Sept. 5, 1933. A. WEISS 1,925,125

WINDOW SHADE CUTTER

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Fig. 1.

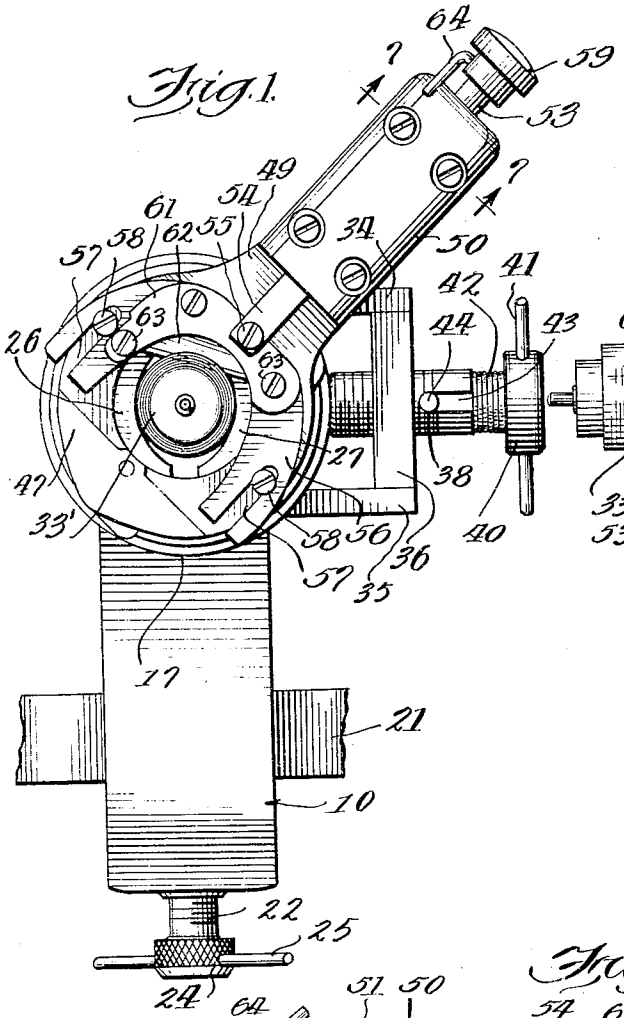


Fig. 2.

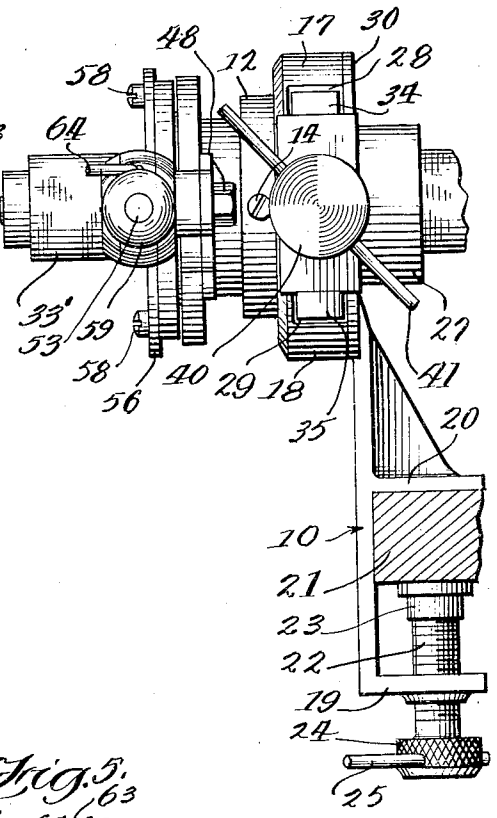
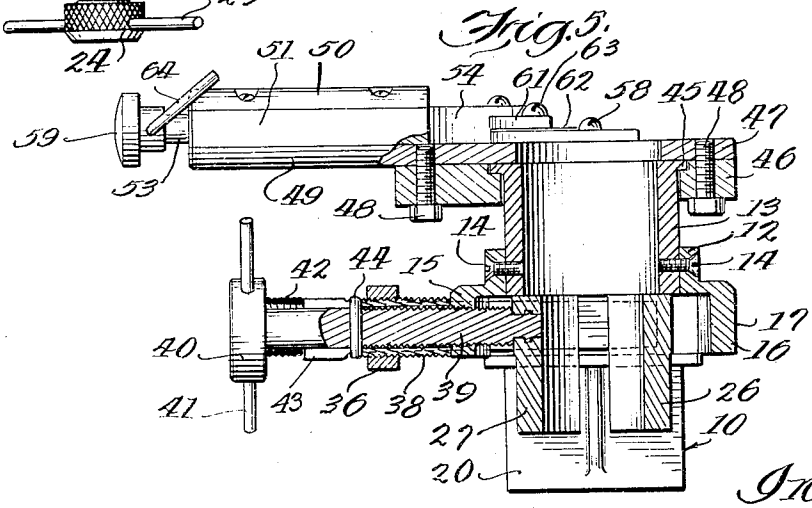


Fig. 5.



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Fig. 3.

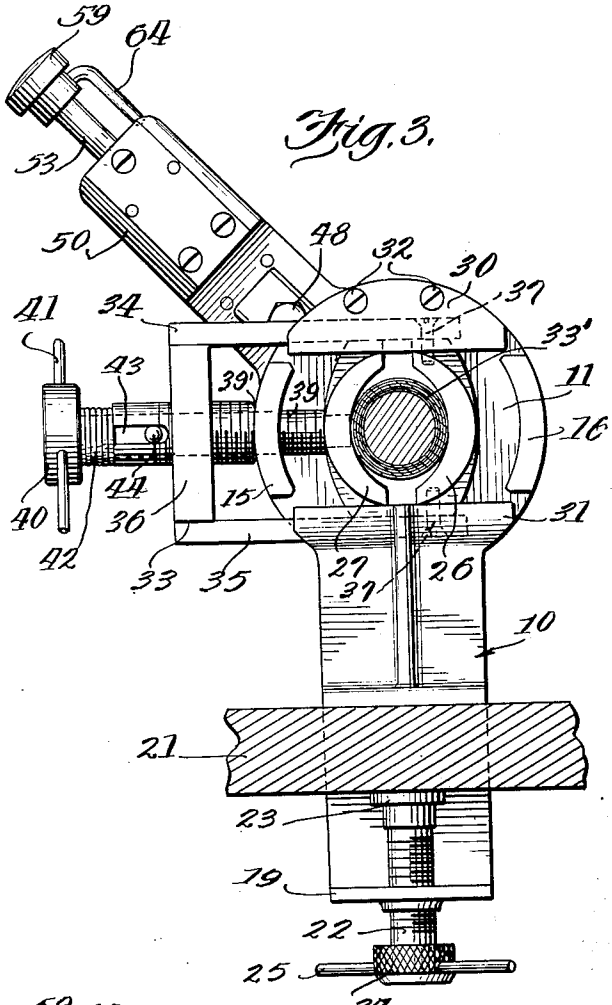


Fig. 6.

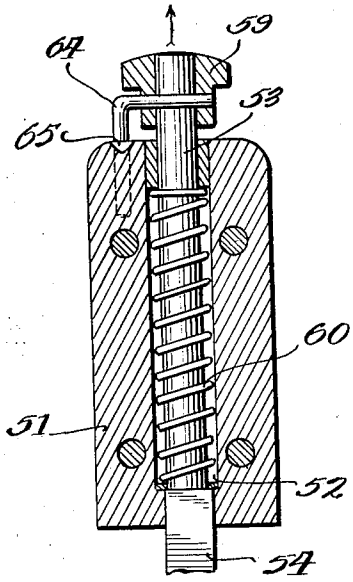


Fig. 7.

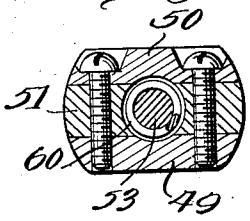
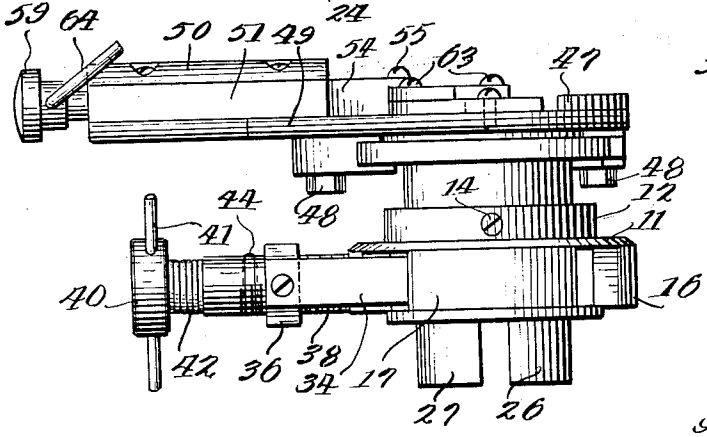


Fig. 4.



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WINDOW SHADE CUTTER

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10 Claims. (Cl. 164—60)

This invention relates generally to a cutter, and more particularly to a cutter of the type adapted for use for cutting or trimming window shades, or the like, to the required width; and it has particular reference to that class of devices in which the trimming is accomplished by means of a rotatably mounted knife or cutting blade after the curtain or shade has been wound upon its roller.

An object of this invention is to provide a device of the character described having means associated therewith for clamping and holding in operative position a rolled up window shade, or other material, in the exact center within the holding means, this being the case regardless of the variations in the size of diameter of the shade or material being cut.

Another object of this invention is to provide in a device of the character described a novel and improved holding and centering means, whereby the material to be cut or trimmed may be readily clamped and centered in place in the device in such a position as to have the rolled up material disposed in the exact center of the circle within which the cutting element rotates, so that a uniform cut will be made by the cutting element in its rotation about the material.

A further object of this invention is to provide a device of the character described having clamping means for securely holding the rolled up material in place to be acted upon by a rotatably mounted knife or cutting blade, the latter being detachably held in place in a rotatable unit and being spring pressed against the rolled up material so as to automatically feed itself towards the center of the said rolled up material.

A still further object of this invention is to provide a device of the character described having a supporting sleeve, at the forward end of which is mounted a rotatable ring provided with a socketed handle, upon which is mounted for sliding movement a detachable blade, said handle having means associated therewith for forcing said blade in an inward direction towards the center of the sleeve and stop means associated with said handle for retaining said blade at the outward limit of its movement.

A still further object of this invention is to provide a device of the character described having a supporting sleeve, adjacent one end of which is mounted a pair of clamping jaws, by means of which the rolled up material to be trimmed may be securely held in the exact center of said supporting sleeve, the other end of said sleeve having rotatably mounted thereon a ring provided with a socketed handle, upon which is detachably secured a cutting blade, which is adapted for sliding movement relative to said handle, means for forcing said cutting blade in an inward direction towards the center of said supporting sleeve, and a stop means associated with said handle for retaining said cutting blade at the outward limit of its movement, in which position it will be held in a non-operative arrangement with respect to the material held within the supporting sleeve.

A still further object of this invention is to provide in a device of the character described a novel and improved clamping and self centering means, whereby the rolled up material to be acted upon may be readily and conveniently clamped in place in the device and accurately centered therein regardless of the size of the diameter of the rolled up material, said clamping means comprising a pair of jaws movable towards and away from each other and a single mechanism for actuating both of said jaws, whereby the said jaws may be caused to move simultaneously a uniform distance towards or away from each other upon the actuation of said single mechanism.

A still further object of this invention is to provide a device of the character described, which will be simple in construction, assembly and operation, which will be rigid and durable in operation, compact and neat in appearance and which will be highly efficient for carrying out the purposes for which it is designed.

With the foregoing and other objects in view, which will appear as the description proceeds, the invention consists in certain novel and improved features of construction, arrangement and combination of parts hereinafter more fully described, illustrated in the accompanying drawings, and particularly pointed out in the appended claims, it being understood that various changes in the form and minor details of construction may be made without departing from the spirit or sacrificing any of the advantages of the invention.

For the purpose of facilitating an understanding of my invention, I have illustrated in the accompanying drawings a preferred embodiment thereof, from an inspection of which, when considered in connection with the following description, my invention, its mode of construction, assembly and operation and many of its advantages should be readily understood and appreciated.

Referring to the drawings, in which similar characters of reference are employed to indicate

corresponding or similar parts throughout the several figures of the drawings:—

Figure 1 is a front elevational view of my improved device with the cutting blade thereof shown in operative position;

Figure 2 is a side elevational view of the same showing a rolled up window shade disposed therein;

Figure 3 is a rear elevational view of the same with the parts shown in the same position as in Figure 1;

Figure 4 is a top plan view of the same with the shade removed therefrom;

Figure 5 is a horizontal sectional view through the device;

Figure 6 is a longitudinal sectional view through the socketed handle; and

Figure 7 is a transverse sectional view through the handle taken on line 7—7 of Figure 1.

Referring to the drawings more specifically by characters of reference, the numeral 10 designates generally a bracket, upon the upper end of which is provided the circular plate portion 11, on the rear face of which is formed an annular rearwardly extending flange 12, which fits over one end of an open supporting sleeve 13, to which the said flange is rigidly secured by means of the screws 14, or in any other suitable and well known manner. The plate portion 11 is of larger diameter than the supporting sleeve 13 and is provided on the forward face thereof adjacent the periphery thereof with the spaced forwardly extending arcuate portions 15, 16, 17 and 18, said portions being formed preferably integral with said plate.

Adjacent the lower end of the bracket 10, is provided a pair of longitudinally spaced inwardly extending plate portions 19 and 20, between which is adapted to be clamped the support 21 to which the device may be secured, which support may be the top of a table, any suitable ledge, or the like. A screw 22 is threaded through the lower plate 19, said screw having provided on its upper end a cap 23 or the like and on its lower end is provided a head 24, through which extends a pin 25, by means of which the said screw may be readily rotated in the desired direction after securely attaching the device to any suitable supporting member.

As shown in the drawings, particularly in Figure 5, the inner face of the plate member 11 is mounted flush with the outer edge of the supporting sleeve 13, said plate being adapted for receiving thereon a pair of movable clutch jaws 26 and 27, the purpose of which is to be presently more fully described. The upper and lower ends of said clutch jaws are adapted to ride in the upper and lower guideways 28 and 29 provided therefor on the plate 11, said guideways being formed by the plate members 30 and 31 secured to the arcuate portions 17 and 18 respectively. In the drawings illustrated the plate member 30 is detachably secured in place to the arcuate portion 17 by means of the screws 32, whereas the plate member 31 is shown as formed integral with its adjacent arcuate portion 18. The space formed between the depending portion of the plate member 30 and the inner face of the plate member 11 forms the guideway 28, the purpose of which is to be presently more fully described, and the space between the upstanding portion of the plate member 31 and the inner face of the plate member 11 at the lower end thereof forms the guideway 29, as illustrated more fully in Figure 2 of the drawings.

In order to actuate the clutch jaws 26 and 27 so that the same may be moved in unison, I have provided the following novel and improved mechanism which may be described as follows:—

Mounted for sliding movement in the guideways 28 and 29 is a U shaped bracket generally designated by the reference character 33, said bracket having the horizontally disposed arms 34 and 35 joined at their forward end by the vertically disposed arm 36. The forward ends of said horizontally disposed arms 34 and 35 are adapted to be received in the guideways 28 and 29 respectively for sliding movement therein. To the free ends of the arms 34 and 35 is rigidly secured in any suitable manner, such for example as by the screws 37, the clutch jaw 26, whereby any sliding movement imparted to the bracket 33 will cause a corresponding movement of said jaw 26. Extending through a central opening provided in the vertical arm 36 is a sleeve 38, the outer surface of which is threaded throughout the major portion thereof, which threaded portion is in screw threaded engagement with the central opening provided in the arm 36. The free end of said threaded sleeve is adapted to bear at all times against the arcuate portion 15, as shown at 39', in Figure 3 of the drawings, whereby the rotation of said threaded sleeve 38 in a right hand direction as viewed in Figure 3 will cause a movement to the left of the bracket 33, and the rotation of said sleeve in a left hand direction as viewed in Figure 3 will cause a movement to the right of said bracket 33, and since the jaw 26 is rigidly secured to said bracket the same will move with the bracket upon the actuation of the sleeve 38.

Extending through the sleeve 38 is a member in the form of a bolt, which is designated by the numeral 39, said member 39 being threaded on the outer surface thereof, which threads are in engagement with a threaded opening provided in the arcuate portion 15, the free end of said member 39 being secured to the clutch jaw 27 in such a manner as to permit the rotation of the same without becoming disengaged from said clutch jaw. One end of said member 39 extends beyond the outer end of the sleeve 38 and is provided with a head 40, through which extends the pin 41 by means of which the said member 39 may be conveniently and readily rotated. A spiral spring 42 is disposed between the head 40 and the free end of the sleeve 38. A pair of diametrically opposed slots 43 are provided adjacent the free end of the sleeve 38, said slots receiving therein the free ends of a pin 44, extending through the member 39. By reason of the provision of the pin 44, it will be obvious that the rotation of the member 39 will impart a similar rotation in the same direction to the sleeve 38, the said sleeve 38 traveling longitudinally of the member 39, said longitudinal movement being permitted by the elongated slots 43.

It will thus be noted that upon the rotation of the head 40 in a clockwise direction as viewed in Figure 3, the member 39 will cause the jaw 27 to move inwardly towards the center of the supporting sleeve 13, while at the same time the rotation of the sleeve 38 will cause a movement inwardly towards the center of the supporting sleeve of the jaw 26, whereby the said jaws may be brought together to the desired point to clamp therebetween the rolled up shade 33', said shade being disposed at all times in the exact center

of the supporting sleeve, this being the case regardless of the size of the diameter of the rolled up shade.

Similarly the movement in a counter clockwise direction of the head 40 will cause a separation of the jaws 26 and 27, whereby the shade 33 may be readily removed from the device.

The free end of the supporting sleeve 13 is provided with an annular shoulder 45, said shoulder being clamped between a pair of ring members 46 and 47, said members being rigidly secured to each other by means of the bolts 48, or in some other suitable and well known manner, the said ring 46 being provided adjacent the outer edge thereof with an annular groove for receiving said shoulder 45, the remaining portion of the inner wall of said ring 46 being adapted to ride on the outer surface of the supporting sleeve 13, whereby the said ring members 46 and 47 are revoluble on said supporting sleeve 13. The ring member 47 is formed integral with a portion 49, which forms with a plate member 50 a socketed handle upon which may be mounted in the arrangement to be presently described the cutting blade for cutting and trimming the shade 33', or similar rolled up material. As shown more clearly in Figure 1, the handle for actuating the cutting element comprises the plate members 49 and 50, which are held in spaced relation to each other by means of the filler blocks 51, to provide in said handle the longitudinal socket 52, within which is disposed the plunger 53. The lower end of said plunger 53 is provided with the flattened portion 54, said lower end being secured in any suitable manner, such for example as by means of the screw 55 to a substantially U shaped yoke 56. Adjacent the free ends of the arms of said yoke 56 are provided the elongated slots 57, through which slots extend the screws 58, which screws are secured to the face of the ring member 47, said screws 58 and slots 57 cooperating with each other for guiding said yoke in its up and down movement.

The upper end of the plunger 53 is adapted to extend above the upper end of the handle, the free end of said plunger having a cap 59 provided thereon. The socket 52 is closed at both ends as shown more clearly in Figure 6 of the drawings, and has confined therein the spiral spring 60, which surrounds said plunger 53 and which is adapted for normally forcing said plunger with its associated parts towards the center of the supporting sleeve and against the rolled up material that may be supported within said sleeve.

The yoke 56 has detachably secured thereto a member 61, between which member and the yoke may be detachably secured in operative position a suitable cutting blade 62. As illustrated more clearly in Figure 1 of the drawings the said blade 62 is securely held in operative position between the members 61 and 56 by means of the screws 63, which screws extend through said members. The arrangement of this construction is such as to permit the use of a discarded or new razor blade of any standard construction as the cutting element of my improved device. By merely loosening the screw 63 the said blade may be readily removed and another blade inserted in its place. A novel and improved means is also provided for holding the plunger 53 with its associated parts in an inoperative position, in which position the blade will be moved outwardly to a point where it will not interfere with the positioning and clamping of the rolled up shade in the device.

In my improved embodiment I have provided a substantially right angled pin 64, the horizontal portion of said pin, as shown more clearly in Figure 6, extending through the cap 59 and plunger 53, said horizontal portion being adapted for pivotal movement. By means of the cap 59 the plunger 53 may be drawn in an outward direction against the tension of the spring 60 until the lower end of the vertical portion of the pin 64 may be moved into the depression or notch 65 provided therefor in the upper edge of the handle.

When in that position the cutting blade will be moved to an inoperative position, in which position it will be held by the stop pin 64 until the latter is released, at which time the said blade will be fed automatically towards the center of the supporting sleeve by the action of the spring 60.

The operation of my device will be readily understood from the foregoing description, taken in connection with the drawings hereto annexed. The shade, or other similar material having been wound upon a roller, the end of which is to be trimmed is passed through the supporting sleeve 13, the cutter blade having been previously withdrawn to the position shown in Figure 3. The handle 40 is then actuated in the proper direction to rigidly clamp the shade between the clutch jaws 26 and 27, this clamping arrangement being also effective in accurately centering the shade in the supporting sleeve. The cutter is then released by exerting a pressure outwardly on the cap 59 and then pushing the stop pin 64 sideways, whereby the spring 60 will be effective in forcing in the cutter in an inward direction. The rotation of the handle upon the sleeve 13 will now cause a uniform cutting of the rolled up material by the blade 62. The end of the shade which projects beyond the cutting blade will thus be smoothly and evenly trimmed off, the knife being gradually fed by the spring 60 until the operation has been completed.

It will thus be readily apparent that I have provided a device for cutting or trimming window shades, or any other rolled up material, wherein the material to be cut or trimmed is fixedly held in the exact center of a supporting sleeve, while the cutter is made to rotate about the same with the result that the shade will be smoothly and evenly trimmed off. By reason of the spring pressed arrangement of the cutting blade, the same will be gradually and automatically fed by the spring towards the center of the supporting sleeve as the handle supporting the same is rotated on said sleeve.

It will also be noted that the construction devised makes for economical production, particularly in view of the fact that the cutting blade employed in the device may be a discarded safety razor blade of standard and well known construction, said blade being readily removable, thereby making it convenient to replace the same whenever found necessary or desirable. Obviously any other type of cutting blade, or even a specially built blade may be employed with the device. I have found, however, that very satisfactory results may be had by the use of discarded safety razor blades.

It will further be noted that by holding the rolled up shade in a fixed position in the supporting sleeve the mechanism required for supporting the same is a great deal more simplified than that which would be necessary were the shade to rotate and the cutter held in a stationary

position. Attention is also directed to the simplified construction of the clutch jaws, which construction is so arranged as to permit by the actuation of a single operating knob to not only rigidly secure the rolled up shade in place in the supporting sleeve, but also to accurately center the same in said sleeve so that the rotation of the cutter will result in a uniform cut around said shade.

It is believed that my invention, its mode of construction and assembly and many of its advantages should be readily understood from the foregoing without further description, and should also be manifest that while a preferred embodiment of the invention has been shown and described for illustrative purposes, the structural details are, nevertheless, capable of wide variation within the purview of my invention as defined in the appended claims.

What I claim and desire to secure by Letters Patent of the United States is:—

1. In a device of the character described, the combination of a supporting sleeve, a ring revoluble thereon and having a radially extending handle, a socket extending longitudinally through said handle, a spring pressed stem mounted slidingly within said socket, and means provided at the lower end of said stem for detachably holding in operative position a safety razor blade, which razor blade forms the cutting blade for the device, said cutting blade being adapted for movement inwardly towards the center of said supporting sleeve and across the open end of the same, and being disposed entirely outside of said socket.

2. In a device of the character described, the combination of a supporting sleeve, a ring rotatable thereon and having a radially extending handle provided with a socket extending longitudinally therethrough, a spring pressed stem mounted slidingly within said socket, a safety razor blade secured detachably at the lower end of said stem to form the cutting element, said cutting blade being disposed when in operative position entirely outside of said socket and being adapted for movement inwardly towards the center of said supporting sleeve and across the open end thereof, and means for securely holding the shade while the same is being trimmed, said last mentioned means being effective for accurately centering the said shade within the supporting sleeve.

3. In a device of the character described, the combination of a bracket having means associated therewith whereby the same may be detachably secured to a suitable support, clamping jaws adapted to engage the material to be operated upon carried by said bracket, a supporting sleeve for said material also carried by said bracket, means associated with said clamping jaws for accurately centering said material within said supporting sleeve, a revoluble cutter employing a safety razor blade carried by said supporting sleeve and a pair of co-operating clamping members between which said razor blade may be detachably secured, said cutter being adapted for gradual movement inwardly towards the center of said supporting sleeve and across the open end thereof.

4. In a device of the character described, the combination of a supporting sleeve, a ring mounted revolubly on said sleeve and having a socketed handle, a plunger mounted slidingly in the socket of the handle and having a yoke secured to the lower end thereof, said yoke being adapted for radial movement across the face of said ring, a cutter including a safety razor blade detachably secured to said yoke for movement therewith, said cutter extending across the open end of said supporting sleeve, and means for forcing the said plunger and cutter in an inward direction towards the center of said supporting sleeve.

5. In a device of the class described, the combination of a bracket having means provided thereon for detachable engagement with a suitable support, a supporting sleeve carried by said bracket, a pair of slidable cooperating jaws mounted in said bracket and adapted for engaging the material to be operated upon, means for actuating said jaws whereby the same will securely clamp the material within said supporting sleeve, said means being effective for accurately centering said material within said sleeve, a revoluble ring having a socketed handle, and cutting means including a detachably secured safety razor blade associated with said handle, said safety razor blade being disposed between a pair of clamping members having means associated therewith for rigidly securing the blade therebetween.

6. In a device of the character described, the combination of a supporting sleeve, means associated with said sleeve for securely holding therein in the exact center thereof the rolled up material to be trimmed, a revoluble cutter employing a safety razor blade carried by said sleeve adapted for cutting uniformly into the said rolled up material as the said cutter is rotated about the sleeve, and a pair of co-operating clamping members between which said safety razor blade is adapted to be detachably secured in operative position.

7. In a device of the character described, the combination of a supporting sleeve, means associated with said supporting sleeve for securely holding therein in the exact center thereof the rolled up material to be trimmed, a revoluble cutter including a detachably secured safety razor blade mounted on said sleeve, a pair of co-operating clamping members between which said safety razor blade may be detachably secured in operative position, means for rotating said cutter, and means for automatically feeding said cutter towards the center of the sleeve and across the open end of said sleeve.

8. In a device of the character described, the combination of a supporting sleeve, means associated therewith for securely holding therein in the exact center thereof the material to be trimmed, a revoluble ring mounted on said sleeve for rotation thereon, a handle for rotating said ring, a safety razor blade disposed adjacent the outer face of said ring and being adapted for radial movement thereon, a pair of clamping members between which the body of the blade may be detachably secured in operative position, spring means for forcing the said cutting blade in an inward direction towards the center of said sleeve, and releasable means for limiting the inward movement of said blade.

9. In a device of the character described, the combination of a supporting sleeve, means associated therewith for securely locking therein in substantially the exact center thereof the rolled up material to be trimmed, a revoluble ring having a radial extension mounted on said sleeve, a stem slidably mounted on said radial extension, a safety razor blade secured by means of a pair of co-operating clamping members to the lower end of said stem, said cutting blade being disposed for movement towards the center of said

ring, guide means for guiding said blade in its movement towards and away from the center of the ring, spring means surrounding said stem for normally urging the same inwardly, and releasable means for retaining said cutting blade at the outward limit of its movement against the action of said spring.

10. In a device of the character described, the combination of a supporting sleeve, a ring revoluble thereon and having a radially extending handle, a socket extending longitudinally through said handle, a spring pressed stem mounted slidingly within said socket, the lower end of said stem extending beyond the lower free end of said socket, means associated with said lower end of said stem comprising a pair of co-operating clamping members for detachably securing in operative position a safety razor blade, the cutting edge of which is disposed adjacent the outer face of said ring, said blade being adapted for movement inwardly towards the center of said supporting sleeve and across the open end of the same.

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