Nov. 24, 1959 S. PINTO 2,914,122

COMBINATION VINYL PLASTIC VENETIAN BLIND AND SCREEN

Filed Dec. 29, 1958

2 Sheets-Sheet 1

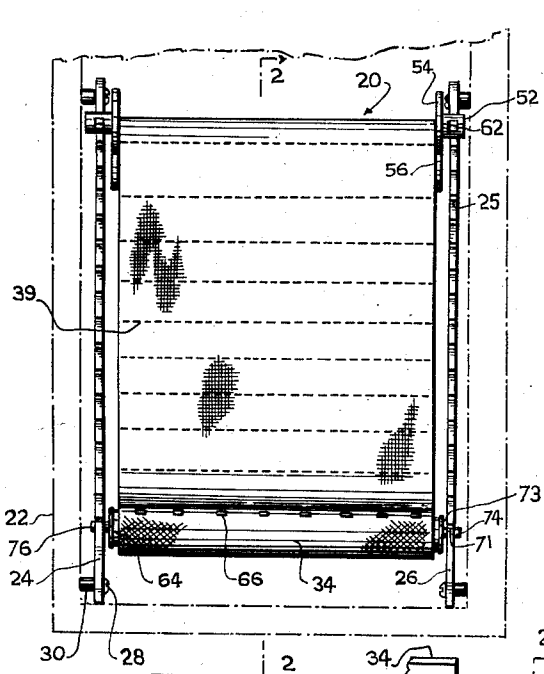


Fig. 1.

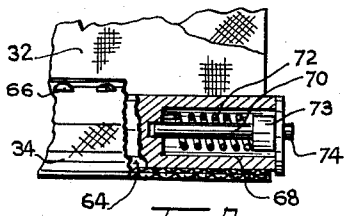


Fig. 8.

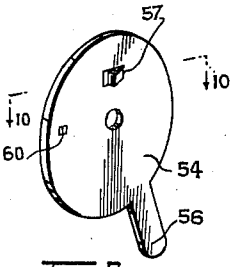


Fig. 9.

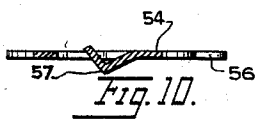


Fig. 10.

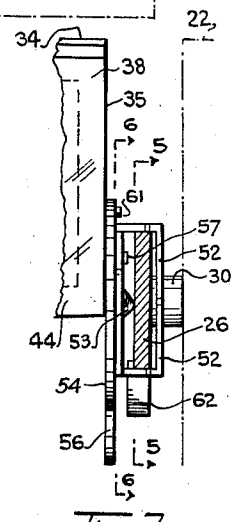


Fig. 3.

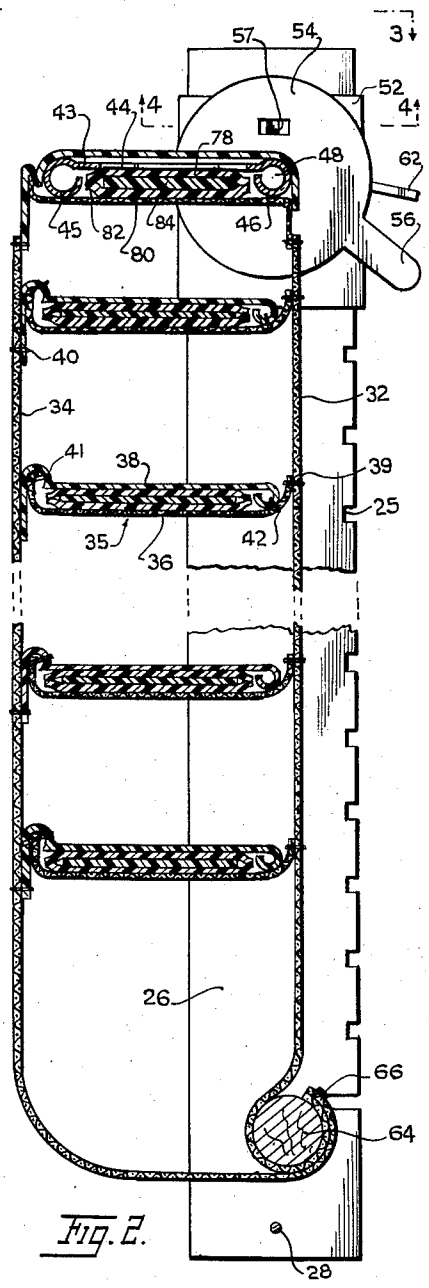


Fig. 2.

INVENTOR.
SALVATORE PINTO
BY
ATTORNEY

Nov. 24, 1959 S. PINTO 2,914,122

COMBINATION VINYL PLASTIC VENETIAN BLIND AND SCREEN

Filed Dec. 29, 1958 2 Sheets-Sheet 2

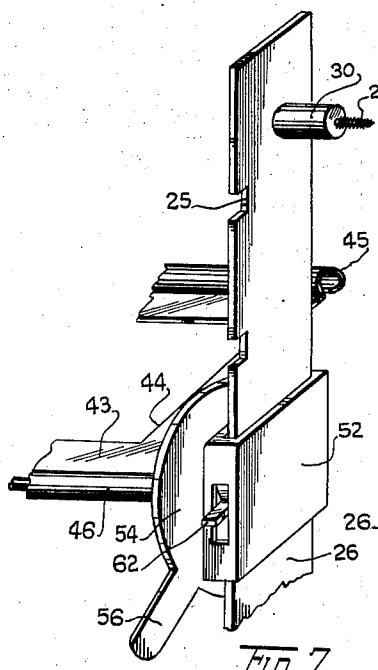


Fig. 7.

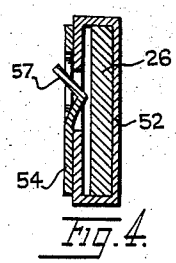


Fig. 4.

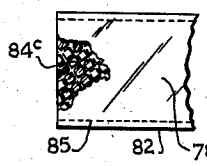


Fig. 14.

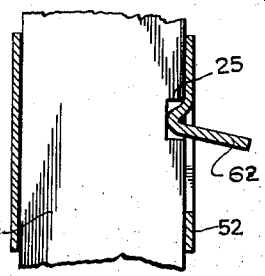


Fig. 5.

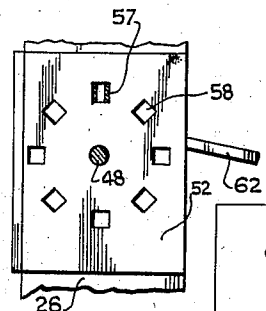


Fig. 6.

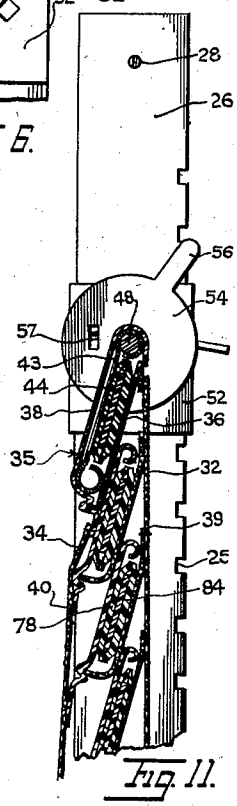


Fig. 11.

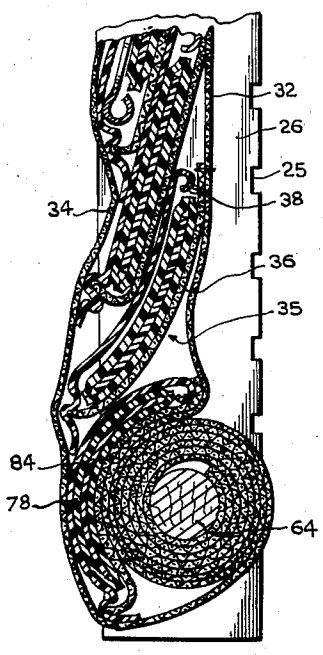


Fig. 12.

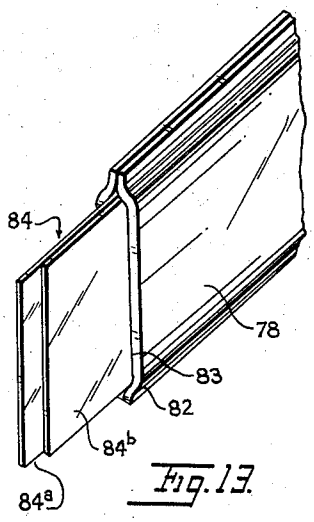


Fig. 13.

INVENTOR.
SALVATORE PINTO
BY Zoltan G. Polachek
ATTORNEY

United States Patent Office 2,914,122
Patented Nov. 24, 1959

2,914,122

COMBINATION VINYL PLASTIC VENETIAN BLIND AND SCREEN

Salvatore Pinto, Brooklyn, N.Y.

Application December 29, 1958, Serial No. 783,529

7 Claims. (Cl. 160—89)

This invention relates to the art of window shades and particularly concerns a shade provided with translucent colored slats adapted for tilting as in a Venetian blind, with plastic mesh sheets supporting the slats to serve as window screens.

According to the invention the colored slats are removably mounted in pockets formed of translucent plastic material so that the colored effects produced by the slats can be changed at will. The shade is formed of flexible members so that it can be rolled up or down to any desired height, and is further provided with means for holding the slats in tilted or overlapping positions with respect to each other.

It is therefore a principal object of the invention to provide a plastic Venetian blind and screen of the roller type.

It is a further object to provide a blind having removable colored slats carried in tiltable pockets in the blind.

It is a still further object to provide a blind of the character described which can be rolled up or down to any desired height and which can be tilted to position the slats in horizontal or overlapping positions.

It is another object to provide a duplex type of shade in which two perforated or mesh screens support slats therebetween, with the slats being removably supported in pockets.

For further comprehension of the invention, and of the objects and advantages thereof, reference will be had to the following description and accompanying drawings, and to the appended claims in which the various novel features of the invention are more particularly set forth.

In the accompanying drawings forming a material part of this disclosure:

Fig. 1 is an elevational view of a window shade embodying the invention.

Fig. 2 is a longitudinal sectional view on an enlarged scale taken on line 2—2 of Fig. 1.

Fig. 3 is a fragmentary plan sectional view taken on line 3—3 of Fig. 2.

Fig. 4 is another plan sectional view taken on line 4—4 of Fig. 2.

Figs. 5 and 6 are fragmentary sectional views taken on lines 5—5 and 6—6, respectively, of Fig. 3.

Fig. 7 is a perspective view of a portion of the tilting and height adjustment mechanism of the device.

Fig. 8 is an elevational view on an enlarged scale, of a portion of the shade of Fig. 1 with portions broken away to show internal structure.

Fig. 9 is a perspective view of a tilt adjustment disk employed in the mechanism of the device.

Fig. 10 is a sectional view taken on line 10—10 of Fig. 9.

Fig. 11 is a sectional view similar to Fig. 2 showing the upper part of the shade in closed and partially lowered position.

Fig. 12 is a further sectional view similar to Fig. 2 showing the lower part of the shade in closed and partially rolled up condition.

Fig. 13 is a perspective view of a portion of a slat employed in the device with a colored plastic panel partially inserted therein.

Fig. 14 is a plan view on a reduced scale of a portion of another slat and panel insert, with a portion of the slat broken away to show the insert.

Referring to the drawings, there is shown in Fig. 1 a window shade 20 embodying the invention. The shade is adapted for mounting in a rectangular window frame 22 in front of or beneath the usual double hung or casement type windows (not shown). The window frame 22 is shown in dotted lines in Fig. 1. Mounted on the window frame are two long, flat rails 24, 26. Each of these rails is secured to the window frame by screws 28 with the rails being spaced from the frame by spacers 30.

The shade includes inner and outer screens 32 and 34, best shown in Fig. 2. Each of these screens is made of flexible plastic mesh consisting of vinyl or the like. The open structure of the mesh material permits air to flow freely through the screens while excluding insects and the like. Between the screens are supported pockets 35 each formed by a layer 36 made of plastic mesh and by a layer 38 made of flexible imperforate material such as vinyl or polyethylene. The layer 38 is preferably formed of a colorless translucent or transparent material, but it can be colored if desired. Layers 36 and 38 are secured in generally parallel disposition as clearly shown in Fig. 2. Layer 36 is secured to screen 32 by stitching 39. Layer 38 is secured to screen 34 by stitching 40, and layers 36, 38 are secured to each other at opposite ends by stitching 41, 42. The uppermost pocket is supported on a rectangular plate 43 having a rectangular opening 44, best shown in Fig. 7.

Plate 43 has opposite rolled edges 45, 46. Edge 46 is engaged on a shaft 48 which passes through the rolled edge 46 and is secured at opposite ends in apertures of rectangular sleeves 52. As best shown in Fig. 3, the end of the shaft is formed with a head 53. Disposed between the end of plate 43 and sleeve 52 is a circular disk 54 having a handle portion 56 to facilitate rotation of the disk on shaft 48. Disk 54, as best shown in Figs. 4, 9 and 10, has a struck out spring finger 57, disposed to engage in one hole 58 of sleeve 52. These holes are spaced apart and arranged circularly as shown in Fig. 6. The spring finger and holes cooperate to retain the disk in any angular position in which the disk is set on the shaft 48. The disk has a hole 60 disposed near its periphery, as shown in Fig. 9, through which is inserted a lug extension 61 of plate 43 as shown in Fig. 3, so that when the disks 54 are turned on shaft 48, the plate is tilted to raise or lower the outer screen 34 and cause the pockets 35 to tilt such as shown in Fig. 11.

Sleeve 52 has a spring finger 62 struck in its front end and bent to extend inwardly and engage in slots or recesses 25 formed in the forward edges of the rails. The finger has its free end extending outwardly so that it can be manually lifted to release its bent portion from the recess 25 for sliding the sleeve up or down on the rail.

The body of the shade 20 is tensioned at its lower end by being rolled upon a roller 64 and secured thereby tacks 66 as shown in Figs. 1, 2 and 8. The lower ends of the screens are free of pockets so that they form a smooth, snug wrap for a few turns around the roller when the shade is partially lowered as shown in Fig. 12.

Initially only the lower ends of the screens 32 and 34 are wrapped around the roller. This roller 64 is a wooden member having a cavity 68 in which is a pin shaft 70 carrying a coil spring 72, as shown in Fig. 8. One end of the spring is anchored in the inner end of the cavity

68 and the outer end of the spring is secured to a plug 73 which has an outer flat catch finger 74. The catch finger engages in a slot 71 formed in the lower end of rail 26 so that the spring can be wound tight by turning the plug 73 and then engaging the finger in slot 71. The other end of the roller 64 has a pin shaft 76 rotatably supporting the roller in an aperture in the lower end of rail 24, as shown in Fig. 1.

By the mechanism thus described, the shade can be manually raised and lowered and set in a position at a desired height. The screens and slat pockets are flexible so that they will roll up on roller 64 as the shade is lowered in the window frame as indicated in Fig. 12.

Each of the pockets 35 may contain a flexible slat. The slat is formed by two layers 78 stitched or heat-sealed together at opposite edges 82 to provide an open-ended chamber in which can be placed an insert 84. Layers 78 may be formed of colored plastic material and the insert 84 may be a piece of plastic mesh or differently colored plastic or even several pieces of differently colored plastic secured together to produce different colored effects when the insert is placed in the slat and the slat is disposed in the slat pocket. Each slat pocket 35 has open ends so that the slat can be easily inserted and removed.

The slat may be formed as shown in Fig. 13 with heat-sealed edges 82 and having a compartment 83 between the layers 78 to receive insert 84. This insert can be formed as a laminated structure with two layers 84^a, 84^b, or with a ribbed or perforated structure. As shown in Fig. 14, the slat has edges 82 stitched together at 85 and the slat compartment contains a perforated plastic mesh insert 84^c.

There has thus been provided, according to the invention, a window shade formed with two spaced flexible plastic mesh screens which support a plurality of slat pockets. The screens are tensioned by a spring roller so that they hang smoothly from a supporting plate. The plate and pockets are tiltable by means of a spring catch mechanism manually settable to any desired angular position. The tilting mechanism is supported on carriage members which ride on vertical rails and which are provided with further spring catch members for adjusting and fixing the height of the shade. The shade rolls up on the roller as it is lowered and unrolls from the roller as the shade is lengthened. The entire shade structure is made of flexible, plastic material. The slats are removably carried in slat pockets. The slats themselves have a laminated structure adapted to receive colored inserts of single or plural layer structure.

While I have illustrated and described the preferred embodiments of my invention, it is to be understood that I do not limit myself to the precise constructions herein disclosed and that various changes and modifications may be made within the scope of the invention as defined in the appended claims.

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

1. A window shade, comprising a pair of plastic mesh screens, a plurality of pockets each formed by two layers of plastic material secured in spaced positions between the screens, a slat removably disposed in each of said pockets, means for supporting the screens in flat, spaced tensioned positions in a window frame, means for tiltably adjusting said pockets, said supporting means comprising a pair of rails mountable vertically in said window frame, a pair of sleeves movably supported on the respective rails, and spring catch means for engaging and holding the sleeves on the rails at selected positions thereon.

2. A window shade, comprising a pair of plastic mesh screens, a plurality of pockets each formed by two layers of plastic material secured in spaced positions between the screens, a slat removably disposed in each of said pockets, means for supporting the screens in flat, spaced tensioned positions in a window frame, means for tiltably adjusting said pockets, said supporting means comprising a pair of rails mountable vertically in said window frame, a pair of sleeves movably supported on the respective rails, and spring catch means for engaging and holding the sleeves on the rails at selected positions thereon, said supporting means further comprising a spring tensioned roller rotatably supported by said rails and secured to one end of the screens.

3. A window shade, comprising a pair of plastic mesh screens, a plurality of pockets each formed by two layers of plastic material secured in spaced positions between the screens, a slat removably disposed in each of said pockets, means for supporting the screens in flat, spaced tensioned positions in a window frame, means for tiltably adjusting said pockets, said supporting means comprising a pair of rails mountable vertically in said window frame, a pair of sleeves movably supported on the respective rails, and spring catch means for engaging and holding the sleeves on the rails at selected positions thereon, said tilting means comprising a plate pivotally carried on at least one of said sleeves, said plate having spring catch means for engaging said sleeve at certain points thereon.

4. A window shade, comprising a pair of plastic mesh screens, a plurality of pockets each formed by two layers of plastic material secured in spaced positions between the screens, a slat removably disposed in each of said pockets, means for supporting the screens in flat, spaced tensioned positions in a window frame, means for tiltably adjusting said pockets, said supporting means comprising a pair of rails mountable vertically in said window frame, a rectangular plate engaged with the uppermost one of said pockets, a pair of disks engaged with said plate, a shaft tiltably carrying said plate and disks, a pair of sleeves supporting said shaft, said sleeves being movably supported on the respective rails, and spring catch means for engaging and holding the sleeves on the rails at selected positions thereon.

5. A window shade, comprising a pair of plastic mesh screens, a plurality of pockets each formed by two layers of plastic material secured in spaced positions between the screens, a slat removably disposed in each of said pockets, means for supporting the screens in flat, spaced tensioned positions in a window frame, means for tiltably adjusting said pockets, said supporting means comprising a pair of rails mountable vertically in said window frame, a rectangular plate engaged with the uppermost one of said pockets, a pair of disks engaged with said plate, a shaft tiltably carrying said plate and disks, a pair of sleeves supporting said shaft, said sleeves being movably supported on the respective rails, and spring catch means for engaging and holding the sleeves on the rails at selected positions thereon, said tilting means including said disks and further catch means carried by said disks for selectively engaging said sleeves at certain circumferentially spaced points thereon.

6. A window shade, comprising a pair of plastic mesh screens, a plurality of pockets each formed by two layers of plastic material secured in spaced positions between the screens, a slat removably disposed in each of said pockets, means for supporting the screens in flat, spaced tensioned positions in a window frame, means for tiltably adjusting said pockets, said supporting means comprising a pair of rails mountable vertically in said window frame, a rectangular plate engaged with the uppermost one of said pockets, a pair of disks engaged with said plate, a shaft tiltably carrying said plate and disks, a pair of sleeves supporting said shaft, said sleeves being movably supported on the respective rails, and spring catch means for engaging and holding the sleeves on the rails at selected positions thereon, said tilting means including said disks and further catch means carried by said disks for selectively engaging said sleeves at certain circumferentially spaced points thereon, said disks each having a handle to facilitate turning and tilting of the disk and plate to adjustably tilt the pockets, said supporting means

further comprising a spring tensioned roller rotatably supported by said rails and secured to one end of the screens.

7. A window shade, comprising a pair of plastic mesh screens, a plurality of pockets each formed by two layers of plastic material secured in spaced positions between the screens, a slat removably disposed in each of said pockets, means for supporting the screens in flat, spaced tensioned positions in a window frame, means for tiltably adjusting said pockets, said supporting means comprising a pair of rails mountable vertically in said window frame, a rectangular plate engaged with the uppermost one of said pockets, a pair of disks engaged with said plate, a shaft tiltably carrying said plate and disks, a pair of sleeves supporting said shaft, said sleeves being movably supported on the respective rails, spring catch means for engaging and holding the sleeves on the rails at selected

positions thereon, said tilting means including said disks and further catch means carried by said disks for selectively engaging said sleeves at certain circumferentially spaced points thereon, said disks each having a handle to facilitate turning and tilting of the disk and plate to adjustably tilt the pockets, said supporting means further comprising a spring tensioned roller rotatably supported by said rails and secured to one end of the screens, said slats comprising two superimposed sheets formed of transparent plastic material and having a compartment defined therebetween, and colored plastic inserts removably disposed in the compartments.

References Cited in the file of this patent

UNITED STATES PATENTS

1,937,342	Higbie	Nov. 28, 1933
2,865,446	Cole	Dec. 23, 1958