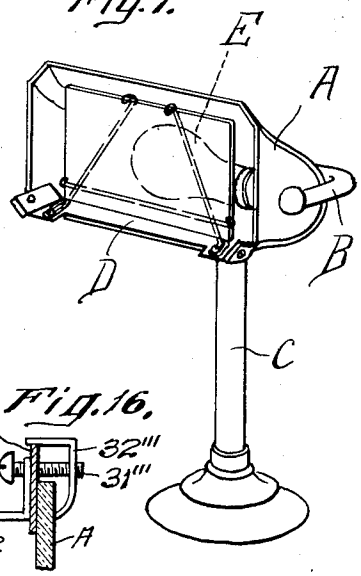
Aug. 29, 1933. A. BOSTROEM 1,924,538

LIGHT FILTER

Filed March 6, 1931

Fig. 1.



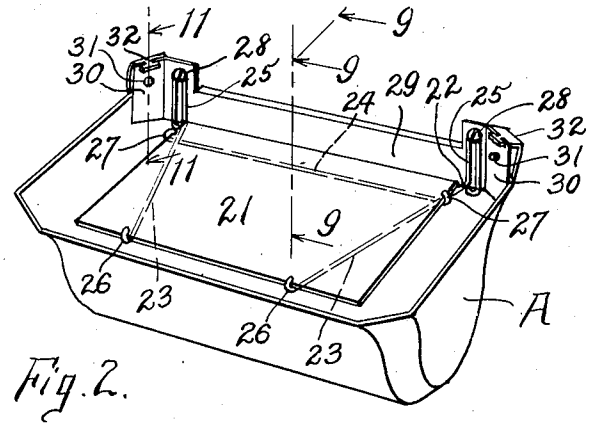


Fig. 2.

Fig. 16.

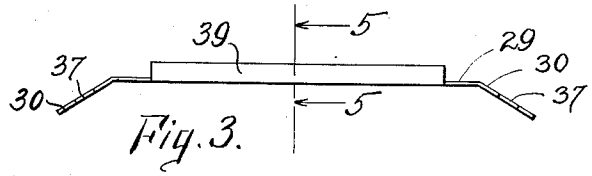


Fig. 3.

Fig. 5.

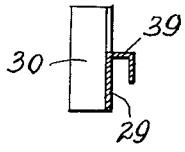
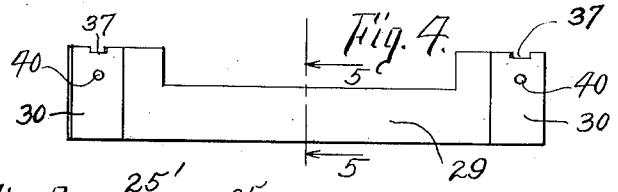


Fig. 4.



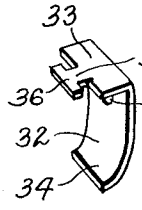


Fig. 6.

Fig. 8.

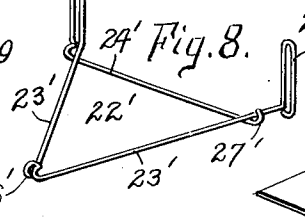
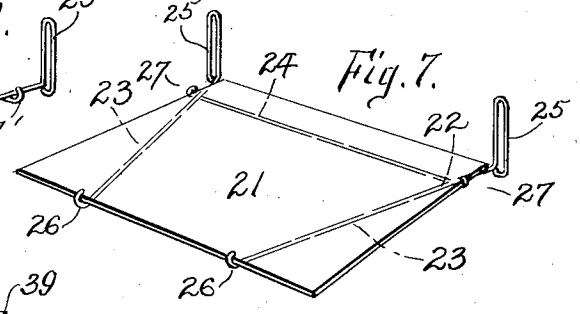


Fig. 7.



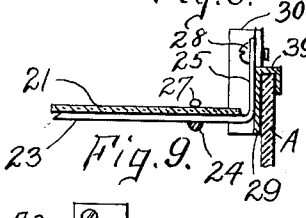
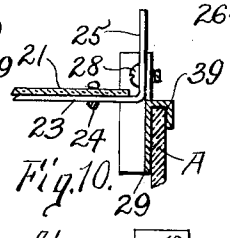


Fig. 9.

Fig. 10.



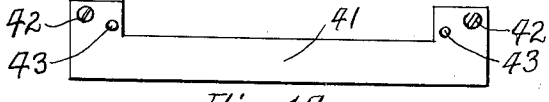


Fig. 14.

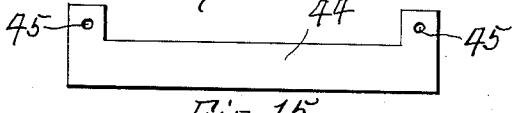


Fig. 15.

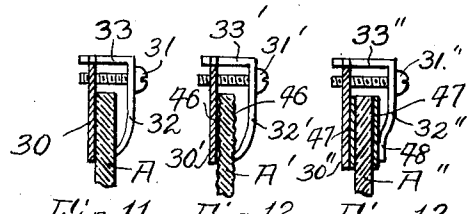


Fig. 11. Fig. 12. Fig. 13.

INVENTOR

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Patented Aug. 29, 1933 1,924,538

UNITED STATES PATENT OFFICE

1,924,538

LIGHT FILTER

August Bostroem, Brooklyn, N. Y., assignor, by mesne assignments, to Faries Manufacturing Company, Decatur, Ill., a corporation of Illinois

Application March 6, 1931. Serial No. 520,733

5 Claims. (Cl. 240—73)

My invention relates to improvements in light filters and in particular to means for supporting such filters in relation to the source of light. While my invention is particularly applied to such use, it may be, (and such use is contemplated), used to connect any two separate members in other arts, particularly where an adjustable or detachable connection is desired and where ordinary fastening devices cannot be readily applied.

The main objects of my invention are first, the provision of convenient mounting means for a light filter or daylight screen near the light source. It is particularly applicable where it is desired to attach the screen to a glass reflector without having to drill holes into or specially shape the glass reflector. A further object is the provision of a detachable mounting means for a light filter or daylight screen so that the screen may be readily removed or placed in position in order to clean the reflector or light source or screen or to replace them. A third object is to make the light screen adjustable within its mounting and also readily removable therefrom so as to facilitate replacement or cleaning. These same objects and others too numerous to mention are in view where my invention is used to join any detached members in other arts and its use in connecting all manner of disconnected members, where similar problems arise, will be obvious.

Referring more praticularly to the drawing:

Fig. 1 is a perspective view of my invention applied to a portable lamp of conventional style. The reflector is positioned so as to expose my invention.

Fig. 2 is a perspective view showing more in detail, my invention applied to the reflector of the lamp shown in Fig. 1, the reflector being inverted so as to expose my device.

Fig. 3 is a top plan view of the main clamping member.

Fig. 4 is a side elevation of the same, and

Fig. 5 is a section on the line 5—5 of Figs. 3 and 4 looking in the direction of the arrows.

Fig. 6 is a perspective view of one of the clamp jaws.

Fig. 7 is a perspective view of the light screen supporting frame.

Fig. 8 is a perspective view of a modified form of screen supporting frame.

Fig. 9 is a section on the plane 9—9—9 of Fig. 2 showing the light filter in one extreme position of adjustment.

Fig. 10 is a view similar to Fig. 9, but the screen is in the other extreme position of adjustment, in which position removal is possible.

Fig. 11 is a sectional view on line 11—11 of Fig. 2 through one of the clamps.

Fig. 12 is a similar sectional view showing a modification.

Fig. 13 is a similar sectional view showing another modification.

Fig. 14 is a side elevation of a modified form of main clamping member, and

Fig. 15 is a side elevation of another modified form of main clamping member.

Fig. 16 is an end elevation of the part shown in Fig. 15, with the addition of co-operating parts.

Similar numerals refer to similar parts throughout the several views.

In Fig. 1, my invention, designated collectively as D, is shown attached to the reflector A of a portable lamp having a reflector supporting bracket B, and a standard C. A light filter 21 is placed in the mouth of the reflector A and serves to intercept and absorb all unwanted rays emanating from the light source E, which is shown as an incandescent electric lamp.

The light filter 21 is supported in a light yet strong frame 22, which consists of two side members 23 and a cross bar 24 permanently fastened thereto, as by electric welding or soldering. The side members 23 terminate at one end in loops 25 disposed at right angles thereto, and at their other ends are bent into hook form 26 so as to retain the screen 21 when it is inserted in the frame 22. Similar hooks 27 are formed for the same purpose on the ends of the cross bar 24. The whole frame 22 is made of material strong enough to support the light filter but as thin as possible so as to intercept the minimum of light and I have found steel wire very suitable for that purpose. The loops 25 are elongated so as to slide over the screws 28, 28 by means of which the frame may be adjustably clamped to a flexible clamping member 29, of sheet metal or other suitable substance, which serves as a clamping member and at the same time supports the light screen supporting frame 22. The clamping member 29 is provided, in the preferred embodiment, with two angularly disposed portions 30 which have threaded holes 40, into which pass screws 31, the latter serving to hold clamping jaws 32 in opposed relation to the clamping member 29.

I find that best form of clamping jaw 32 to be that shown in Fig. 6. The piece 32 is here shown provided with two angularly disposed portions 33 and 34, the upper of which has an extension

consisting of a neck 35 and a head 36, the neck portion being designed to fit in the notch 37 of the clamping member 29 while the head 36 prevents lateral retraction therefrom. The piece 32 is also provided with a hole 38 through which passes one of the screws 31.

The clamping member 29 has its middle portion folded so as to form a channel portion 39. This channel portion is intended to fit over the edge of the reflector A and to co-operate with the clamp members 32 to securely attach the member 29 to the reflector. It accomplishes this due to the binding action which results when the members 29 and 32 are drawn together by adjusting the screws 31. Owing chiefly to the irregularities in the surface of the glass the clamping member 29 is deformed considerably and because of the greater rigidity imparted by the channel portion and the confinement of the reflector within the parallel walls of the channel a greater degree of contact and of pressure is secured between the clamping member and the reflector so that a firmer grip of the clamp on the reflector is obtained.

In Fig. 8 is shown a modified form of light-screen supporting frame. This is designated by numeral 22′ and its distinguishing feature lies in that the side members 23′ are not separate as are the members 23 of frame 22 but are formed from the same piece of wire bent at its middle into a hook 26′ corresponding to the separate hooks 26, 26. Loops 25′, 25′ are formed on the ends of the portions 23′ and a cross piece 24′ is provided.

Instead of providing the clamping member with the angularly disposed portions, which I prefer where a reflector of suitable contour is used, the clamping member may be made of a flat piece 41, (Fig. 14) with screws 42, 42 provided for attaching the screen supporting frame (22) and threaded holes 43, 43, corresponding to holes 40, 40, provided for the clamping screws 31, 31. All parts of member 41 are in the same plane except the central portion, which may be formed with a channel part 39 as before. If desired, however the channel part may be omitted and sole reliance for support be placed on the clamps 32. This is true of the forms of Figs. 2 and 15, (to be described) as well as that of Fig. 14.

A still further modification may be made as shown in Figs. 15 and 16, where the main clamping member may be provided with a hole 45 at each end. Through each of these holes which must not be threaded, would pass a screw 31‴ which would be anchored in a threaded hole of clamp 32‴. Under the head of this screw would be placed the loop 25 so that by adjusting a single pair of screws the screen supporting frame would be locked and the whole device clamped to the reflector.

In order to make the clamping more effective the reflector A′, as shown in Fig. 12 may have its surfaces roughened where they are engaged by clamps, as shown at 46. An alternative construction is the cementing on the reflector A″ of strips 47 of paper, cloth, leather, rubber or any other material which can be made to adhere to glass and would afford a good gripping surface for the clamp 32″. The latter may then be formed with a flattened portion 48 so as to afford a greater contact area, altho with an unroughened reflector surface the form of clamp 32, which has the lower end of the clamp engaging the reflector at an angle, is preferable.

The operation of the device will be understood from Figs. 9 and 10 in conjunction with Fig. 2. To clamp the device in place, the screws 31, 31 are first loosened and the parts mounted on the reflector. When in proper position the screws are tightened so as to lock the device in place. By loosening the two screws 28 the frame 22 carrying the light screen 21 may be raised or lowered, either to adjust the screen in relation to the source of light or to remove the screen. This latter is possible when the frame 22 is in the position shown in Fig. 10. In this position the screen 21 may be slid to the right and out of the frame 22, the loops 25, as shown in Figs. 2 and 7, being so spaced that the screen will pass between them and thru the cut away portion of 29. This is very convenient when breakage of the screen occurs as it enables ready replacement without disconnecting the clamping member from the reflector. In the position of adjustment shown in Fig. 9 it is impossible to remove the screen as it is held on three sides by hooks 26 and 27 and on the fourth side by the member 29. Fig. 9 shows the screen in its uppermost position of adjustment (it being remembered that in this figure the parts are shown upside down) and Fig. 10 shows it in its lowermost position, in which position, as explained above, the glass screen 21 may be removed.

I claim:

1. In a lamp, a source of light, a reflector surrounding said source of light except on one side, a light filter positioned in said open side of said reflector, a clamping member removably positioned on one side of said reflector and comprising a main member with its ends angularly disposed, said main member having a recess formed at its middle, and the lower edge of the recess formed into a channel adapted to engage the edge of the reflector, a clamp engaging each said angularly disposed portion in opposed relation, a screw passing freely through each clamp and engaging a threaded hole in the main member whereby said clamps and main member may be adjusted to grip the edge of the reflector, a second pair of screws carried in threaded engagement by the main member, a frame composed of light but strong material such as steel wire, two loops disposed in angular relation to the frame, said loops being elongated so as to permit the body of said last mentioned screws to pass therethrough but not their heads, whereby said screws may be manipulated to adjustably clamp the frame to the clamping member, said frame being provided with curved end portions in the form of hooks, and a light filter supported by said hooks and retained thereby, said recess and said frame being so dimensioned and relatively disposed that in certain positions of adjustment the light filter may be removed from the frame by sliding same laterally through the recess in the main member.

2. In a lamp, a source of light, a reflector, a light screen, a clamping member comprising a main member having a recessed middle portion and angularly disposed end portions, said end portions carrying adjustable clamps, a frame adjustably carried by said main member and having hook-shaped end portions, and a light filter supported by said hooks and retained thereby, said frame being so dimensioned and disposed relatively to said recess that in certain positions of adjustment the light filter may be disengaged from the frame by sliding same laterally through the recess in the main member.

3. A connecting means for two disconnected elements comprising a main member with a central recess and angularly disposed end portions,

means carried by said end portions to adjustably grip one of the elements, supporting means adjustably carried by said main member and adapted to support and retain the other of said elements, said recess and supporting means being so dimensioned and relatively disposed that in certain positions of adjustment the last-named element may be disengaged from the supporting means and slid laterally through the recess.

4. In a lamp, a source of light, a reflector surrounding said source of light except on one side, a light filter positioned in said open side of said reflector, a clamping member removably positioned on one side of said reflector and comprising a main member having a recess formed at its middle and the lower edge of the recess formed into a channel adapted to engage the edge of the reflector, a pair of screws passing freely through the main member and on its other side each in threaded engagement with a clamp, a frame of light but strong material, such as steel wire, said frame having elongated loops, each loop wide enough to pass over the body of one of the said screws but not its head, said loops being positioned on the screws intermediate the screw heads and the main member, hooks formed on said frame, a light filter supported by and retained by said hooks, said screws being adapted to adjustably lock together the frame, the main member, and the clamps, said recess and said frame being so dimensioned and relatively disposed that in certain positions of adjustment the light filter may be disengaged from the hooks in the frame by sliding same laterally through the recess in the main member.

5. In a lamp, a source of light, a reflector, a light screen, a clamping member comprising a main member having a recessed middle portion, the end portions of the main member carrying adjustable clamps, a frame adjustably carried by said main member and having hook-shaped end portions, and a light filter supported by said hooks and retained thereby, said frame being so dimensioned and disposed relatively to said recess that in certain positions of adjustment the light filter may be disengaged from the frame by sliding same laterally through the recess in the main member.

AUGUST BOSTROEM.