

June 19, 1923.

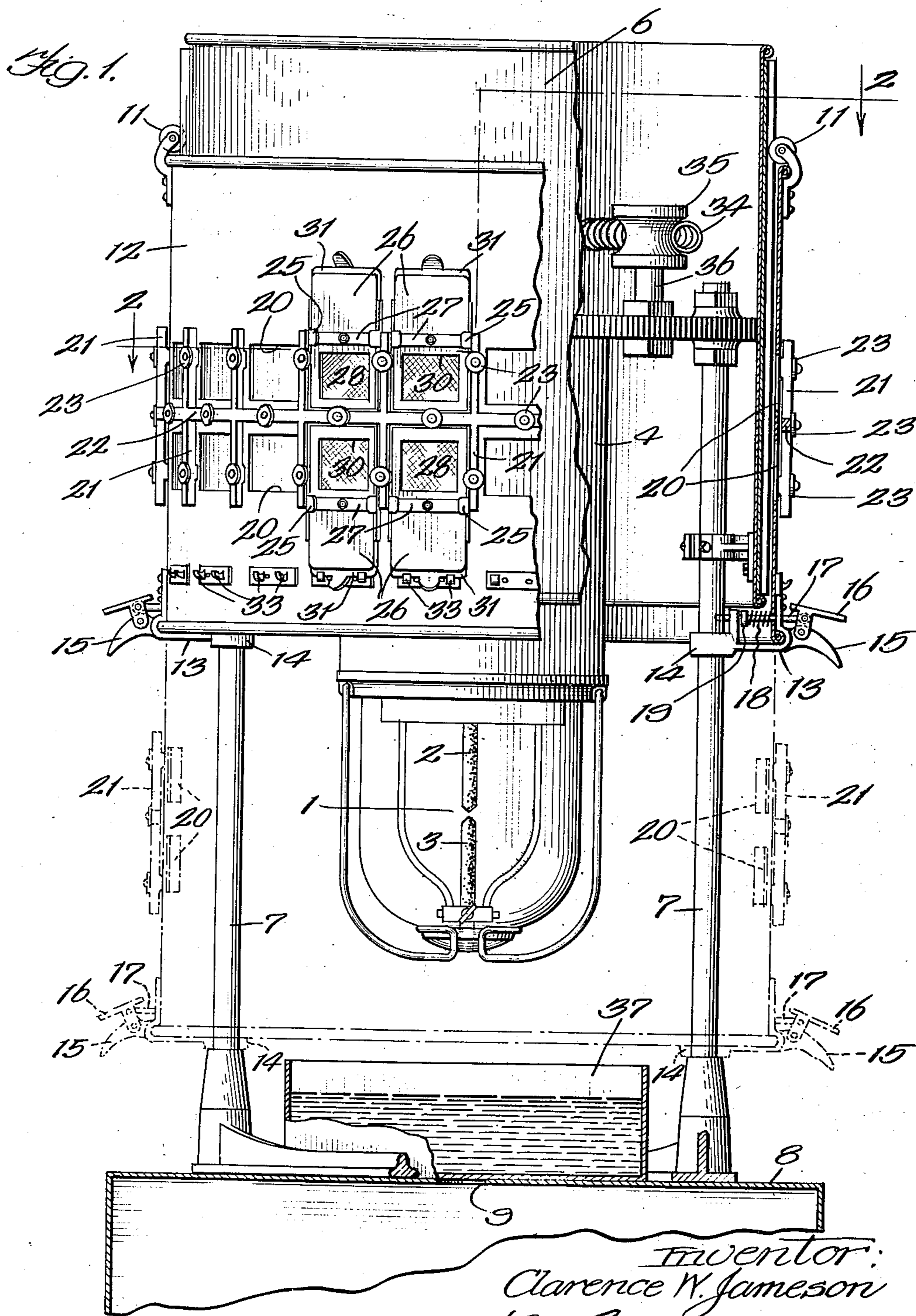
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C. W. JAMESON

APPARATUS FOR TESTING THE FADING ACTION OF LIGHT

Filed May 23, 1921

2 Sheets-Sheet 1



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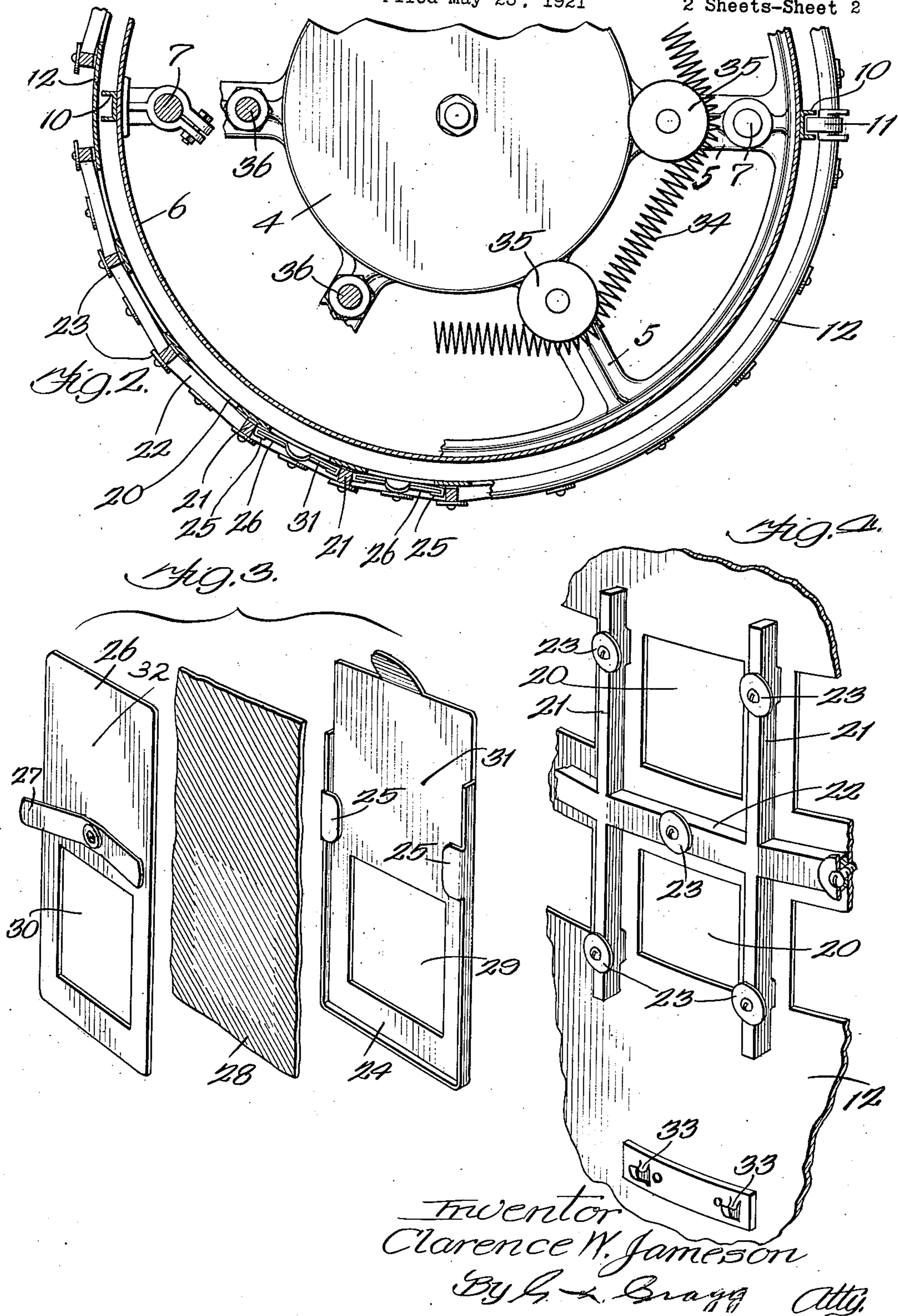
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2 Sheets-Sheet 2



UNITED STATES PATENT OFFICE.

CLARENCE W. JAMESON, OF LOMBARD, ILLINOIS.

APPARATUS FOR TESTING THE FADING ACTION OF LIGHT.

Application filed May 23, 1921. Serial No. 471,946.

To all whom it may concern:

Be it known that I, CLARENCE W. JAMESON, citizen of the United States, residing at Lombard, in the county of Du Page and State of Illinois, have invented a certain new and useful Improvement in Apparatus for Testing the Fading Action of Light, of which the following is a full, clear, concise, and exact description.

My invention relates to equipment employed for holding objects that are to be subject to the action of light and finds one important use in positioning cloth or other object in relation to a source of artificial light to test the fading action of light thereon, though the invention is not to be limited to any particular use to which it may be put.

The equipment of my invention includes a holder for cloth or other object that is to be subject to the action of light, this holder having two portions for holding the object firmly therebetween and permitting the passage of such light at one place and preventing it at another. The part of the object subjected to the light may be compared with the part not subjected to the light in judging the effect of the light upon the object.

My invention further includes a carrier for the holder arranged to move with reference to a light shield that supports a source of artificial light, such as an electric arc lamp, that depends below the shield. The carrier may be moved to one position to afford access to the lamp and to another position to place the holder in position to be reached by the light. When the apparatus is in use the light shield and the carrier keep the light from striking the eyes of the operator, the light being preferably extinguished when the carrier is adjusted to afford access to the lamp.

I will explain my invention more fully by reference to the accompanying drawings showing the preferred embodiment thereof and in which Fig. 1 is a view in front elevation with parts broken away and parts shown in section, of an apparatus constructed in accordance with the invention, an alternative position of the carrier for the holder being shown in dot and dash lines; Fig. 2 is a sectional view on line 2—2 of Fig. 1; Fig. 3 is a perspective view showing the two parts of the cloth holder and cloth adapted to be held thereby, all in sepa-

rated relation; and Fig. 4 is a perspective view showing a part of the preferred formation of the carrier for the holder.

Like parts are indicated by similar characters of reference throughout the different figures.

The source of artificial light illustrated is in the form of an electric arc lamp 1 whose carbons 2 and 3 are provided with suitable electro-magnetic controlling mechanism whereby they are included in circuit and the length of the arc between the carbons is automatically regulated while the lamp is in circuit. Such electro-magnetic mechanism is housed within the casing 4 and as it forms no novel part of my present invention it is not illustrated and will not be further described. The arc lamp structure is supported upon a spider 5 that is located within and is secured to a tubular light shield 6 that is positioned to partially obstruct the light from the lamp. The support 5 for the arc lamp is so disposed with respect to the shield 6 that the arc lamp, depending from said support, will project at its lower end sufficiently below the light shield to have the lighting center of the lamp below such shield. The spider 5 is supported by two upright cylindrical rods or posts 7 which in turn are supported upon the table 8 and which are of such length as to elevate the light shield and the lamp a desirable distance above said table which is provided with an opening 9 in line with the carbons of the lamp so that the lower carbon may be dropped through said opening in the lamp trimming operation.

Upright channel irons 10 are carried by the light shield 6 at diametrically opposite sides thereof. These channel irons constitute runways that receive the rollers 11 that are mounted upon a carrier 12 that is in the form of a sleeve surrounding or embracing the tubular light shield 6 that is between the carrier and lamp, the carrier being movable up and down along the light shield, the rollers 11 upon the carrier, in co-operation with the tracks thereon, guiding the carrier in its up and down movements. The carrier supports two brackets 13 having horizontal branches that extend beneath the carrier and inwardly, these horizontal branches terminating in guiding rings 14 which surround the posts 7. Finger holds 15 are carried by the brackets 13 and thumb levers 16 are pivoted upon said finger holds. Holding

pins 17 are pivoted upon the thumb levers 16 and project inwardly. When the carrier 12 is elevated these holding pins are positioned to be in registry with openings 5 formed in the posts 7 whereupon springs 18 surrounding said pins and engaging shoulders 19 thereon serve to press said pins into said holes whereby the carrier is held in an elevated position. If the carrier is to be 10 lowered the thumb levers are depressed whereupon the carrier may assume the position shown in dot and dash lines in Fig. 1, the rings 14 then resting upon the enlarged lower ends of the posts 7 as illustrated in said figure. By this arrangement the carrier may have a portion thereof moved into and out of line with the light shield and light source.

The carrier is preferably formed as illustrated in detail in Fig. 4, it being provided with a number of light transmitting openings 20 margined by upright ribs 21 and horizontal ribs 22, these ribs carrying discs 23 that extend into the spaces margined by 25 the ribs. As illustrated, the carrier prevents the passage of light except where the light transmitting openings 20 are located. When lowered, it constitutes a continuation of the light shield 6.

30 The cloth holder illustrated most clearly in Fig. 3 comprises a body portion 24 having inturned ears 25. The holder also includes a closure 26 carrying a spring 27 adapted to underlie the ears 25 when the closure is 35 in place. The cloth or other object 28 that is to be subject to the fading action of the artificial light is placed within the body portion 24 of the holder, whereafter the closure 26 is positioned within the holder, the spring 40 27 serving to clamp the closure tightly against the cloth 28 and to press the cloth firmly against the back of the holder body. The two portions 24 and 26 of the holder have registering areas 29 and 30 for transmitting the light therethrough and registering areas 31, 32 adjacent the areas 29 and 45 30 that prevent the passage of such light. There are two circular rows of openings 20 between which the ribs 22 intervene. There 50 may therefore be an upper row of holders which may be bottomed upon the top surfaces of the ribs 22. The lower row of such holders may be bottomed within the ears 33 that are disposed sufficiently below 55 the lower row of openings 20. The portions of the carriers that support said holders may be brought into and out of line with the light shield and light source.

When the lamp is to be inspected or adjusted the carrier is elevated. When the 60 apparatus is being loaded with the cloth or other objects that are to be subject to the light the carrier 12 may be either in its elevated or lowered position, the carrier being preferably then elevated if the lamp is

burning. If the carrier is elevated and is to be lowered the thumb pieces 16 are depressed and the carrier is permitted to descend to occupy the position shown by dot and dash lines shown in Fig. 1 in which 70 position the openings 20, 29 and 30 are out of alignment with the light shield 6 and are positioned to be penetrated by the light. When the portions of the cloth holders between which pieces of cloth were sandwiched are separated after the apparatus 75 has been in operation a desired length of time, the cloth may be removed and the fading action of the light thereupon may be observed by noting the contrast between the 80 portions of the cloth that were in registry with the openings 20, 29 and 30 and the portions of the cloth that were in registry with the non-light transmitting portions of the cloth holders. 85

As I have illustrated the invention the light transmitting openings 20, 29 and 30 are clear spaces unoccupied by any material but it is to be understood that the invention is not to be limited to the absence of material 90 at the areas 20, 29 and 30 as certain material may be employed which will permit the passage of the light without interfering with the fading action thereof upon the cloth. The light obstructing portions of the cloth 95 holders are preferably opaque but it is obvious that these portions of the holders may be constructed of material that will permit the passage of the light but will so modify the light in its passage as to deprive it of 100 its fading action.

It is obvious that the apparatus of my invention may be employed for holding other objects than cloth and may also be 105 used for enabling light to have other action upon such objects than fading action.

As I have illustrated the invention the resistance 34 that is in series with the carbons of the arc lamp is provided upon the exterior of the lamp casing and is carried 110 by and above the support 5, being positioned by insulators 35 that are carried by said support upon posts 36. The heat due to the current passing through the resistance creates a higher temperature within the 115 upper portion of the upright tubular light shield 6 to induce flow of cooling air upwardly through said shield and the support 5 that is made in the form of a spider for the purpose. The upwardly flowing 120 cool air prevents the heat from the arc effectively reaching the cloth holders. Further to prevent the heat of the lamp from scorching or otherwise attacking the cloth or other objects held by the holders 24, 26, I 125 provide a humidifier to moisten the atmosphere in the neighborhood of the holders, this humidifier being preferably merely in the form of a water holding pan or container 37 which is placed upon the table 8 130

beneath the lamp so that the water in the pan will be subject to the heat of the lamp to generate the desired moisture.

While I have herein shown and particularly described the preferred embodiment of my invention I do not wish to be limited to the precise details of construction shown as changes may readily be made without departing from the spirit of my invention, but having thus described my invention I claim as new and desire to secure by Letters Patent the following:—

1. Apparatus of the class described including an upright hollow light shield open for the circulation of air therethrough; in combination with an electric lamp carried by the light shield with its lighting center below the same; a carrier movable along the light shield to elevate or lower an object upon the carrier with reference to the lamp and light shield; and an electrical heat producing resistance included in the circuit of the lamp and located within light shield.

2. Apparatus of the class described including a hollow light shield open for the circulation of air therethrough; in combination with a source of artificial light; an object carrier adjustable along the light shield; and a water container located below the source of artificial light and said carrier.

3. Apparatus of the class described including a movable carrier; in combination with a source of artificial light; and a light shield partially obstructing the light from said light source, the carrier having a range of movement to enable a portion thereof to be brought into and out of line with the light shield and light source.

4. Apparatus of the class described including a carrier; in combination with a source of artificial light; and a hollow light shield between the carrier and light source and from which said light source depends with its lighting center below the shield, the carrier being movable along the light shield and having a range of movement to enable a portion thereof to be brought into and out of line with the light shield and light source.

5. Apparatus of the class described including a vertical carrier; in combination with a source of artificial light; a vertical hollow light shield embraced by the carrier and from which said light source depends with its lighting center below the shield, the carrier being movable vertically along the light shield and having a range of move-

ment to enable a portion thereof to be brought into and out of line with the light shield and light source.

6. Apparatus of the class described including a movable carrier; in combination with a source of artificial light; a light shield partially obstructing the light from said light source, the carrier having a range of movement to enable a portion thereof to be brought into and out of line with the light shield and light source, the portion of the carrier movable into and out of line with the light shield and light source having a light transmitting opening; and means for holding an object in line with said opening.

7. Apparatus of the class described including a carrier; in combination with a source of artificial light; a hollow light shield between the carrier and light source and from which said light source depends with its lighting center below the shield, the carrier being movable along the light shield and having a range of movement to enable a portion thereof to be brought into and out of line with the light shield and light source, the portion of the carrier movable into and out of line with the light shield and light source having a light transmitting opening; and means for holding an object in line with said opening.

8. Apparatus of the class described including a vertical carrier; in combination with a source of artificial light; a vertical hollow light shield embraced by the carrier and from which said light source depends with its lighting center below the shield, the carrier being movable vertically along the light shield and having a range of movement to enable a portion thereof to be brought into and out of line with the light shield and light source, the portion of the carrier movable into and out of line with the light shield and light source having a light transmitting opening; and means for holding an object in line with said opening.

9. A device for testing the action of light in the form of a holder including two portions for holding an object therebetween that have registering areas for transmitting such light and registering areas adjacent the aforesaid areas that prevent the passage of such light; and a clamping device for pressing said portions together.

In witness whereof, I hereunto subscribe my name this ninth day of May, A. D. 1921.
CLARENCE W. JAMESON.