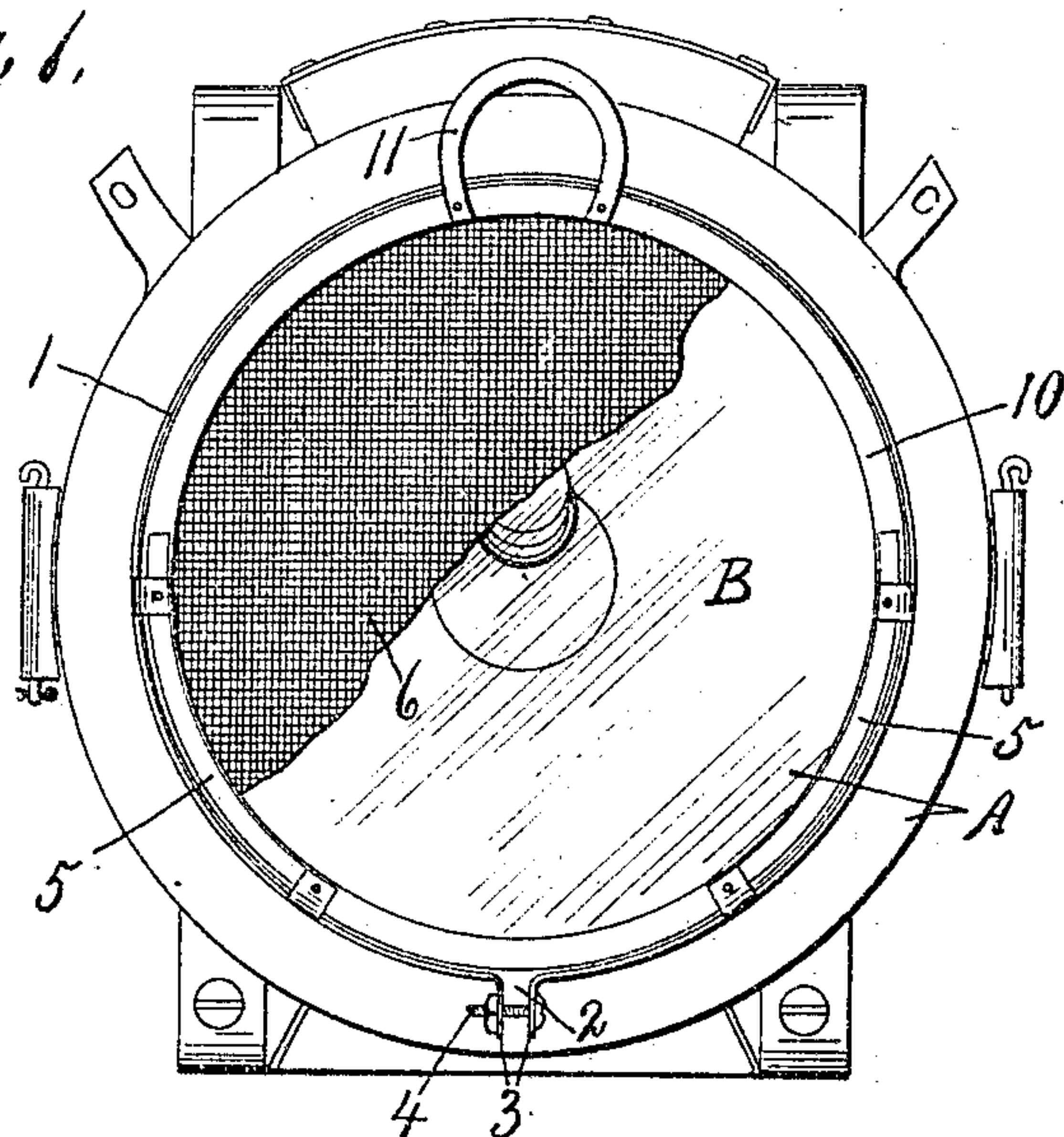


No. 830,768.

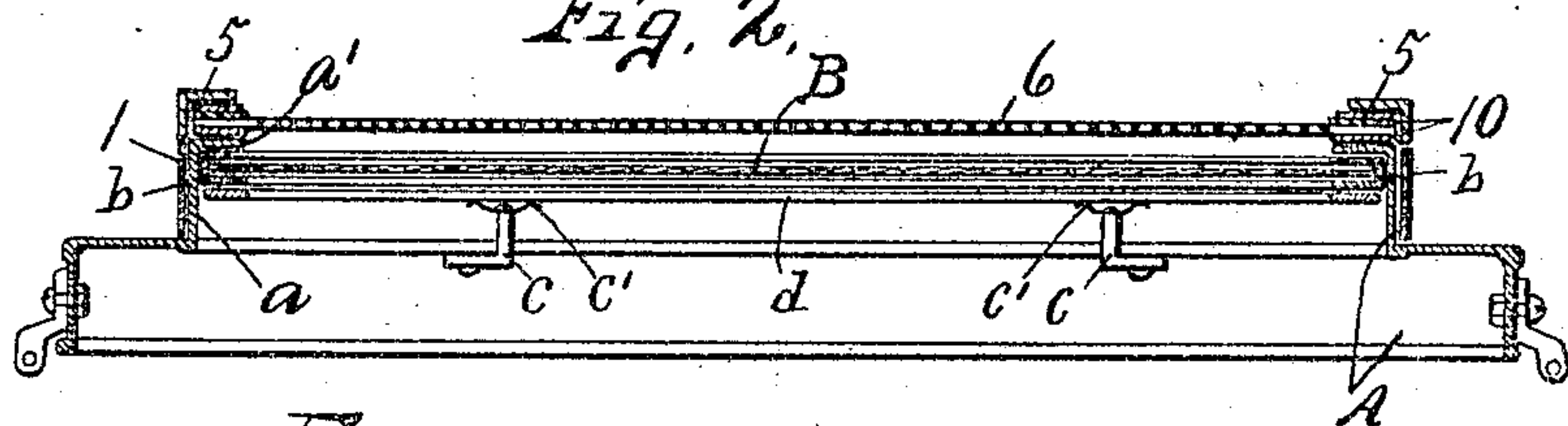
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F. BUCHANAN.  
SCREEN ATTACHMENT FOR HEADLIGHTS.  
APPLICATION FILED FEB. 1, 1905.

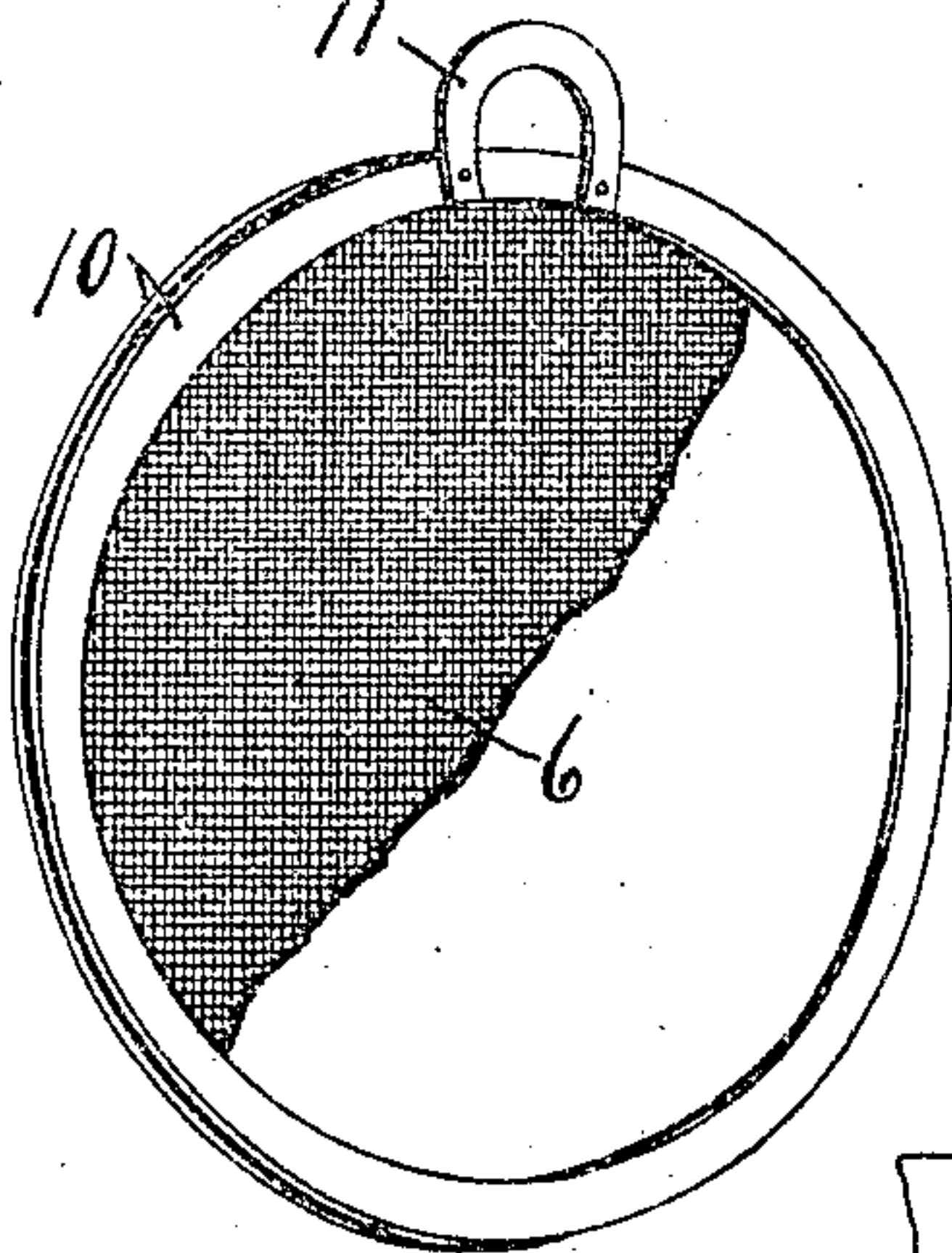
*Fig. 1.*



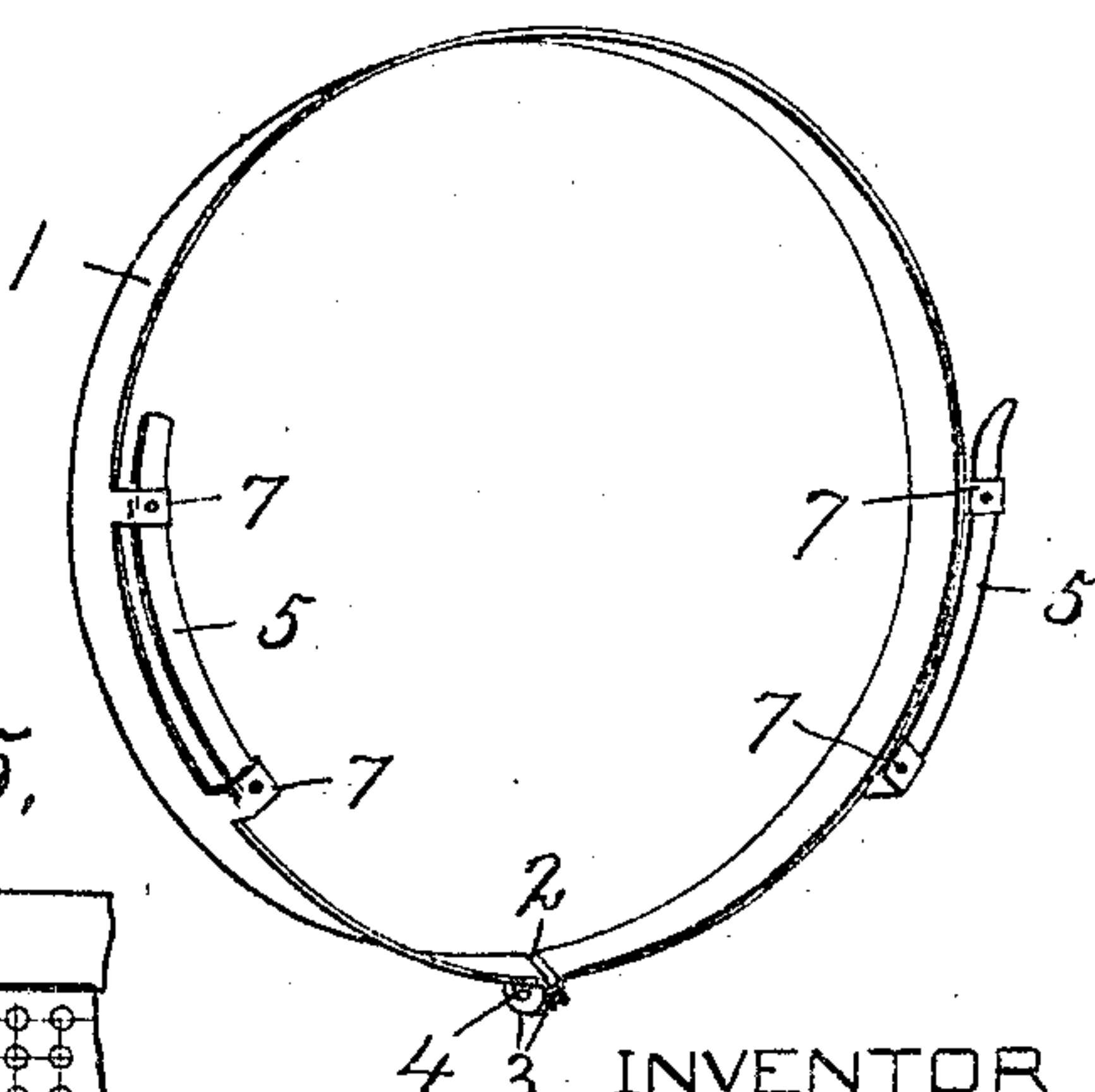
*Fig. 2.*



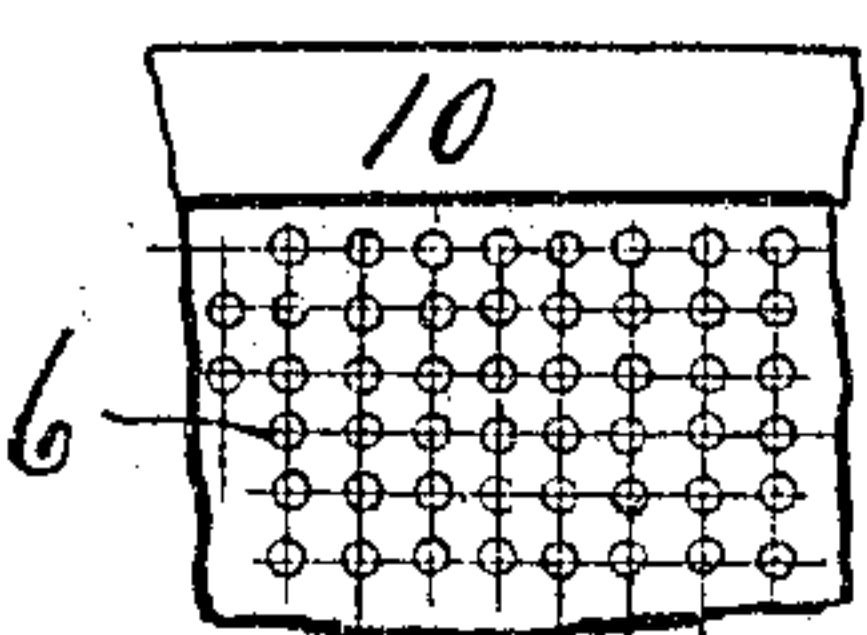
*Fig. 4.*



*Fig. 3.*



*Fig. 5.*



WITNESSES

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# UNITED STATES PATENT OFFICE.

FRANK BUCHANAN, OF SYRACUSE, NEW YORK.

## SCREEN ATTACHMENT FOR HEADLIGHTS.

No. 830,768.

Specification of Letters Patent.

Patented Sept. 11, 1906.

Application filed February 1, 1905. Serial No. 243,727.

*To all whom it may concern:*

Be it known that I, FRANK BUCHANAN, of Syracuse, in the county of Onondaga, in the State of New York, have invented new and useful Improvements in Screen Attachments for Headlights, of which the following, taken in connection with the accompanying drawings, is a full, clear, and exact description.

This invention relates to improvements in screen attachments for headlights, in which a split clamping-ring is adapted to be removably attached to the front-glass-supporting frame and is provided with open-ended ways or guides in which is removably inserted a suitable screen across the front face of the glass for subduing the light. These headlights are used extensively on the electric cars of suburban railways and are usually equipped with electric-arc lamps located in the focus of a parabolic reflector, so as to afford an intense light while traveling through unlighted suburban or country districts; but when approaching or passing through the lighted streets or more thickly populated districts where the traffic and travel of pedestrians is more or less congested it becomes necessary to materially subdue this light in order to obviate its "blinding" effect upon horses and the traveling public in general.

My object, therefore, is to provide means whereby the headlight now in use may be readily equipped with a screen attachment without altering or in any way mutilating the frame of the headlight.

Another object is to enable the motorman to readily insert or remove the screen without disturbing its supporting-ring, which may remain permanently in the glass-supporting frame when once attached.

Other objects and uses will be brought out in the following description.

In the drawings, Figure 1 is a front elevation of a headlight, showing my improved screen and its supporting-ring as attached to the front door or glass-supporting frame of the headlight. Fig. 2 is an enlarged transverse sectional view through the front door of the headlight-frame and my improved screen and its supporting-ring as operatively mounted thereon. Figs. 3 and 4 are perspective views showing, respectively, the split supporting-ring for the screen and the screen which is adapted to be supported by said ring. Fig. 5 is an enlarged face view of a portion of the screen.

A represents the front door of a headlight as provided with a forwardly-projecting annular flange *a*, which is of less diameter than but concentric with the remaining portions of the door and has its front edge crimped or turned inwardly at *a'* for forming an annular abutment or shoulder against which the edges of the glass plate, as *B*, rest, said glass plate being provided with a rubber or equivalent buffer *b*, which encircles its marginal edge and forms a yielding cushion to prevent contact of the glass with its metal supporting-frame, as the flanges *a* and *a'*. This glass is held in place by a retainer-ring *d* and suitable brackets *c*, having springs *c'* bearing against the retainer-ring *d* and serving to hold the glass from inward displacement and against the annular shoulder *a'*.

My improved screen-holder consists of a circular split ring 1, which is of substantially the same diameter as the outer diameter of the flange *a* and is split transversely through one side at 2, the meeting ends being bent outwardly to form opposed ears 3, each of which is provided with an aperture for receiving a clamping-bolt 4. This split ring is placed upon the periphery of the flange *a* and is tightened by means of the clamping-bolt 4, whereby it is firmly fastened to said flange against endwise or circumferential movement. This ring is preferably formed of metal, and its outer or front edge is provided with opposite guides or ways 5, which receive the marginal edges of a suitable screen 6 for retaining said screen in position in front of the glass *B*.

The upper ends of the guides or ways 5 are open and are disposed in a horizontal plane running through substantially the center of the ring 1, while the lower ends extend downwardly toward each other some distance, following the curve of the ring 1, but terminating short of the split 3, so that when the screen 6 is placed in position from the top downwardly the front walls of the guides or ways 5 overlap upon the adjacent edges of the screen, but retain it otherwise close to the glass *B*, and the lower end of said screen therefore extends some distance above and below the guides 5.

In forming the guides 5 I provide the front edge of the ring 1 with opposite pairs of L-shaped ears 7, those of each pair being located below the horizontal center of the ring, and to each pair of ears is secured a laterally-projecting narrow plate 5, which



is disposed in front of but separated from the flange *a'* a distance corresponding to the thickness of the screen-supporting frame which the guides 5 are adapted to receive.

5 The screen 6 may be of any desired circular construction of sufficient area to cover the exposed portion of the glass B—that is, it may be made of translucent or ground glass or of any other suitable material; but in  
10 the present instance I have shown a foraminous plate or disk as provided with a marginal reinforcing-band 10, having a suitable handle 11, whereby the screen may be easily inserted into the guides 5 or removed there-  
15 from by the motorman.

The screen-disk 6 preferably consists of a thin sheet of brass or equivalent material which is finely perforated throughout its area and has an advantage over woven-wire  
20 screens by reason of its perfectly smooth faces and freedom from broken strands or threads. Another advantage of this perforated screen-disk is that it may be manufactured very cheaply and is more readily  
25 mounted in its supporting frame or ring 10 than a wire screen and is less susceptible to buckling or distortion.

The guides 5 of the screen-supporting ring 1 are arranged equidistant from the trans-  
30 verse split 3, and in assembling the ring upon the door-flange *a* the split 3 is arranged centrally at the bottom, so that the upper ends of the guides 5 are disposed in a horizontal line running substantially through the cen-  
35 ter of the ring, and therefore the distance between the upper ends of the guides 5 is substantially equal to the diameter of the ring 1, while the distance between the lower ends of the guides is considerably less than such di-  
40 ameter, so that when the screen 6 is inserted in the guides it is held by the circumferential walls of the guides in a position substantially concentric with the ring 1 and directly in front of the glass plate B with the handle 11  
45 uppermost. It is now evident that when the ring 1 is once clamped to the flange *a* by the bolt 4 the motorman may readily insert or re-  
move the screen, which when removed may

be hung in some convenient place on the car by means of the handle 11, it being under- 50  
stood that the screen is only placed in operative position in front of the glass B when the car is passing through the more thickly popu-  
lated parts of a city or village.

Having thus described my invention, what 55  
I claim, and desire to secure by Letters Patent, is—

1. A screen attachment for headlights, comprising a circular band split through one side and having its meeting edges formed 60  
with radially-projecting ears, a clamping-bolt passed through said ears, said band having portions of said sides formed with L-shaped lugs projecting inwardly from one edge of the band, guide-pieces each secured 65  
to one set of lugs at one side of the band, and disposed in a plane parallel with, but a slight distance from the adjacent edge of said band, and extending from a plane coin-  
70 cident with the diameter of the band toward the clamping-ears, in combination with a screen-disk slidable between the guide-pieces and adjacent edges of the band and engaging the lugs on opposite sides of the band.

2. In combination with a headlight-door 75  
having an annular flange, a glass plate supported within the flange, an expansible and compressible split ring separate from, but removably fitted upon the periphery of the flange, means for compressing the band 80  
against the flange to hold it in place upon said flange, guide-plates rigidly attached to the ring and disposed in a plane some distance in front of the front edge of the flange and extending downwardly and inwardly 85  
parallel with opposite sides of the band from a plane coincident with one diameter of the band, and a screen having a circular supporting-frame inserted between the guide-plates and adjacent edge of the flange of the door. 90

In testimony whereof I have hereunto set my hand this 30th day of December, 1904.

FRANK BUCHANAN.

Witnesses:

H. E. CHASE,  
M. M. NOTT.