April 7, 1942. E. KEARNEY 2,279,046

WINDOW SHADE TRIMMER

Filed Oct. 14, 1940 2 Sheets-Sheet 1

Fig. 1.

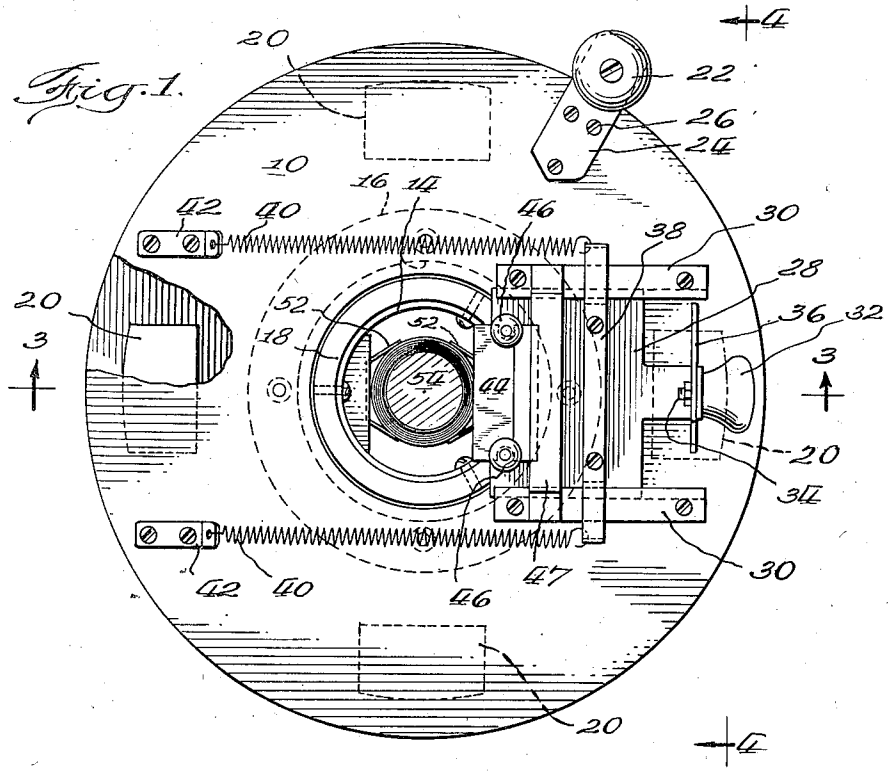
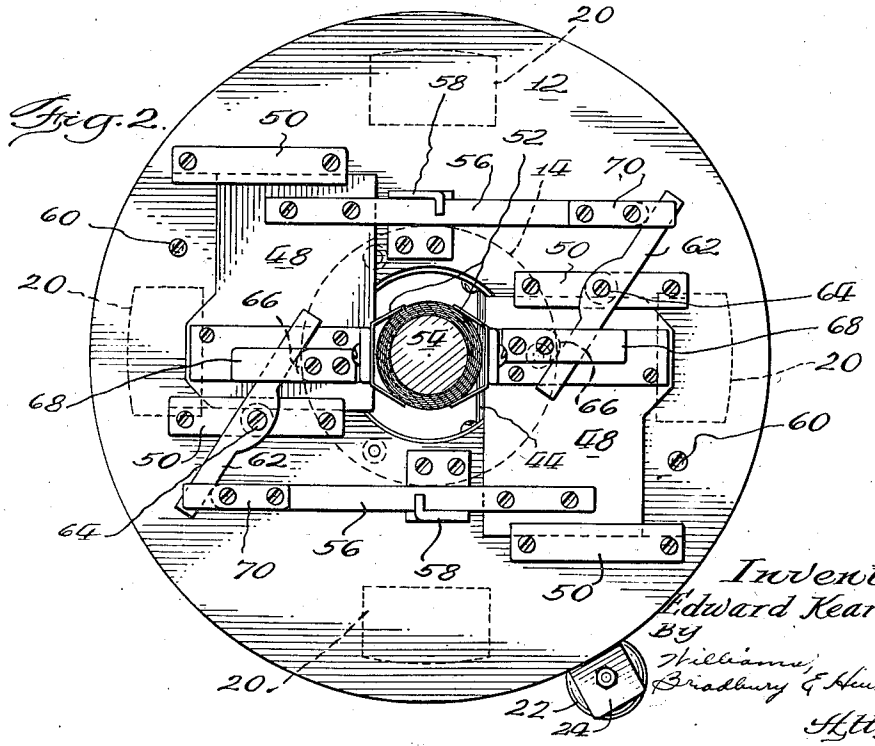


Fig. 2.



Inventor.
Edward Kearney
By
Williamson, Bradbury & Hinkle
Attys.

April 7, 1942. E. KEARNEY 2,279,046

WINDOW SHADE TRIMMER

Filed Oct. 14, 1940 2 Sheets-Sheet 2

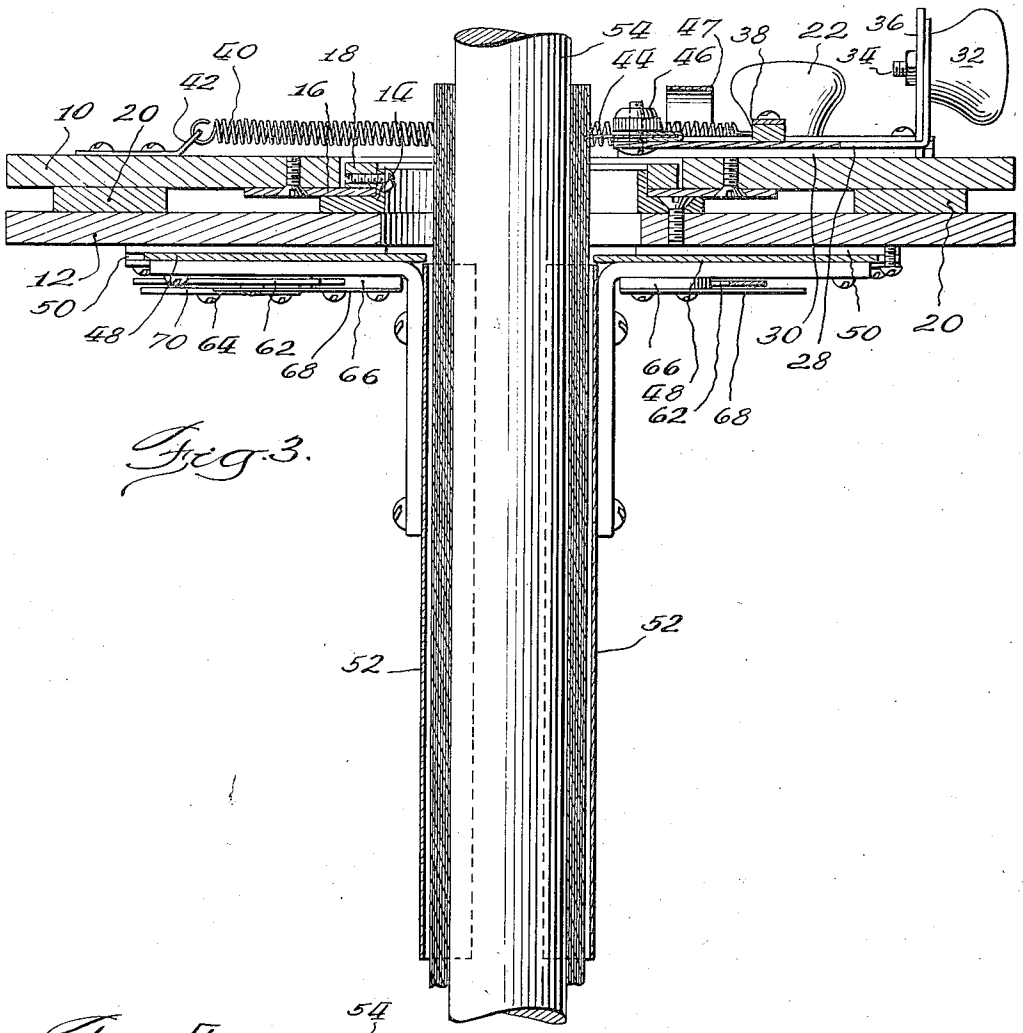


Fig. 3.

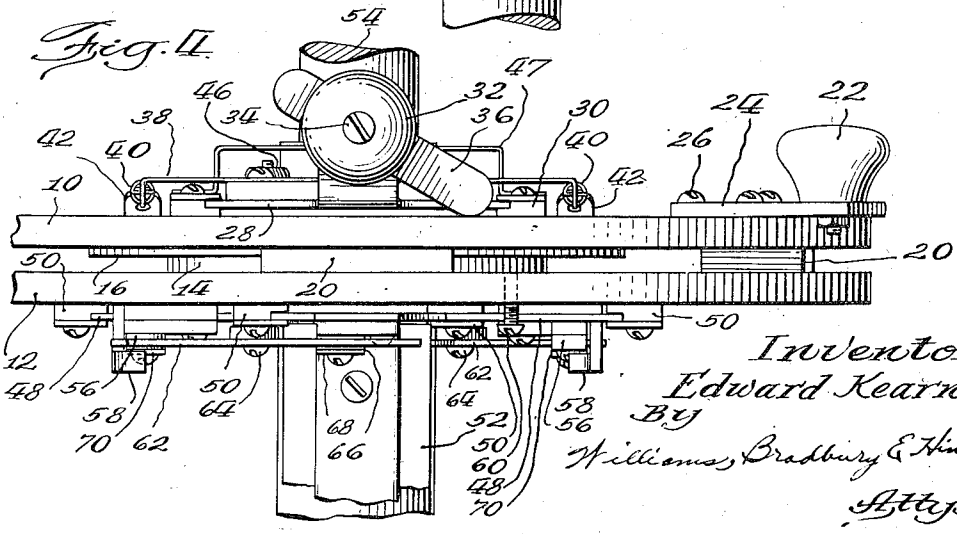


Fig. 4.

Inventor:
Edward Kearney
By
Williams, Bradbury & Hinkle
Attys.

Patented Apr. 7, 1942 2,279,046

UNITED STATES PATENT OFFICE

2,279,046

WINDOW SHADE TRIMMER

Edward Kearney, Chicago, Ill.

Application October 14, 1940, Serial No. 361,031

6 Claims. (Cl. 164—60)

This invention relates to window shade trimmers and is more particularly concerned with the provision of an improved device for trimming the edges of roll-type window shades after these shades have been attached to their rolls.

Generally, the device of the present invention consists of a head mounted to rotate about a rolled window shade with a means on the head to trim the edge of the window shade as the head is rotated.

It is one of the objects of my invention to provide a novel and improved window shade trimming device that can be held in the hand of the operator during the trimming operation.

A further object of my invention is to provide an improved window shade trimmer which accurately and automatically centers the rolled shade relative to the cutting head.

An additional object of my invention is to provide a novel arrangement for automatically centering and holding a rolled window shade relative to a revolving cutting head.

Further objects and advantages of the present invention will become apparent from the following description of a preferred embodiment of my invention, taken in connection with the accompanying drawings, in which:

Fig. 1 is a front elevation of a device embodying the present invention;

Fig. 2 is a rear elevation thereof;

Fig. 3 is a transverse sectional view taken along the line 3—3 of Fig. 1;

Fig. 4 is an edge view of a portion of the device taken substantially along the line 4—4 of Fig. 1.

The device of the present invention comprises front and rear annular discs 10 and 12, respectively. The apertures through the center of the discs are considerably larger in diameter than a roller shade to be trimmed by this device. Surrounding its aperture, the rearward disc 12 is provided with a sleeve 14, which extends through a similar aperture in an annular plate 16 secured to the rearward surface of the forward disc 10. The outward end of the sleeve 14 carries a removable ring 18 which permits the plate 16 to rotate relative to the sleeve 14, but prevents the plate 16 from moving longitudinally relative to this sleeve. Thus, the two discs are mounted to rotate relative to each other for a purpose which will appear presently. In order to prevent the forward disc from wobbling relative to the rearward disc, the rearward disc is provided with circumferentially spaced blocks 20, the outward faces of which bear against the inner surface of the forward disc. A knob 22 attached to the outward end of a crank arm 24, secured in turn to the forward face of the disc 10, enables the forward disc to be rotated manually relative to the rearward disc.

As may best be seen in Fig. 1, the forward disc 10 is provided with a radial reciprocable slide 28 adapted to move inwardly and outwardly toward the center of the disc in guides 30. At its outward end the slide 28 is provided with a knob 32. The same screw 34 which secures the knob 32 to the slide 28 also secures a pivoted latching finger 36 which when swung into latching position with the slide in its outward position, rests against the edge of the forward disc and prevents the slide moving inwardly. A bar 38 secured to the slide and extending transversely thereof, is attached at its ends to a pair of coil springs 40, the opposite ends of which are attached to anchoring members 42 secured to the face of the disc near its opposite edge. These springs resiliently urge the slide toward the center of the disc, so that when the latching finger 36 is released, the slide will move inwardly under the influence of these springs. At its inner edge, the slide 28 is provided with a sharp cutting edge which in the present embodiment is formed by a razor blade 44, secured to the slide by a pair of screws 46, thus providing a low cost, easily replaceable cutting edge for the slide. In the interest of safety a guard member 47 is secured to the guides and covers the edge of the blade when the slide is retracted.

The rearward disc 12 is provided on its rearward face with a pair of slides 48 adapted to move radially in guides 50. The guides 50 are all arranged parallel to each other and thus the two slides 48 will move inwardly and outwardly parallel to each other. Each of these slides carries a rearwardly extending bent sheet metal member 52 that together act as V-blocks to grip a roller shade 54 to be trimmed. Each of the V-blocks 52 is secured to its slide in such a position that a line passing through the center of the two V-blocks will bi-sect the annular discs and thus a roller shade gripped between these two V-blocks will automatically be centered relative to the discs along a line passing through the centers of the two V-blocks. In order automatically to center a shade in the direction at right angles to the line passing through the two V-blocks, I have provided a novel linkage which prevents the inward or outward movement of one of the slides 48 without a like movement by the other similar slide.

As may most clearly be seen in Fig. 2, this linkage comprises a bar 56 rigidly secured at one end to one of the slides 48 and which extends paral-

lel to the direction of movement of the slides. A second identical bar **56** is likewise secured to the other of the slides **48** at one end and extends parallel to the direction of movement of the slides. These two bars **56** are arranged upon opposite sides of the V-blocks **52** and are spaced an equal distance outwardly therefrom. Near their mid points, the bars **56** pass through guide members **58**, which prevent the bars **56** from wobbling from side to side as the slides **48** move inwardly and outwardly toward and away from each other. With the slides **48** retracted to the most outward position they normally assume, the free ends of the bars **56** are approximately opposite the centers of the slides. In this position the slides are prevented against further outward movement by stop members **60** which, as shown, may be screws threaded into the rearward surface of the disc **12** and against which the outward edges of the slides **48** abut when the slides have been moved outwardly to their desired retracted position.

The free ends of the bars **56** bear against one end each of a pair of rocker arms **62** which are pivoted at their mid points about screws **64** threaded into the adjacent guide members **50**. The opposite ends of these rocker arms **62** similarly bear against upstanding abutment members **66** secured to the slides **48** a distance from the pivot screws **64** equal to the distance between the pivot screws and the free ends, of the bars **56**. In order to prevent the ends of the rocker arms **62** slipping over the tops of the abutment members **66**, keepers **68** are secured to the tops of these members and extend outwardly and overlie the ends of the rocker arms **62**. Thus, the ends of the rocker arms **62** resting against the abutment members **66** are prevented against upward movement by the keepers **68** and against downwardward movement by the body of the slides **48**. Likewise similar keepers **70** are secured to the ends of the bars **56** to insure the outward ends of the rocker arms always bearing against the ends of these bars.

Referring to Fig. 2, if it is considered that the left hand slide **48** is moved inwardly as shown, the bar **56** carried by this slide will be urged toward the right. The free end of this bar, therefore, will push the end of the rocker arm which bears thereagainst to the right and rock the opposite end of the rocker arm toward the left about the pivot screw **64**. This opposite end of the rocker arm bearing against the abutment member **66** will urge the right hand slide inwardly, and since the distance between the abutment member **66** and the pivot screw **64** is the same as the similar distance between the pivot screw and the free end of the bar **66**, the outward movement of the free end of the bar **56** beyond the pivot screw **64** will be exactly the same as the inward movement of the abutment member **66** away from the pivot screw **64**.

Since the linkage arrangement is symmetrical, that is, since the right hand slide **48** similarly carries a bar **56** which rocks a rocker arm **62** bearing against an abutment member **66** on the left hand slide **48**, it will be seen that if the right hand slide **48** had been moved inwardly, exactly the same type of linkage arrangement would cause the left hand slide **48** to move inwardly a similar amount. Likewise if considering the parts to be in the position shown in Fig. 2, one of the slides **48** is moved outwardly, the abutment member **66** carried by that slide will rock the end of the rocker arm **62** bearing against that abutment member outwardly and cause the opposite end of the rocker arm **62** to urge the bar **56** bearing thereagainst in the opposite direction, thus causing the slide **48** rigidly secured to this bar **56** to be moved in a direction opposite to the first slide.

It will be seen that the above described linkage arrangement provides for the desired simultaneous movement of the two slides **48** without requiring that the ends of the bars **56** be pivoted to the ends of the rocker arms **62** and that likewise, it is not necessary that the inward ends of the rocker arms **62** be pivoted to the abutment members **66**, but that rather the abutment members **66** and the free ends of the bars **56** merely bear against the edges of the rocker arms **62**. This novel linkage arrangement, which obviates the use of pivots at these points, also avoids the mechanical difficulty which arises from the fact that as the rocker arms are rocked from a position at right angles to the direction of movement of the slides to a position inclined thereto, as shown in Fig. 2, it is necessary not only that the ends of the rocker arms pivot about these abutment points, but that the ends of the rocker arms slide somewhat relative to these ends. This sliding movement, of course, in the arrangement shown is automatically taken care of, whereas, if pivots were used, the system would lock and it would be necessary, therefore, to use some type of complicated slotted arrangement in order to prevent locking of the linkage system.

In operation, a tightly rolled shade to be trimmed is held in one hand and the device of the present invention in the other hand. With the two slides **48** pulled apart, the end of the roller shade is inserted between the V-blocks **52** to approximately the position desired. The two V-blocks are then lightly gripped in one hand and squeezed toward each other about the shade **54** to center the shade relative to the discs **10** and **12**. The shade **54** is then moved axially slightly until it is in the desired final position relative to the razor blade **44**. With the shade in this position, the V-blocks are tightly squeezed together to prevent further relative movement between the trimming device and the shade, while with the other hand, the latch **36** is released from the edge of the disc **10** so that the springs **40** will urge the slide **28** toward the center of the disc and bring the edge of the razor blade **44** against the roller shade to be trimmed. With the razor blade thus resiliently urged against the roller shade, the crank **22** is swung around to revolve the disc **10** and razor blade **44** carried thereby relative to the disc **12** and the roller shade carried by this latter disc, and as the razor blade **44** revolves around the roller shade and is resiliently urged thereagainst by the springs **40**, the blade will cut through the roller shade.

After the cut through the shade has been completed, the blade **44** will continue to cut slightly into the wooden arbor upon which the shade is wound. This can immediately be detected through the increased resistance to rotation of the disc **10**. This is brought about by the fact that the razor blade does not bind as it cuts through the roller shade material, but does bind as soon as it cuts slightly into the wood of the arbor. At this point the rotation of the disc **10** is stopped and the knob **32** seized to pull the slide **28** outwardly to its retracted position where it is secured by means of the latch **36**. The grip upon the V-blocks **52** is then released and the

shade slid endwise from the shade trimming device.

It will be seen that the device above described accomplishes the objectives of the present invention and that this device need not be secured to a bench or table, but may be carried in a toolbox or may be kept in a drawer and that the operation of bringing it from the box or drawer and putting it to use to accomplish its purpose is an operation which can be accomplished in a very short time without the necessity for first securing the device to a table or bench and without the necessity of adjusting various members in order to center the shade to be trimmed relative to the cutting head.

Having described my invention, what I claim as new and useful and desire to secure by Letters Patent of the United States is:

1. In a roller shade trimmer, a pair of roller shade gripping members, a cutting head mounted to rotate relative to said members, said gripping members adapted for movement inwardly and outwardly toward and away from the center of rotation of said cutting head, linkage means connected between said gripping members to cause inward or outward movement of one of said gripping members to produce similar movement of the other of said gripping members, said linkage means including a pivoted member, means actuated by inward movement of one of said gripping members for rocking said pivoted member in one direction, and means actuated by the movement of said pivoted member in one direction to produce inward movement of the other of said gripping members, and resilient means to urge said cutting head toward its center of rotation.

2. In a device of the class described, a pair of roller shade gripping members, a cutting head mounted to rotate relative to said members, slide means to permit inward and outward movement of said cutting head, said gripping members adapted for movement inwardly and outwardly toward and away from the center of rotation of said cutting head, linkage means connected between said gripping members to cause inward or outward movement of one of said gripping members to produce similar movement of the other of said gripping members, said linkage means including a pivoted member, means actuated by inward movement of one of said gripping members for rocking said pivoted member in one direction, and means actuated by the movement of said pivoted member in one direction to produce inward movement of the other of said gripping members, and resilient means to urge said cutting head along the slide means and toward its center of rotation.

3. A roll trimming device comprising, a pair of slidable roll gripping members adapted to be held in the hand of an operator and squeezed together against a roll to be trimmed, said gripping members constituting a handle by which the device is held, means to cause inward or outward movement of one of said members to produce similar movement of the other of said members, a slidable cutting head and means by which said cutting head can be rotated relative to said gripping members.

4. A roll trimming device comprising a pair of roll gripping members adapted to be held in the hand of an operator and squeezed together against a roll to be trimmed, said gripping members constituting a handle by which the device is held, a cutting head mounted to rotate relative to said members, cutting means on said cutting head adapted to be moved inwardly into roll cutting position and resilient means to urge said cutting head toward its center of rotation.

5. In a device for trimming roller shades, a handle by means of which the device can be held in the hand of an operator, said handle being adapted to embrace a roll to be trimmed in a position substantially co-axial with the handle, a cutting head rotatable relative to said handle, means to support a roll in cutting relation with respect to said cutting head, means to rotate said cutting head around said roll, and resilient means to urge said cutting head toward its center of rotation.

6. A roll trimming device adapted to be held together with a roll to be trimmed in the hand of an operator, said device comprising a handle by means of which the device may be held and supported, means for gripping a roll to be trimmed and for maintaining said roll substantially stationary and in a position co-axial with respect to said handle, a cutting head mounted for rotational movement around an axis aligned with said roll and for generally inward and outward movement relative to its axis of rotation, whereby said cutting head can be rotated around said roll and can be slid into contact with said roll.

EDWARD KEARNEY.