

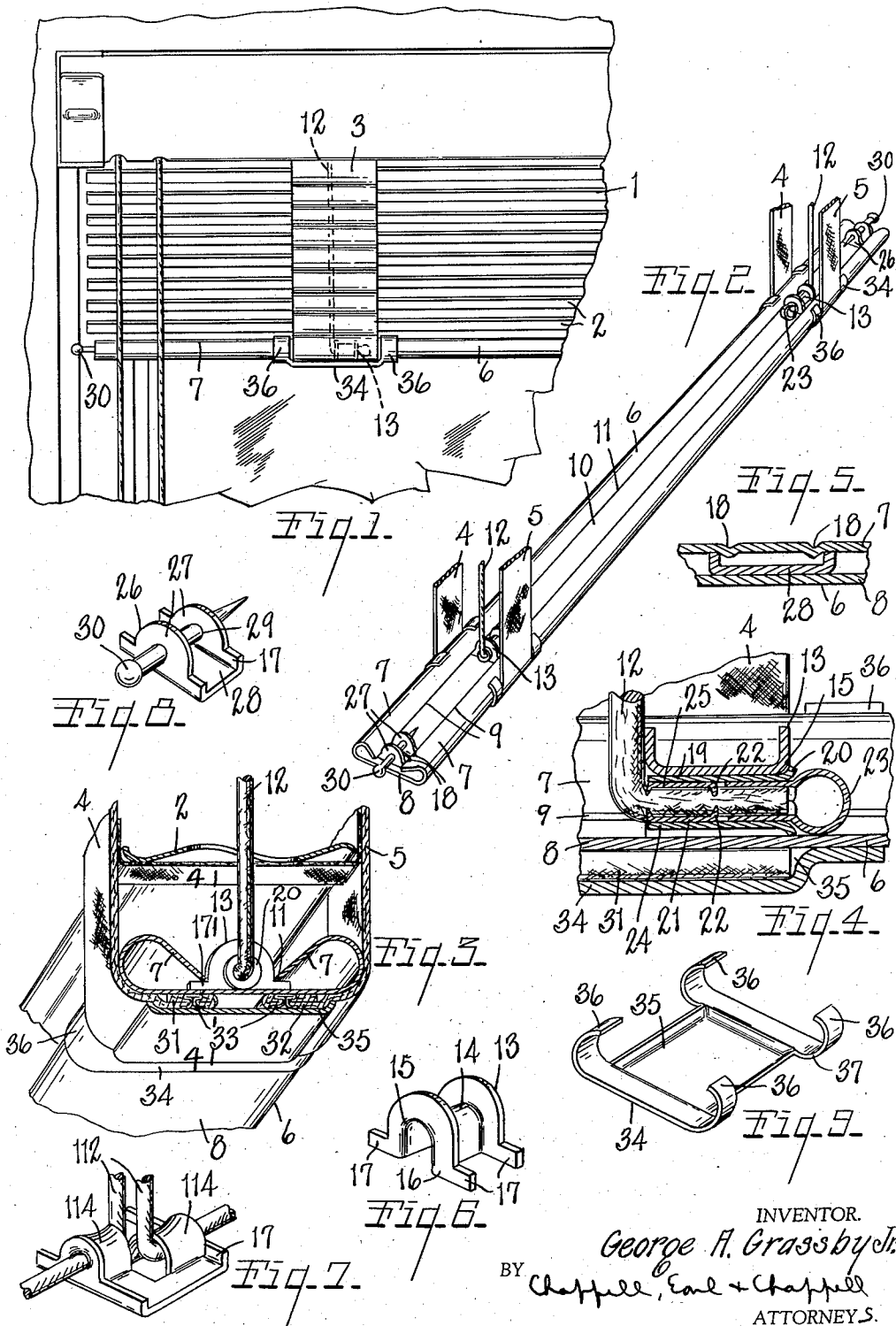
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BOTTOM RAIL FOR VENETIAN BLINDS

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BOTTOM RAIL FOR VENETIAN BLINDS

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This invention relates to Venetian blinds and more particularly to all metal bottom rails for Venetian blinds. It has for its objects:

First, the production of a new and improved all metal bottom rail for Venetian blinds which may be made from sheet metal.

Second, the production of such a bottom rail which has a substantial thickness and which can take in and conceal the various fixtures such as lift cord attaching members.

Third, to produce such a bottom rail which can be made up from stock lengths of sheet metal formed to the desired shape and so arranged that the various fixtures can be inserted therein properly positioned and fastened in place, thereby eliminating the necessity for cutting or stamping holes in the body of the bottom rail.

Fourth, to provide such a sheet metal bottom rail on which the slats of the blind are picked up as the blind is raised and in which the increased weight of the slats assists in firmly holding the lift cord attaching members in position.

Fifth, to provide such a bottom rail which may be easily and inexpensively maintained.

Sixth, to provide such a bottom rail with a simple and inexpensive clip for firmly attaching the ladder tapes thereto.

Other objects and advantages pertaining to details and economies of construction and operation will appear from the description to follow. Preferred embodiments of my invention are illustrated in the accompanying drawing, in which:

Fig. 1 is an elevation view of a portion of a blind having my improved bottom rail thereon.

Fig. 2 is a perspective view of my bottom rail.

Fig. 3 is a detail sectional view through my bottom rail showing the method of attaching the lift cords and the ladder tapes.

Fig. 4 is a detail sectional view taken on line 4—4 of Fig. 3, illustrating a further detail of the means for fastening the lift cords to the rail.

Fig. 5 is a detail sectional view showing the method of fastening the lift cord or other fixtures in position in my bottom rail.

Fig. 6 is a detail perspective view showing a lift cord attaching fixture.

Fig. 7 is a detail view showing a similar fixture for use in connection with multiple lift blinds.

Fig. 8 is a detail perspective view of a fixture for fastening the blind down when it is completely lowered.

Fig. 9 is a detail perspective view of the clip used for fastening the ladder tapes in position on the blind.

In the drawing, 1 represents a usual Venetian

blind having slats 2 and ladder tapes 3 which have a front section 4 which extends on one side of the bottom rail and a rear section 5 which extends on the other side thereof. 6 is my improved bottom rail which is formed of a strip of sheet metal. Aluminum or aluminum alloys are especially advantageous for this purpose because of their light weight, although any sheet metal can be employed. The bottom rail 6 is formed of a strip of sheet metal having its sides 7 bent up and recurved back over the base 8 of the strip. The edges 9 of the recurved portions 7 are spaced from one another to form a central channel 10 in the rail for receiving and concealing lift cord fixtures or the like. The edges 9 are also spaced from the base or bottom 8 of the rail, as is best seen in Fig. 3, to provide a space or way 11 to receive the base of the lift cord fixtures.

It will be noted that my improved bottom rail may be formed of a single strip of sheet metal without any perforations for fastening lift cords or the like. This makes it possible to produce long lengths of the formed strips which can be cut to length, thus making it possible to save considerable in the manufacture and installation of blinds because it is not necessary to form many different lengths of bottom rail to accommodate the different length or width of blind which must be supplied to the retail trade.

I attach the lift cords 12 by means of lift cord fixtures 13. These are preferably made as metal stampings and consist of an arched portion 14 having rounded flanged edges 15 having a base 16 which in this instance consists of four arms 17 which extend laterally from the bottom of the fixture. The base slides into the way or space 11 between the edges 9 of the recurved portions 7 of the bottom rail and the base or bottom 8 of the bottom rail.

In assembling the blind, the fixtures 13 are slid to the proper position and a punch press is employed to make indentations 18, as shown in Fig. 5, in the edge of the recurved portion 7 of the metal bottom rail. In this way the fixtures are permanently positioned as desired, although it is a simple matter to remove one of the fixtures if necessary and the fixtures are firmly fastened in place without the necessity of spot welding or some similar operation. The lift cords 12 are fastened in the fixtures 13 in the manner shown in Fig. 4. A sleeve 19 fits within the arch 14 and a flange 20 thereon prevents the sleeve from being pulled through the arch 14. A clip 21 is provided for grasping the end of the cord 12. This clip is a sheet metal member provided with cord 55

engaging prongs 22. The rounded portion 23 of the clip serves as a spring to separate halves 24 and 25 thereof to permit insertion of the cord. After the cord is inserted, the clip is brought together and is slid into the sleeve 19 as shown and the portion 23 of the clip which is larger than the opening in the sleeve 19 firmly holds the cord in place. This greatly simplifies attaching or detaching the cord and is of advantage in permitting easy removal of the slats if desired without the necessity for untying and re-tying the cord or for cutting the cord and without calling for completely re-threading the lift cord through the blind.

If a long blind which is heavier is to be made, it is desirable to use a multiple system of lift cord. In that instance the cords 112 are fastened centrally of the head member of the blind and pass down to the bottom rail, along the bottom rail to points adjacent the end, similar to the points shown for the location of the fixtures 13 in Fig. 4. The cord then passes up to the head part and over a pulley and down. This system is well known in the art and I have not shown and described it in detail.

In Fig. 7 I show a fixture for insertion in my bottom rail at the center thereof for use in connection with such a double lift. The fixture is held in position as shown in Fig. 5 and provides passage for the two sections of lift cord 112. Arches 114 are provided similar to the arch 14, although these arches are offset from one another so that the lift cords 112 are disposed substantially in a plane at right angles to the length of the bottom rail, permitting them to be placed more closely together than would be possible using two fixtures such as 13 at the center of the rod.

In Fig. 8 I show a fixture 26 for insertion at the end of my bottom rail 6. This fixture is a stamping consisting of two members 27 perpendicularly disposed on a base 28 apertured at 29 to receive a pin 30 which extends from the end of the rail to serve as means for fastening the rail when the blind is down.

The ladder tapes are fastened to my bottom rail in a new and improved manner. The ends of the front and rear portions 4 and 5 are each bent back on one another as shown at 31 and 32 in Fig. 3 and the folded back portions are held in position with staples 33. A clip 34 which is a stamping of sheet metal is provided. This clip has a recess 35 into which the folded portions of the ends of the front and rear portions 4 and 5 of the ladder tape are held. The unfolded portion of the ladder tape passes between the clip and the bottom rail 6 and the clip is clamped against the bottom rail so that the folded portions of the ladder tape serve as stops to prevent the ladder tape from becoming detached from the bottom rail.

Arms 36 formed to clip on the bottom rail 6 are provided. These arms are spaced from one another forming a space 37 through which the unfolded portion of the ladder tape passes. It will be appreciated that when the lift cord fixtures are positioned, the ladder tapes may be easily fastened in place by means of the clip without the necessity for any spot welding or punching or other fastening means. Since no great weight is placed on the ladder tapes at this point, the clip serves as a most satisfactory fastening means.

It will be appreciated that my bottom rail can

be made up in lengths and cut off as desired and that the metal stampings serving as lift cord fixtures or the like may be inserted and simply, quickly and easily anchored in place, stock fixtures being used in all instances, which greatly simplifies the assembling and retailing of Venetian blinds.

I have described my improved structure in the embodiments preferred by me and wish to claim the same broadly as well as specifically, as pointed out in the appended claims.

Having thus described my invention, what I claim as new and desire to secure by Letters Patent is:

1. In a Venetian blind, the combination of a bottom rail having its bottom formed of a strip of sheet metal, said strip having its sides bent up and recurved and spaced from one another to form the sides of the bottom rail, and a central channel therein for concealing lift cord fixtures or the like, the edges of the recurved portion of said strip being spaced from the bottom of the rail, a lift cord fixture having a base fitted in the space between the bottom of said rail and said edges and having a lift cord engaging portion extending into and concealed by said channel, said lift cord fixture being fixed in place by indentations in the recurved portion of the strip, a ladder tape having front and rear portions extending on opposite sides of said bottom slat and to the bottom thereof, each ladder tape having its end folded over and fastened on itself, a clip having a recess to receive and hold the folded ends of said ladder tape, said clip being fastened on the bottom of said bottom slat and clamping said ladder tapes thereagainst with the unfolded portions extending from said clip and up the sides of the rail, said clip having arms embracing the sides of said bottom rail and holding said clip in position on the bottom thereof.

2. In a Venetian blind, the combination of a bottom rail having its bottom formed of a strip of sheet metal, said strip having its sides bent up and recurved and spaced from one another to form the sides of the bottom rail, and a central channel therein for concealing lift cord fixtures or the like, the edges of the recurved portion of said strip being spaced from the bottom of the rail, a lift cord fixture having a base fitted in the space between the bottom of said rail and said edges and having a lift cord engaging portion extending into and concealed by said channel, said lift cord fixture being fixed in place by indentations in the recurved portion of the strip.

3. In a Venetian blind, the combination of a bottom rail having its bottom formed of a strip of sheet metal, said strip having its sides bent up and recurved and spaced from one another to form the sides of the bottom rail, and a central channel therein for concealing lift cord fixtures or the like, the edges of the recurved portion of said strip being spaced from the bottom of the rail, a lift cord fixture having a base fitted in the space between the bottom of said rail and said edges and having a lift cord engaging portion extending into and concealed by said channel.

4. In a Venetian blind, the combination of a bottom rail having its bottom formed of a strip of sheet metal, said strip having its sides bent up and recurved and spaced from one another to form the sides of the bottom rail, and a central channel therein for concealing fixtures or the like, the edges of the recurved portion of said strip being spaced from the bottom of the rail,

a fixture having a base fitted in the space between the bottom of said rail and said edges, said fixture being fixed in place by indentations in the recurved portion of the strip.

5 5. In a Venetian blind, the combination of a bottom rail having its bottom formed of a strip of sheet metal, said strip having its sides bent up and recurved and spaced from one another to form the sides of the bottom rail, and a central
10 channel therein for concealing fixtures or the like, the edges of the recurved portion of said strip being spaced from the bottom of the rail, a fixture having a base fitted in the space between the bottom of said rail and said edges.

15 6. In a Venetian blind, the combination of a bottom rail, a ladder tape having front and rear portions extending on opposite sides of said bottom slat and to the bottom thereof, each ladder tape having its end folded over and fastened on
20 itself, a clip having a recess to receive and hold the folded ends of said ladder tape, said clip being fastened on the bottom of said bottom slat and clamping said ladder tapes thereagainst with the unfolded portions extending from said clip
25 and up the sides of the rail, said clip having arms embracing the sides of said bottom rail and holding said clip in position on the bottom thereof.

7. In a Venetian blind, the combination of a bottom rail, a ladder tape having front and rear
30 portions extending on opposite sides of said bottom slat and to the bottom thereof, each ladder tape having its end folded over and fastened on itself, a clip having a recess to receive and hold the folded ends of said ladder tape, said clip being
35 fastened on the bottom of said bottom slat and clamping said ladder tapes thereagainst with the unfolded portions extending from said clip and up the sides of the rail.

8. In a Venetian blind, the combination of a
40 bottom rail having its bottom formed of a strip of sheet metal, said strip having its sides bent up and recurved and spaced from one another to form the sides of the bottom rail, and a central channel therein for concealing fixtures or the
45 like, the edges of the recurved portion of said strip being spaced from the bottom of the rail, a fixture having a base fitted in the space between the bottom of said rail and said edges and a pin

in said fixture extending from the end of the rail to serve as means for fastening down a Venetian blind.

9. In a Venetian blind, the combination of a bottom rail having its bottom formed of a strip
5 of sheet metal, said strip having its sides bent up and recurved and spaced from one another to form the sides of the bottom rail, and a central channel therein for concealing fixtures or the like, the edges of the recurved portion of said
10 strip being spaced from the bottom of the rail, a lift cord fixture having a base fitted in the space between the bottom of said rail and said edges having a pair of arches struck up therein and offset laterally from one another to serve
15 for the passage of lift cords in a multiple lift system for Venetian blinds.

10. In a Venetian blind, the combination of a bottom rail having its bottom formed of a strip
20 of sheet metal, said strip having its sides bent up and recurved and spaced from one another to form the sides of the bottom rail, and a central channel therein for concealing fixtures or the like, the edges of the recurved portion of said
25 strip being spaced from the bottom of the rail, a fixture having a base fitted in the space between the bottom of said rail and said edges and a pin in said fixture extending from the end of the rail to serve as means for fastening down a Venetian
30 blind, said fixture being fixed in place by indentations in the recurved portion of said strip.

11. In a Venetian blind, the combination of a bottom rail having its bottom formed of a strip
35 of sheet metal, said strip having its sides bent up and recurved and spaced from one another to form the sides of the bottom rail, and a central channel therein for concealing fixtures or the like, the edges of the recurved portion of said
40 strip being spaced from the bottom of the rail, a lift cord fixture having a base fitted in the space between the bottom of said rail and said edges having a pair of arches struck up therein and offset laterally from one another to serve
45 for the passage of lift cords in a multiple lift system for Venetian blinds, said fixture being fixed in place by indentations in the recurved portion of said strip.

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