May 3, 1938. R. LABORDA ET AL 2,116,356

VENETIAN BLIND

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Fig. 1.

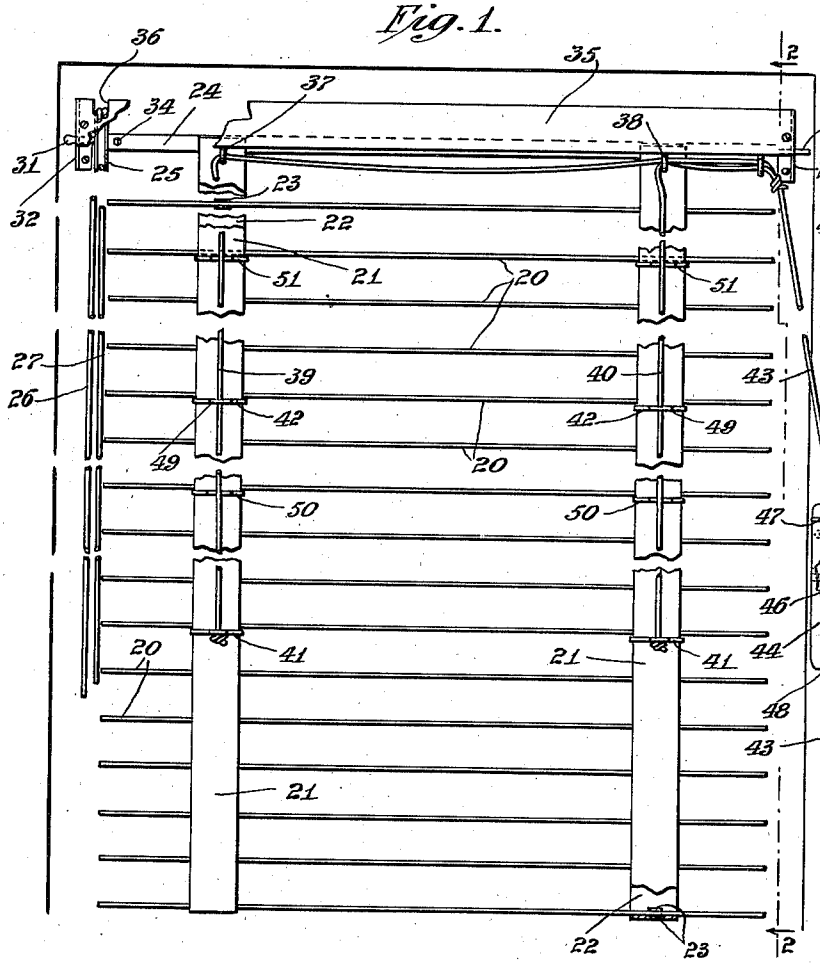


Fig. 2.

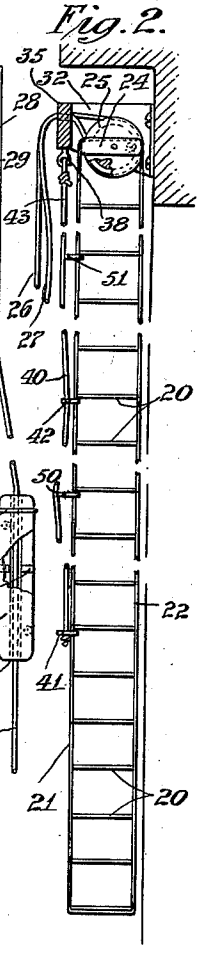


Fig. 3.

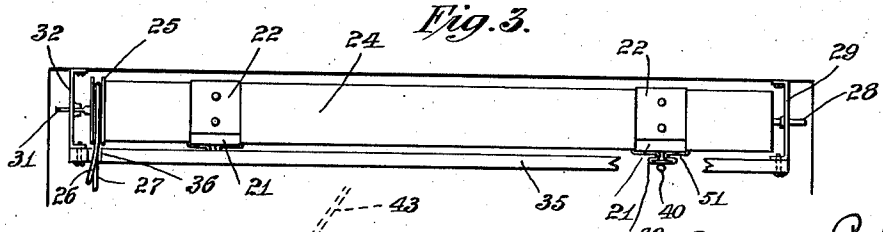
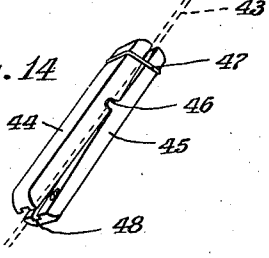


Fig. 14



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VENETIAN BLIND

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Fig. 4.

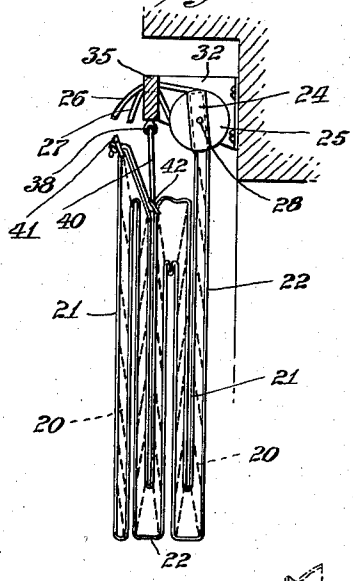


Fig. 5.

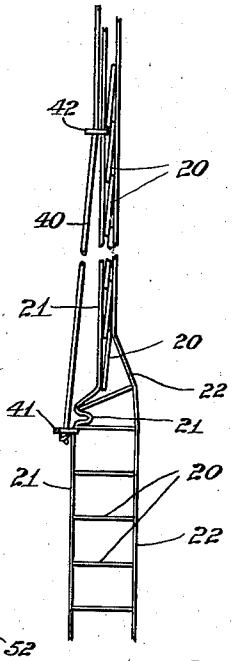


Fig. 6.

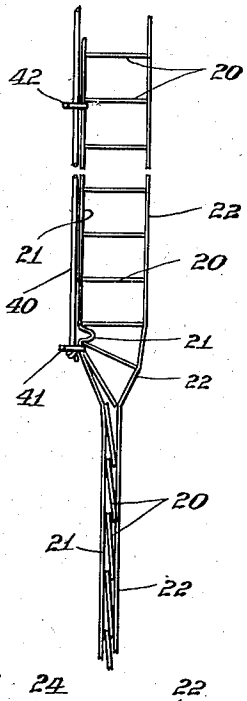


Fig. 8.

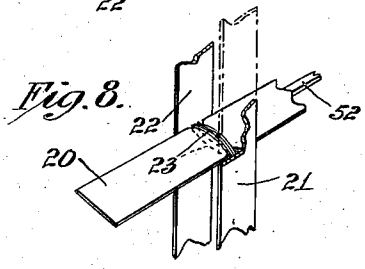


Fig. 9.

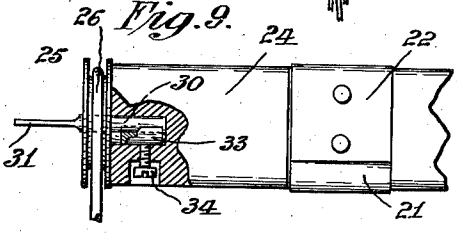


Fig. 7.

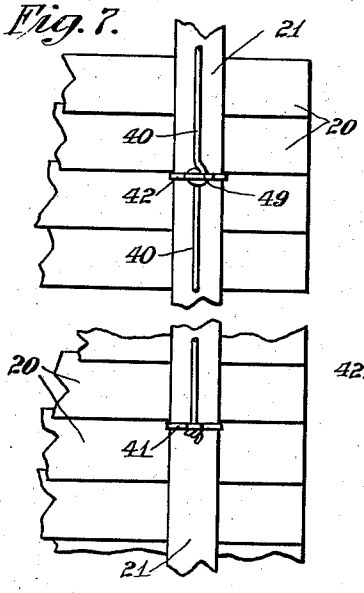


Fig. 12.

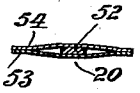


Fig. 13.

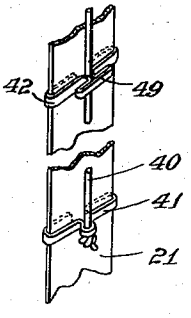


Fig. 10.

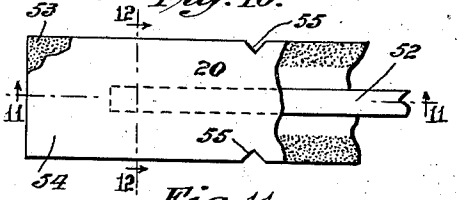
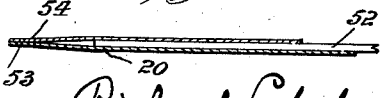


Fig. 11.



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UNITED STATES PATENT OFFICE

2,116,356

VENETIAN BLIND

Richard Laborda and James Carreras, Brooklyn, N. Y.

Application June 19, 1937, Serial No. 149,053

6 Claims. (Cl. 156—17)

The invention relates to Venetian blinds, and more particularly to a particular construction of louvers and actuating means therefor by which the lighting and ventilating effects secured by the blinds may be varied, apart from the raising and lowering of the ladder tapes supporting the louvers to open or close the blinds as a whole or the tilting of the louvers while the blinds are lowered.

Most Venetian blinds now commonly in use have two controls, one of which is used solely for raising and lowering the louvers and consists of pull cords passing through openings in the various louvers and attached to the bottommost louver; and the other of which consists of pull cords acting upon a rotatable support for said tape by which the ladder tapes upon one side of the louvers may be raised, and those on the other side simultaneously lowered so as to tilt the louvers in a manner to control the volume of air or light passing into a room.

The first set of pull cords, which as a matter of convenience may be termed "lift" cords, have no function except to raise and lower the louvers, the tapes between succeeding louvers collapsing or being extended according to whether the louvers are being raised or lowered. The sole function of the other pull cord is to impart simultaneous tilting movement to all of the louvers. These pull cords may be termed "tilting" cords.

In this old type of Venetian blind, in raising and lowering the blinds, all of the louvers are in, or are brought into, a substantially horizontal plane and rest one upon the other, while, with the actuating of the tilting pull cords, all of the louvers are brought into substantially horizontal vertical planes; in substantially parallel horizontal planes, or in parallel planes intermediate the vertical and the horizontal. In the last instance, the quantity of tilting movement of all of the louvers may be varied according to the volume of light and air desired in a room. In such blinds, all of the louvers have a setting corresponding with all of the other louvers, and while in raising and lowering the blinds the various louvers are successively raised or lowered, in tilting the louvers they all have simultaneous similar movement to the same extent.

In a blind embodying our invention, the construction and arrangement of parts is such that when raising and lowering the louvers, they move in pendent groups occupying substantially parallel vertical planes adjacent the top of the window opening, the louvers of each group, as they are being raised, automatically closing, if they were open when starting to raise the blind. The ladder tapes remain distended as to all louvers excepting where these tapes pass from one group of louvers to another. With this condition, a valance effect is always secured when the blinds are in the fully raised position.

The manner of connecting the lift cords to the louvers is not only such as to ensure the above action, but also such that when the louvers are in the lowered position, one group of louvers may be open or closed, partially or wholly, by the tilting cords, and another group may be closed or opened, partially or wholly, by the lift cords. Furthermore, the construction may be such that the number of louvers of each group may be varied.

This effect is secured by so constructing the actuating means for the ladder tapes that one tape will be raised when the other is lowered, and by connecting the lift cord to one of the tapes only, so as to modify the action of the tilting cord as to the portion of the tapes below the point of connection of the lift cords therewith. By thus connecting the lift cords it is possible to control the tilting action of the louvers of one group by means of the lift cord, entirely independently of any movement of the remaining louvers.

While, in the ordinary Venetian blind, a special box fitting is usually provided, which box fitting is built into the window frame adjacent the top thereof, the construction of the blind of our invention is such that the blind may be mounted in ordinary brackets, such as are commonly used with window shades, means being provided to resist the turning movement of the mechanism acted upon by the tilting cords so as to ensure the louvers remaining in any position in which they are placed through the movement of these cords.

The invention consists in a Venetian blind embodying therein the novel features of construction and combination of parts hereinafter set forth and described, and more particularly pointed out in the claims hereto appended.

Referring to the drawings,

Fig. 1 is a front view of a Venetian blind embodying the invention, vertically condensed and partly broken away;

Fig. 2 is a section on the line 2—2 of Fig. 1;

Fig. 3 is a plan view of the blind shown in Figs. 1 and 2, also partly broken away;

Fig. 4 is a vertical section showing the blind raised;

Fig. 5 is a schematic view showing one, an up-

per, group of louvers, closed, and another, and lower group, open;

Fig. 6 is a view similar to Fig. 5 showing one, an upper, group of louvers, open, and another, and lower group, closed;

Fig. 7 is a fragmentary portion of a blind, illustrating in detail the manner of attaching one of the lift cords to one of the ladder tapes and the manner of varying the number of louvers included in the group of louvers, the opening and closing of which is controlled by the lift cords independently of the tilting cords;

Fig. 8 is a detail view showing the construction of the ladder tapes and the manner of connecting a louver therewith;

Fig. 9 is a detail view of the top strip and the friction device operative thereon;

Fig. 10 is a fragmentary portion, partly broken away, of one end of one of the louvers, showing the detailed construction thereof;

Fig. 11 is a section on the line 11—11 of Fig. 10;

Fig. 12 is a section on the line 12—12 of Fig. 10;

Fig. 13 is a detail, perspective view showing the attachment means between one of the lift cords and one of the ladder tapes; and

Fig. 14 is a perspective view of the friction device restraining movement of the lift cords.

Like numerals refer to like parts throughout the several views.

In the embodiment of the invention shown in the drawings, we provide a vertical series of louvers supported by two pairs of tapes, the tapes 21 and 22 of each pair being connected by cross stays or "rungs" 23. These stays 23 are of a length approximating the width of each louver, and as used in our blinds, these stays, instead of being offset tapes secured adjacent opposite edges of the tapes as in the ordinary ladder tape, are composed of a plurality of threads positioned substantially centrally of the tape, the louvers 20 passing between the threads of these stays so as to be firmly held in position.

As will more fully appear hereinafter, the louver construction is such as to afford notches at the opposite edges thereof engaging these stays so as to avoid lateral shifting of the louvers in relation to the tapes.

The tops of the tapes 21 of each pair pass over one edge of, and are secured to, a revoluble strip 24, preferably of wood, the other tapes 22 of each pair passing about the opposite edge of said strip and also being secured thereto.

At one end, the strip 24 has secured thereto a sheave 25 or other means by which said strip may be rotated in either direction by means of tilting cords 26 and 27, one of which is connected to said sheave at one diameter, and the other of which is connected thereto at an opposite diameter. One end of the strip 24 is provided with a fixed trunnion 28 adapted to pass through a round opening in a bracket 29 similar to an ordinary roller shade bracket. The other end of said strip is rotatably mounted upon a spur shaft 30 having a square end 31 adapted to fit an open angular socket in a bracket 32 similar to the bracket of an ordinary window shade used in controlling the tension of the spring.

To ensure the strip 24 being held in any position in which it may be set when the tapes are actuated to control the position of the louvers, we provide the strip 24 with a friction brake 33 acted upon by a set screw 34. This brake shoe 33 bears against and holds the shaft 30 within the strip 24 while permitting a restrained turning movement of the strip as a whole by means of the sheave 25 and the tilting cords 26 and 27.

As shown in the accompanying drawings, the brackets are provided with a facing plate 35 concealing the strip 24, and supporting guides for the tilting cords and for the lift cords in a manner to be hereinafter described. The guide for the tilting cords is shown at 36 and consists merely of an opening through the upper edge of said plate 35. Carried by the bottom of said plate are ordinary eye screws 37 and 38 arranged in substantially the plane of the center of the tapes 21 of each ladder.

The sole function of the strip 24 is to raise one of the tapes 21 or 22 while simultaneously lowering the other tape 22 or 21 of each pair, for the purpose of varying the angle of the louvers in regulating the amount of light and air allowed to pass into or from a room.

These cords have no function in raising and lowering the louvers to expose or cover different portions of the window opening. For this purpose, we provide lift cords 39 and 40, and the new mode of operation of the blind embodying our invention, as compared with Venetian blinds commonly in use, results largely from the manner of attaching said lift cords to the louvers. While, in an ordinary Venetian blind, each of the louvers has an opening therethrough between the tapes of each pair and has the end of each lift cord attached to the bottommost louver so that movement of the louvers when opening and closing the blind results from the movement of this bottommost louver, in the blind of our invention, the lifting of the louvers is through one of the tapes as 21 of each pair of tapes. The point of attachment of each lift cord to its tape is well above the lowermost louver, so that instead of stacking the louvers, as in an ordinary blind, these louvers are moved in groups and, if the louvers are not already closed, the various louvers will be tilted, so that when the blind is in the fully raised position, the louvers will be closed and will depend from adjacent the strip 24 so as to give a valance like effect.

The end of each lift cord 39 and 40 is attached to metal fittings 41 secured to the respective tapes 21, and in its run from this fitting to the guide eyes 37 and 38, passes between a metal fitting 42 carried by said tape, and the tape, so that in the upward movement of said lift cords, succeeding groups of louvers will be formed and brought into a substantially parallel relation at the top of the blind as shown in Fig. 4 of the drawings. To ensure substantially the same number of louvers in each group, the fittings 42 should be spaced from the fittings 41 a distance substantially equal to twice the distance between said fittings 41 and the bottommost louver.

In the form of the invention shown, there will be five groups of louvers when the blind is fully opened, each group having six or seven louvers. This, however, is merely a showing of a particular construction and the conditions may be varied.

The fittings 42 serve as guides permitting a run of the lift cords 39 and 40, and also as stops engageable by the fittings 41, so that the lifting power will be applied successively to different portions of the length of the tapes 21.

As a matter of convenience, the lift cords 39 and 40 merge into or are connected with a single lift cord 43 hanging at one side of the blind, this lift cord being subjected to sufficient restraint by a counterweight, or preferably by a friction brake, so that the louvers may be held at any

point intermediate the fully closed or the fully open position.

This restraining mechanism consists of pivotal blocks 44 and 45, as shown more particularly in Figs. 1 and 14 of the drawings, having intermediate the ends thereof pivot points 46, and having a spring 47 acting upon one end thereof. The single lift cord 43 passes through a channel in these blocks, shown at 48, the inner faces of the blocks adjacent one end thereof being spaced apart so that the two blocks may be pivoted to relieve the pressure upon the cord and thus permit a free run thereof. One of these blocks, if desired, may be secured by screws or in any other desired manner to the trim at one side of a window opening. If desired, a weighted block may be used, which block is not connected with any permanent part of a building.

The lift cords 39 and 40 may be used not only to raise and lower the louvers in opening and closing the blind, but may be also used to tilt or prevent tilting of all louvers between the point of attachment of these cords to the tapes 21 and the bottommost louver.

To permit variation in the number of louvers, the tilting of which may be controlled by the lift cords, we provide the fittings 42 with cleats 49 about which a bight of the lift cords may be passed so as to place all louvers 20 below the fittings 42 under the control of said lift cords, so far as the tilting action thereof is concerned. This is best shown in Fig. 13 of the drawings.

By securing the lift cords 39 and 40 to the cleats 49 upon the fittings 42, the tilting action of about 60% of the louvers may be controlled by the lift cords. If it is desired to secure a greater variation in the number of louvers thus controlled by the lift cords, additional fittings 50 and 51 may be secured to the tapes 21, one intermediate the fittings 41 and 42 and the other between the fittings 42 and the top strip 24. The fittings 50 and 51 are also provided with cleats 49 corresponding with the cleats 49 upon the fitting 42, but the lift cords 39 and 40 are not confined or guided by the fittings 50 and 51 since this would interfere with the raising and lowering of the blinds. The cleats, however, are all located close to the center of the tapes 21, so that a bight may be formed in the lift cords 39 and 40 and engaged with the cleats.

It is desirable that the structure be made as light as possible and yet have the louvers sufficiently rigid to ensure the proper movements thereof by the tapes 21 and 22 of each pair. It is also desirable that the louvers be transversely arched in cross section and have both the side and the end edges closed so as to prevent the accumulation of dust and dirt therein.

To meet the above conditions, we employ a special construction of louver which we will now describe.

There is available on the open market at the present time, tough, light cardboard or heavy paper having one surface thereof coated with a water resistant material. This paper is produced in various colors, and the finished surface thereof may have various designs impressed thereon, either by typographical or lithographic printing. This cardboard or paper lacks the inherent thickness or rigidity to make it suitable for use in producing louvers for the blind of the invention. It cannot be readily applied to thicker stock without leaving unsightly edges on the louver. Its use in the production of louvers, however, is highly desirable because its use affords an unlimited range of color schemes and decorative designs which may be incorporated in the louver.

In order to utilize this material in the production of louvers, we construct the louvers with a reinforcing core 52 consisting of a wooden slat having elongated sheets of paper 53 and 54 upon opposite sides thereof, the portions of the paper adjacent all its edges entirely about the louver being brought together and cemented to each other. The thickness of the slat 52 provides a central bulge lengthwise of the louver, as shown more particularly in Fig. 12 of the drawings, so as to get the arched effect above referred to, and at the same time makes the louver sufficiently rigid to ensure its proper retention by the stays 23 connecting the tapes and permit a tilting action by means of the tapes and said stays without possibility of deformation of the louvers. The wooden slat 52 is shorter in length than the louvers, as shown in Figs. 10 and 11, and the end portion of the paper strips may thus be brought together and cemented at the ends.

The opposite edges of the paper strips 53 and 54 are notched as shown at 55, these notches being located in opposite edges of the louver in a position where they will receive the threads 23 of the cross stays of the ladder tape. In this manner, lengthwise shifting of the louvers in relation to the tapes is prevented, and likelihood of the escape of the louvers from the stays 23 is prevented.

By using light cardboard or heavy paper reinforced by a slat 52, it is possible to produce the opposite faces of each louver of different colors if desired, or to impress upon sheets of paper, complete or partial designs, making the louvers attractive when in the fully closed position, and if desired, permit the building up of a complete design, different parts of which are carried by different louvers. The absence of any openings through the louvers for the passage of the lift cords makes the use of a louver of the type above referred to possible.

Aside from the locating of the slat 52 and the cementing of the edges of the facing strips, no finishing work is required upon the louvers, such as painting or enamelling, commonly resorted to in other types of Venetian blinds.

The operation of a Venetian blind embodying the invention is substantially as follows:—

To raise a blind, the lift cords 39 and 40 are drawn upwardly by the end portion 43 connected therewith. Whether the louvers are open or closed the effect will be very much the same. If they are closed, upward movement of the lift cords will lift the tapes 21 at and below the point of attachment of the lift cords to the fitting 41. The lowermost group of louvers, or those below the fitting 41, will pass upwardly as a unit and carry with them the portion of the tape above said fitting 41. This movement will continue until the fitting 41 engages the fitting 42.

By locating this fitting 42 about twice the distance between the fitting 41 and the lowermost louver, at the point of engagement of the fitting 41 with the fitting 42, each pair of tapes 21 and 22 between the fittings 41 and 42 will be looped, thus bringing into three parallel groups, all of the louvers between the lowermost louver and the fitting 42, all of which will move upwardly in unison with a continued movement of the lift cords, forming a second loop and bringing five groups of suspended louvers in parallel relation with each other to secure a valance like effect

toward the lintel of the window opening. Since any upward stress upon the tapes 21 exposed within a room will tilt the various louvers, it is obvious that whether the louvers be open or closed, the upward lift upon the tapes 21 by the lift cords 39 and 40, first at the fitting 41 and subsequently at the fitting 42, will close the louvers by tilting them in one direction or the other, as indicated in dotted lines in Fig. 4, so that several groups of louvers will be closed when the blind is fully open, or even during a partial opening of the blinds, or immediately prior to any upward movement of the lower louvers, in a manner to be hereinafter referred to. This closing of the louvers will occur, whether they are in the fully or partially open position or whether they are being closed, with upward movement of the tapes 21 by the lift cords 39 and 40.

As indicated by Fig. 4 of the drawings, when the blind is raised, the various louvers will be closed and nested in vertical planes instead of being open and nested upon horizontal planes as with the ordinary Venetian blind. As shown in Fig. 4 of the drawings, all of the louvers were in the closed position when lifting power was applied to the tapes 21 through the lift cords 39 and 40.

To close the blinds it is merely necessary to raise the lift cord 43, whereupon the various groups of louvers will progressively descend by gravity.

To secure the above action, it is essential that the lift cords 39 and 40 shall be guided in their movement by some part of the fitting 42, as by passing said cords between said fittings and the tapes 21. To lower the blinds, it is merely necessary to raise the portion 43 of the lift cord.

The clamp mechanism shown in Figs. 1 and 14 develops sufficient friction to prevent the falling of the louvers unless the clamping action of the jaws 44 and 45 is relieved or the pull cord 43 is forcibly drawn through these jaws.

When lowering the blinds, the louvers will assume either the open or the closed position, according to the position of the strip 24.

When, with the use of ordinary Venetian blinds, it is desired to control or give a particular direction to light or air entering a room, the tilting cords are used to bring the various louvers into a horizontal plane, or to tilt them upwardly or downwardly to a variable extent. In such blinds, all of the louvers have the same movement in the same direction, or each louver has the same setting as every other louver. The only means for adjusting the louvers is the tilting cords.

In a blind embodying the invention, the construction is such that one group of louvers may be closed, or partially closed, while another group may be fully or partially opened. This is made possible because one group, so far as the tilting action of the louvers is concerned, is controlled by the tilting cords, while the other group is controlled by the lift cords.

For example, assuming that all of the louvers are in the fully open position and it is desired to fully or partially close all louvers above the fittings 41, this may be done by pulling the tilting cord 27 to give all of the louvers of the upper group a downward tilt inwardly of a room. This downward movement of the tapes 21 does not result in any downward movement of louvers below the fittings 41 because the tapes 21 are held against downward movement below the fittings 41 by the lift cords. The tapes 22, however, may have upward movement with the strip 24, but not sufficient to close the louvers in the group below said fittings.

If it be desired to partially close the louvers below the fittings 41, it is merely necessary to exert an upward movement upon the lift cords 39 and 40, which will tilt the louvers below said fittings 41 in a direction opposite to the tilt of the upper group of louvers by a slight lifting of the edge of the louvers adjacent the tapes 21. With the parts in this position, if it be desired to close the lower louvers, it is merely necessary to lower the lift cords 39 and 40.

If it be desired, when the louvers are in the open position, to close those louvers below the fittings 41, it is merely necessary to raise the lift cords 39 and 40 so as to raise the portions of the tapes 21 below the fittings 41. The louvers below the fittings 41 always have an upward tilt when actuated by means of the lift cords 39 and 40. When the parts are in this position, the louvers above the fittings 41 may be tilted in either direction to close or partially close the louvers without raising or lowering the blind.

Ordinarily, it is desirable to have the upper louvers open or partially open and to close the lower louvers or partially close them to an extent to prevent vision through the blind.

For opening or closing the blind, it is essential that the lift cords have a free run from the fittings 41 to the clamp or counterweight. When it is desired to increase the number of louvers to be closed by means of the lift cords 39 and 40 beyond those below the fittings 41, a bight may be formed in the lift cords, which bight encloses the cleats upon the fittings 42, 50 or 51, as desired, so that the action of the tilting cords upon the louvers will be limited to those louvers above the fittings with which the lift cords are connected.

The fittings 42, 50 and 51 provide a plurality of points with which the lift cords may be connected when it is desired to turn the louvers for controlling the volume of light or air passing therethrough. It is obvious that the lift cords 39 and 40 may be used for giving the louvers below these fittings a tilting movement only in one direction or upwardly.

The position of parts when the upper louvers are open and the lower louvers are closed is illustrated in Fig. 6 of the drawings.

With the construction and mode of operation described, it is possible, by the actuation of both the tilting cords and the lift cords, separately or together, to open or close all of the louvers, to open a lower group of louvers and close an upper group thereof, or to close a lower group of louvers and open an upper group thereof. By using fittings 42, 50 and 51, the number of louvers included in each group of independently movable louvers may be varied.

If a bight in the lift cords 39 and 40 is engaged with the cleats upon the fittings 42, 50 and 51, it is necessary to disengage it from said cleats when it is desired to raise and lower the blind, since this is done only by a direct pull upon the fittings 41.

A Venetian blind embodying our invention, instead of requiring a special head box built into the window frame or secured thereto, may, as heretofore described, be mounted in ordinary metal brackets secured to the window frame, thus permitting a blind to be mounted or removed without the use of tools of any kind.

The construction and arrangement of the guides for the various cords is immaterial to the

invention, said guides being capable of wide variation as to form.

The use of louvers constructed as herein described permits the economical production of such louvers in various colors which will accord with the color scheme of a room in which the blinds are used. Because of the absence of the oblong slots in the louvers for permitting tilting action thereof, light-weight louvers may be used, and these louvers may be of greater strength than wooden louvers having such slots. All about each louver a narrow edge is presented which is hardly visible, although the swell of each louver is visible.

The edge notches **55** engage the threads of the stays **23** so as to prevent end creepage of the louvers. By locating these threads centrally of the tapes instead of adjacent the opposite edges thereof, and connecting the lift cords **39** and **40** to the fittings **41** centrally of the tapes, displacement of the louvers in relation to the stays during movement of the louvers is prevented, and the lifting action upon the tapes is applied to each louver through said stays. While said stays may be secured to the louvers, this is neither necessary nor desirable.

We have above described various lighting and ventilating effects obtainable by a differential movement of different groups of louvers, but whatever the position of these louvers may be, the tilting cords **26** and **27** may be actuated to close any louvers which may be opened, or open any louvers which may be closed.

It is not our intention to limit the invention to the precise details of construction shown in the accompanying drawings, it being apparent that such may be varied without departing from the spirit and scope of the invention.

Having described the invention, what we claim as new and desire to have protected by Letters Patent, is:—

1. A Venetian blind embodying therein a plurality of pairs of tapes, a plurality of louvers, means supporting said louvers between, and connecting them with, said tapes, means simultaneously operative to raise one and lower the other tape of each pair, lift cords, a fitting carried by a corresponding tape of each pair to which a lift cord is connected, said fitting being positioned adjacent the top of a group of louvers, whereby all of the louvers may be simultaneously opened or closed, or the louvers of one group may be opened or closed and the louvers of another group may be independently closed or opened, and a guide fitting for the lift cord carried by the same tape as said other fitting and positioned intermediate said first named fitting and said means for raising and lowering said tapes, whereby when raising or lowering the blind the louvers are moved in successive parallel groups.

2. A Venetian blind embodying therein a plurality of pairs of tapes, a plurality of louvers, means supporting said louvers between, and connecting them with, said tapes, means simultaneously operative to raise one and lower the other tape of each pair, lift cords, a fitting carried by a corresponding tape of each pair to which a lift cord is connected, said fitting being positioned adjacent the top of a group of louvers, whereby all of the louvers may be simultaneously opened or closed, or the louvers of one group may be opened or closed and the louvers of another group may be independently closed or opened, a guide fitting for the lift cord carried by the same tape as said other fitting and positioned intermediate said first named fitting and said means for raising and lowering said tapes, whereby when raising or lowering the blind the louvers are moved in successive parallel groups, and means carried by one tape of each pair whereby said lift cords may be selectively connected with different portions of the tapes to vary the number of louvers included in each independently operative group.

3. A Venetian blind embodying therein a plurality of pairs of tapes, a plurality of louvers, means supporting said louvers between, and connecting them with, said tapes, means simultaneously operative to raise one and lower the other tape of each pair, lift cords, a fitting carried by a corresponding tape of each pair to which a lift cord is connected, said fitting being positioned adjacent the top of a group of louvers, whereby all of the louvers may be simultaneously opened or closed, or the louvers of one group may be opened or closed and the louvers of another group may be independently closed or opened, a guide fitting for the lift cord carried by the same tape as said other fitting and positioned intermediate said first named fitting and said means for raising and lowering said tapes, whereby when raising or lowering the blind the louvers are moved in successive parallel groups, and means comprising cleats upon said guide fitting and upon fittings intermediate said first named fitting and said guide fitting, and intermediate said guide fitting and said means for raising or lowering the tapes of each pair about which bights in the lift cords may be taken to vary the number of louvers included in each independently operative group.

4. A Venetian blind embodying therein a plurality of pairs of tapes, a plurality of louvers, means supporting said louvers between, and connecting them with, said tapes, a revoluble strip upon opposite diameters of which the tops of the tapes of each pair are connected, tilting cords acting upon said strip to simultaneously raise one and lower the other tape of each pair, lift cords, a fitting carried by a corresponding tape of each pair to which a lift cord is connected, said fitting being positioned adjacent the top of a group of louvers, whereby all of the louvers may be simultaneously opened or closed, or the louvers of one group may be opened or closed and the louvers of another group may be independently closed or opened, and a guide fitting for the lift cord carried by the same tape as said other fitting and positioned intermediate said first named fitting and said means for raising and lowering said tapes, whereby when raising or lowering the blind the louvers are moved in successive parallel groups.

5. A Venetian blind embodying therein a plurality of pairs of tapes, a plurality of louvers, means supporting said louvers between, and connecting them with, said tapes, a revoluble strip upon opposite diameters of which the tops of the tapes of each pair are connected, tilting cords acting upon said strip to simultaneously raise one and lower the other tape of each pair, means for mounting said blind comprising brackets at opposite sides of a window opening, one of said brackets having a circular opening therethrough and the other having an angular opening therein, a fixed trunnion at one end of said strip, a spur shaft having an angular end upon which the opposite end of said strip is mounted, a friction device carried by said strip and acting upon said spur shaft, whereby turning of said strip upon said spur shaft is resisted, lift cords, a fitting carried by a corresponding tape of each pair to which

a lift cord is connected, said fitting being positioned adjacent the top of a group of louvers, whereby all of the louvers may be simultaneously opened or closed, or the louvers of one group may be opened or closed and the louvers of another group may be independently closed or opened, and a guide fitting for the lift cord carried by the same tape as said other fitting and positioned intermediate said first named fitting and said means for raising and lowering said tapes, whereby when raising or lowering the blind the louvers are moved in successive parallel groups.

6. A Venetian blind embodying therein a plurality of pairs of tapes, a plurality of louvers, means supporting said louvers between, and connecting them with, said tapes, means simultaneously operative to raise one and lower the other tape of each pair, lift cords, a fitting carried by a corresponding tape of each pair to which a lift cord is connected, said fitting being positioned adjacent the top of a group of louvers, whereby all of the louvers may be simultaneously opened or closed, or the louvers of one group may be opened or closed and the louvers of another group may be independently closed or opened, means restraining the run of said lift cords, and a guide fitting for the lift cord carried by the same tape as said other fitting and positioned intermediate said first named fitting and said means for raising and lowering said tapes, whereby when raising or lowering the blind the louvers are moved in successive parallel groups.

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