March 27, 1951 J. J. FINE 2,546,435

STRAP CUTTING MEANS FOR VENETIAN BLINDS

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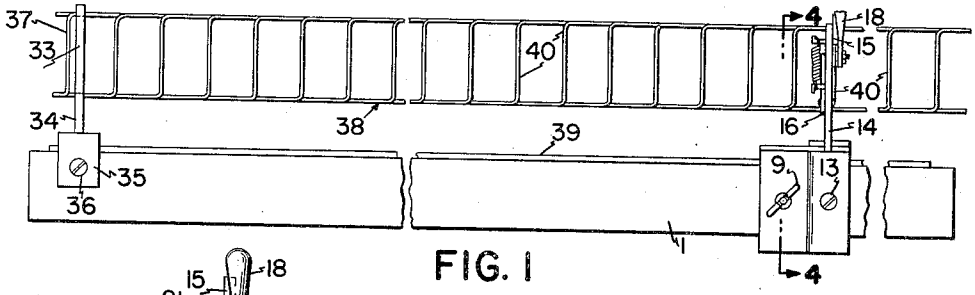



FIG. 1

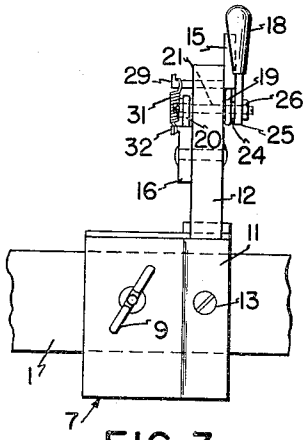



FIG. 3

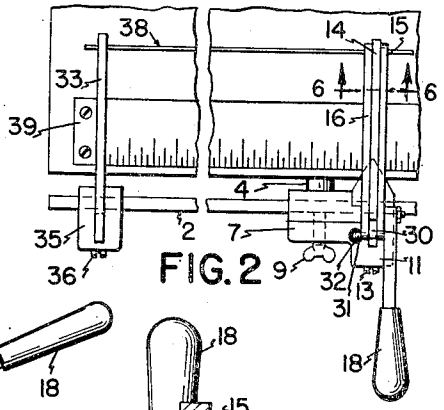



FIG. 2

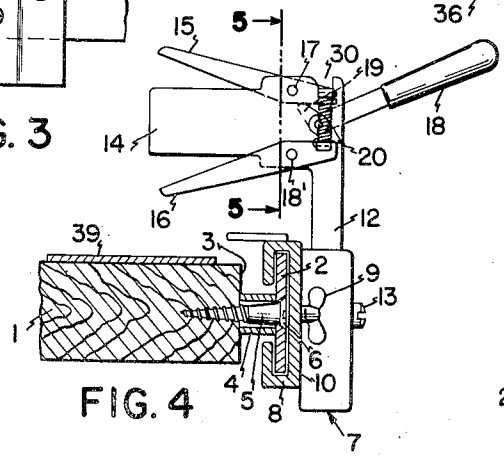



FIG. 4

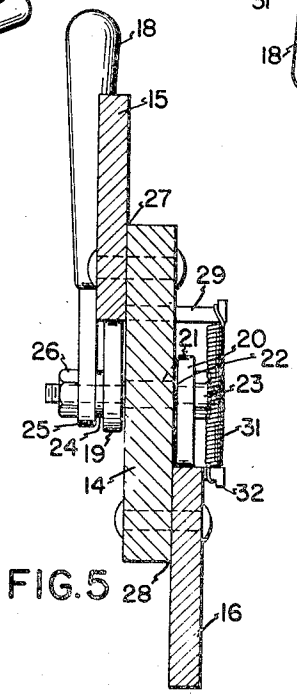



FIG. 5

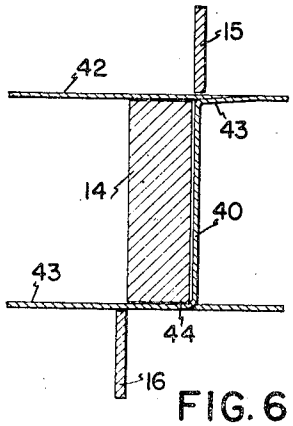



FIG. 6

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## STRAP CUTTING MEANS FOR VENETIAN BLINDS

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4 Claims. (Cl. 164—41)

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The present invention relates to a device for measuring and cutting to correct measurements tapes or straps commonly used in the manufacture of Venetian blinds. These tapes or straps take the general appearance of ladders when they are opened up in a Venetian blind and comprise two parallel woven fabric strips joined at regular intervals by cross strips corresponding to the steps of a ladder which are usually woven into the side elements. The strap comes completely formed, usually in rolls in which the long continuous members forming the side strips overlay one another in contact with the cross-strips in a flat position between the long side strips. It is readily evident that in this arrangement, in order for the cross strips to lie flat between the overlaying long strips, the joining sections to the long strips are offset along the long strips. The form taken is similar to that of a rectangular box which has been collapsed by bringing opposite parallel sides together, with the exception that cross strips are woven to the long strips always in the same direction. Due to this form in which the tape comes, it is not possible merely to take a pair of scissors and cut across the tape, since in that case the two sides will not be severed in corresponding places, but one will be cut short and the other will be cut long. In fact, if the tapes are cut when together, it will usually be true that a cross tape will be severed in the cutting.

It is therefore the practice when cutting tapes to the desired length to separate the tapes from each other and cut each side tape individually or at least after moving the cross tape out of the way. Objection to this method of cutting is that particular care must be taken to cut the tapes to the desired lengths since this determines the length of the Venetian blind. Due to the confusion in getting the crosstape out of the way of the shears and due also to the fact that one tape must be cut in one place and the other in another place if they are lying together, and further because the operator must keep in mind the number of cross strips which must go into each length, it frequently happens that lengths are incorrectly cut and wastage occurs. If the lengths are cut longer, as for instance one cross strip longer, then they may be recut again, but if they are cut shorter, the whole tape length is wasted.

The present device aims to overcome these difficulties and provide a means whereby the strip length is cut uniformly and correctly, automatically and without any particular thought on the part of the operator.

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The present invention also enables the strips or tapes to be measured off and cut more quickly, saving the operator considerable time and saving expense in manufacture and assembly.

The device of the present invention is simple and easily operated.

The invention will be more fully described in the specification below when taken in connection with the drawings illustrating an embodiment of the invention, in which:

Figure 1 shows the invention in elevation;

Figure 2 shows a plan view of the device of Figure 1;

Figure 3 shows an enlarged view of the right end of the device shown in Figure 1;

Figure 4 shows a section taken on the line 4—4 of Figure 1;

Figure 5 shows an enlarged view on the section 5—5 of Figure 4; and

Figure 6 shows an enlarged detail somewhat along the lines 6—6 of Figure 2.

In the arrangement shown in the figures, 1 indicates the front end of a bench or table, to which the present invention may be applied. A rail 2 is fastened parallel to the front face 3 of the table by means of spacer rings or cylinders 4 and some retaining means, as for instance screw bolts 5 with countersunk heads which pass through perforations in the rails 2 so that the heads 6 will be flush with the surface of the rails 2. This rail supports a carriage 7 which has a C-shaped section 8 engaging the rail so that the carriage may be slid along the rail to any position. The carriage 7 is slid in the desired place on the rail and may be locked at that position by means of the wing nut 9 which passes through the wall 10 of the carriage and screws against the rail 2 clamping or locking the carriage in its desired position. The carriage 7 is provided at the right side, as viewed in Figure 3, with a cylindrical collar 11 supporting a post 12 which may be adjusted vertically up and down in the collar and locked in position by means of the set screw 13. The post 12 carries at its upper end a plate 14 which extends in a direction perpendicular to the direction of the rail 2. If the post 12 is circular, then the plate 14 may of course be directed and locked by the set screw 13 in the desired direction. The plate 14 is provided with two shearing knives—one, 15, at the top and the other, 16, at the bottom. These knives are each pivoted in the plate toward the back of it by pivoting pins 17 and 18' respectively. It is preferable to have one knife blade on each side of the plate.

In Figure 4 the blade 15 is shown on the for-

ward side of the plate as viewed in the figure, while the blade 16 is shown on the rear side of the plate. These knife blades are operated simultaneously by the hand lever 18. This hand lever actuates a pair of cams (see Figure 5), cam 19 being on the forward side of the plate as viewed in Figure 4 and cam 20, on the rear side of the plate. The cams 19 and 20 are mounted on a supporting shaft 21 which extends through the plate 14 and holds rigidly both cams tightly on the same shaft. This may be accomplished by forming a shoulder on the shaft as indicated at 22 and holding the cam 20 to the shaft by means of a nut 23 threading on to the end of the shaft. The cam 19 also sets against a collar and is held in place by means of a washer 24, the nut 25 of the lever arm 18 through which the shaft passes and nut 26 threading on the end of the shaft 21. The cams 19 and 20 work against the inner edges of blades 15 and 16 so that upon the down movement of the handle 18 the blades are moved together over the edges of the plate 14 against the cutting edges 27 and 28. The blade 15 is provided with an extending arm 29 which works in a slot 30 cut in from the top edge of the plate 14, to which blade the helical spring 31 is attached at one of its ends while the other end is attached to an arm 32 extending from the side of the blade 16. In this manner the blades 15 and 16 always tend to be held in the open position except when operated by the lever handle 18.

Referring particularly to Figures 1 and 2, it will be noted that at the left end of the rail 2, there is a plate 33 similar to the plate 14. This plate extends from a post 34 at the bottom of which is a U-shaped clamp 35 which is placed over the top edge of the rail or bar 2 and is clamped in position by means of the set screw 36. The tape 38 has a cross strip or rung 37 on the outside of the plate 33. This tape extends in the direction of the measuring device parallel with the scale 39 from the left end of the device to the right supporting end or plate 14. A cross strip or ladder 40 is in a position to the right of the plate 14 as indicated in Figure 1.

When it is desired to cut strips to the desired length, the arm at the right is locked in position by means of the wing nut 9 in accordance with the desired length of scale and the exact position at which the cutting is to take place. This is always made such that the cross rungs of the strip are on the outer sides of the plates 14 and 33 respectively and bear against the surface of the plates. An enlarged detail of one end of this is shown in Figure 6. It will be seen that the cross rung 40 extending from the upper tape 43 is attached to each side strip in opposite directions, i. e., the tape 40 is woven to the side piece 42 in an element 43 extending to the right in the top strip and by an element 44 extending to the left in the bottom strip. The knife blades 15 and 16 are so adjusted that the cross strip 40 is left completely in place and not severed when the two side strips are severed. In using the device, the operator puts the end cross rung over the plate 33 and extends the tape to the plate 14 putting a cross rung at the outside of this plate, the length between the two plates being the desired cutting length of the strip. This strip is then cut and as many other strips of the same length as is desired. The cutting lengths will in this way be uniform and for the same number of cross rungs.

I claim:

1. Means for cutting Venetian blind straps to the desired lengths, comprising a pair of plates having width dimensions approximately the length of the cross strips between the side straps of the Venetian blinds, means for spacing said plates apart a measured distance in substantially parallel relation to each other, whereby the cross strips may lie on the outer faces of the plates at either end of the measured distance, shearing means cooperating with one of said plates including shearing elements operative on the top and bottom edges of said last mentioned plate at different sides thereof.

2. Means for cutting Venetian blind straps to the desired lengths, comprising a pair of plates having width dimensions approximately the length of the cross strips between the side straps of the Venetian blinds, means for spacing said plates apart a measured distance in substantially parallel relation to each other, whereby the cross strips may lie on the outer faces of the plates at either end of the measured distance, shearing means cooperating with one of said plates including shearing elements operative on the top and bottom edges of said last mentioned plate at different sides thereof, and a pivoted cam having an operating lever, the cam engaging said shearing elements to bring them against the edges of the plate to sever both straps simultaneously.

3. Means for cutting Venetian blind straps to the desired lengths, comprising a pair of plates having width dimensions approximately the length of the cross strips between the side straps of the Venetian blinds, means for spacing said plates apart a measured distance in substantially parallel relation to each other, whereby the cross strips may lie on the outer faces of the plates at either end of the measured distance, shearing means cooperating with one of said plates including shearing elements operative on the top and bottom edges of said last mentioned plate at different sides thereof, spring means to tension the shearing elements in an open position and cam means to move the shearing elements for simultaneously severing both straps.

4. Means for cutting Venetian blind straps to the desired lengths, comprising a pair of plates having width dimensions approximately the length of the cross strips between the side straps of the Venetian blinds, means for spacing said plates apart a measured distance in substantially parallel relation to each other, whereby the cross strips may lie on the outer faces of the plates at either end of the measured distance, shearing means cooperating with one of said plates including shearing elements operative on the top and bottom edges of said last mentioned plate at different sides thereof, and a helical spring having its end attached one to each shearing element to tension the same in open position, and cam means to move the shearing elements for simultaneously severing both straps.

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REFERENCES CITED

The following references are of record in the file of this patent:

UNITED STATES PATENTS

| Number | Name | Date |
|---|---|---|
| 284,968 | Lindsey | Sept. 11, 1883 |
| 743,650 | Mancha | Nov. 10, 1903 |
| 842,556 | Jones | Jan. 29, 1907 |
| 1,090,297 | Greenwell | Mar. 17, 1914 |
| 1,715,898 | Carri | June 4, 1929 |