spring for forcing the catch into operative position, substantially as and for the purpose specified.

In testimony whereof, I have hereunto signed my name in the presence of two attesting witnesses, at Syracuse, in the county of Onondaga, in the State of New York, this 20th day of March 1911.

FRANK BUCHANAN.

Witnesses:

C. C. SCHOENECK,
LYNFORD J. WELLS.