Oct. 9, 1951 S. SPIEGEL 2,570,608

VENETIAN BLIND

Filed July 14, 1947 2 Sheets-Sheet 1

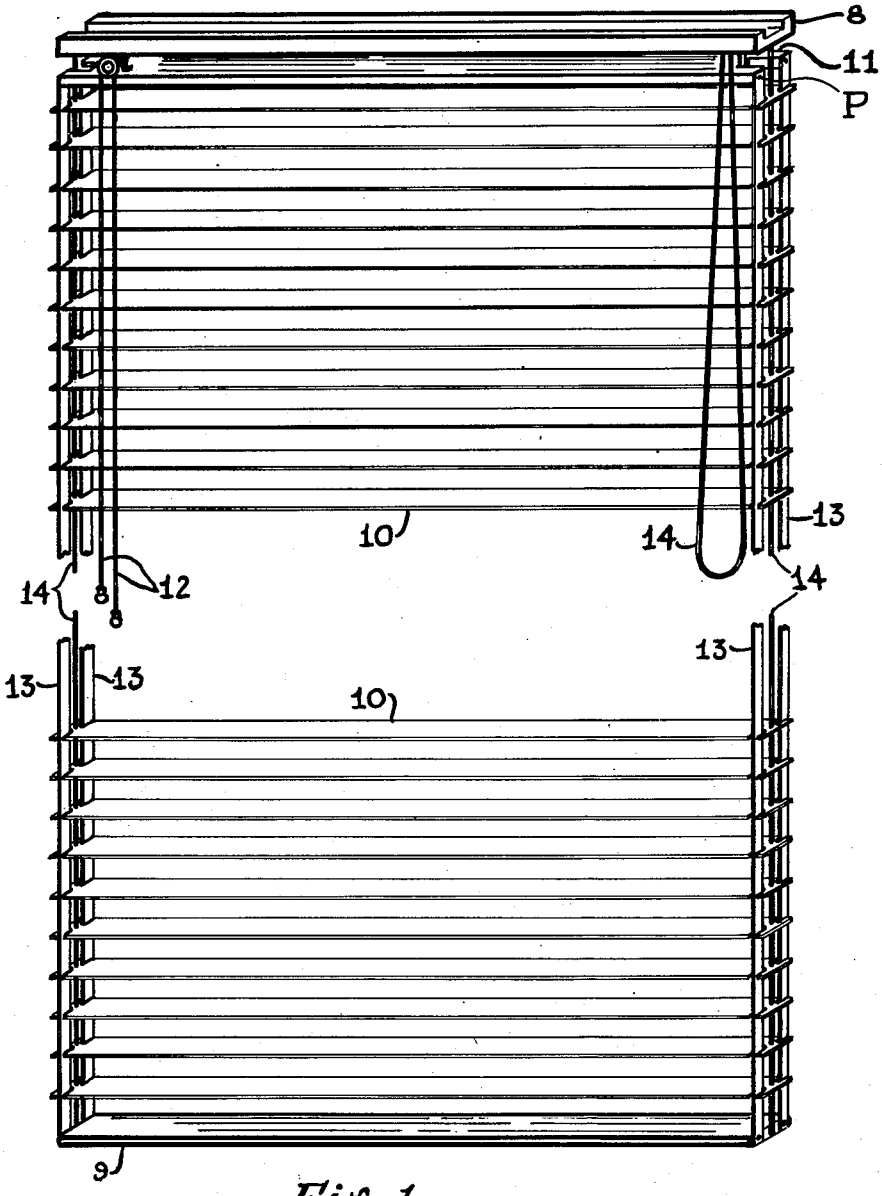


Fig. 1.

INVENTOR.
Stanley Spiegel
BY
David P. Moore

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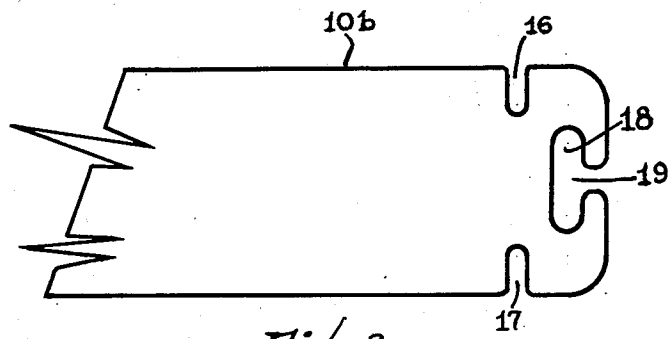


Fig. 3.

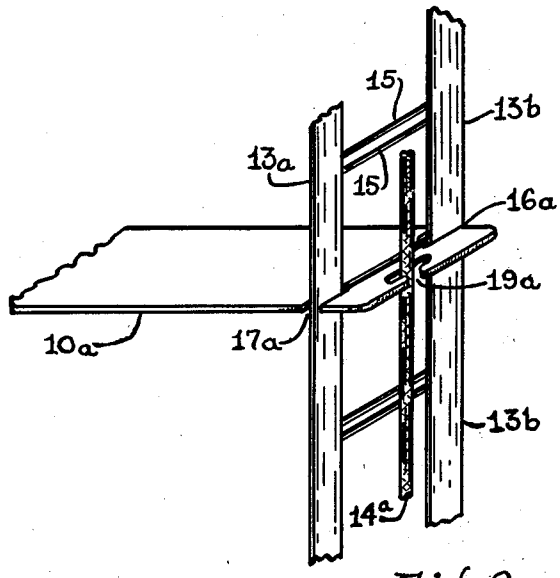


Fig. 2.

INVENTOR.
STANLEY SPIEGEL
BY
David P. Moore

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VENETIAN BLIND

Stanley Spiegel, New York, N. Y., assignor of one-half to Electronic Systems Corporation, a corporation of New York

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3 Claims. (Cl. 160—178)

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The present invention relates to novel and improved types of Venetian blinds.

The present type of Venetian blind consists of slats horizontally positioned by means of horizontal ladders suspended between two vertical tapes. These tapes are usually located approximately one-third in from each end of the Venetian blind. Due to the position of these tapes, the dirt that collects upon them soon causes them to become very unsightly, and necessitates their periodic replacement. The location of the tapes further obstructs vision, and diminishes the amount of incoming light when the Venetian blind is in an open position. Again, due to the positioning of the tapes, the dust that accumulates upon the slats is difficult to remove, due to the multiplicity of operation required in using the cleaning instrument, since the cleaning instrument must be removed and reinserted at each tape interval. The disadvantages of the conventional Venetian blind are the unsightly dirty tapes, the difficulty in cleaning the slats, the obstructed vision, and the diminished amount of incoming light.

One of the principal objects of the present invention is to do away with the presence of tapes in front of the blind facing the viewer. Another object of the present invention is to practically conceal the tapes from view. Still another object of the present invention is to permit a relatively unobstructed view when the Venetian blind is open, and at the same time admitting more light. Still another object of the present invention is to permit an uninterrupted sweep across the entire length of the slat by the cleaning instrument, since there are no intervening tapes. One of the reasons for the advantages of the present invention is that the supporting, raising, elevating, tilting elements are at the ends, and not in front of the slats as is usual.

A further object of the present invention is provision for a type of slat that permits greater length without the need for additional supporting means that would be required in the present conventional Venetian blind.

Still another object of the present invention is the provision of slat-tilting means which are attached to the ends of the tilting rail and to the bottom rail, and wherein the slats are contiguous to the vertical tape either at the ends or adjacent to the ends.

Further objects will appear in the following more detailed specifications, in which,

Figure 1 is a perspective view of a Venetian blind in extended position with the middle portion broken away of a blind made according to and embodying the present invention.

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Figure 2 is an enlarged perspective view of the improved type of slat, the flexible members comprised of two vertical tapes and flexible rungs, and the raising and lowering cord.

Figure 3 shows a partial view of an improved form of slat.

An overall view of one form of an improved type of Venetian blind is illustrated in Figure 1. The head rail 8, the bottom rail 9, the slats 10, the tilting rail 11, the tilting cord 12, the tape 13, the raising and lowering cord 14, serve approximately the same purpose as in a conventional Venetian blind.

A detailed structural view of an improved type of slat 10*a*, the flexible members comprised of two vertical tapes 13*a* and 13*b* and flexible rungs 15, the raising and lowering cord 14*a*, is shown in Figure 2. The slat 10*a*, which will be later described in more detail in connection with Figure 3 is supported by the rungs 15. These rungs 15, in addition to supporting and spacing the various slats, also assist in imparting the tilting motion to the slats when the tilting rail 11 of Figure 1 is actuated and also hold the slats against longitudinal slipping.

In Figure 3 there is shown a partial view of the end of a slat 10*b*, which is to be used in conjunction with the improved form of the Venetian blind shown in Figure 1. As can be seen from Figure 3 the slat 10*b* has two oppositely disposed slots 16 and 17. These slots 16 and 17 are located as close to the ends of the slat 10*b* as is structurally feasible. These slots 16 and 17 serve to position and guide the flexible members, as is shown in Figure 2. The aperture 18 functions to position and guide the raising and lowering cord 14. The aperture 18 is shown as having an opening 19 to the end of the slat 10*b*, in order to facilitate the insertion of the raising and lowering cord 14 in the process of manufacturing assembly as well as facilitating replacement if this becomes necessary. The combined aperture 18 and opening 19 form a modified T. It lies within the scope of the present invention, however, to eliminate this opening 19, should that be desirable.

It should be noted in this type of fastening that the flexible tapes 13 are not rigidly fastened to the tilting rail 11, but are secured in such a manner that the flexible tapes 13 are allowed to pivot as the tilting rail 11 rotates about its horizontal axis. For example, when the tilting rail 11 is caused to rotate in a clockwise direction, the flexible tapes 13 will remain in a ver-

tical position, and there will be no tendency for the tapes to wrinkle. Now, if the flexible tapes 13 were rigidly fastened to the tilting rail 11, then, as the tilting rail 11 was rotated about the horizontal axis, the angle between the tilting rail and the flexible tapes 13 would always remain the same. This would cause distortion in the entire Venetian blind, in addition to making the entire assembly unworkable. One of the principles which make the operation of the improved Venetian blind feasible is that the flexible tapes 13 are secured to the tilting rail in such a manner that the angle made by the intersection of the tapes 13 and the tilting rail 11 changes as the tilting rail 11 rotates about its horizontal axis. In the case shown in Figure 1, this is accomplished by the pivoting pin P, which allows the flexible members to rotate freely. The principle described above applies also to the bottom rail. In the present improved form of Venetian blind, it will be seen that the flexible tapes 13 are fastened to the tilting rail 11 in such a manner as to allow them to pivot freely as the tilting rail 11 rotates about its horizontal axis. As the tilting rail 11 rotates, it alternately raises one of the flexible tapes and lowers the other flexible tape. This imparts a tilting motion to the slats 10 which are securely resting on the flexible tapes 13 by means of the rung 15.

From the foregoing description, taken in connection with the drawings it is evident that the usual exposed tapes now in use are made practically invisible, and that a new type of flexible support is provided, which permits full vision between the slats when the blind is in an extended open position, admits more light when the blind is in said position, and further allows an uninterrupted sweep of the cleaning instrument when cleaning the slats. It also provides a new tilting means, and methods of performing same.

What is claimed is:

1. A Venetian blind, including in combination a head rail, a bottom rail, a second rail tiltingly attached to and supported by the head rail, two pairs of narrow flexible tapes, the upper ends of each pair of which are attached to the respective ends of the tilting rail with the flat portions of the tapes aligned but spaced apart, a bottom rail the ends of which are connected to the lower ends of the respective pairs of tapes, whereby the tilting rail supports the bottom rail, a plurality of flexible rungs carried by each pair of tapes, each rung comprising two spaced strands, a plurality of slats parallel to the tilting rail and forming the blind between the tilting and bottom rail, each slat having at each end two aligned transversely disposed slots into which the respective tapes fit to permit the slats to slide thereon while the two strands forming each rung fit upon the top and bottom sides of the slats to hold the slat relatively to the tape, and whereby as the tilting rail is tilted all of the slats are correspondingly tilted, and a raising and lowering cord having its ends anchored to the respective ends of the bottom rail and reeved through the head rail.

2. A Venetian blind, including in combination a head rail, a bottom rail, a second rail tiltingly supported by the head rail, two pairs of flexible tapes having their upper ends connected to the tilting rail so that the flat portions of the bodies thereof are in line and spaced apart, a bottom rail supported from said tapes, a plurality of pairs of flexible strands, bridging and connected to said pairs of tapes, a plurality of slats, each of which is provided at each end with two aligned recesses opening through the edges of the slat and forming receptacles for the respective tapes, the ends of the slats being embraced by the two strands forming each rung to hold the slat at each end against displacement, and a raising and lowering cord having two free ends connected to the bottom rail and the body portion reeved through the head rail, whereby the blind can be contracted or extended.

3. A Venetian blind as claimed in claim 2, wherein a modified T-shaped opening is provided in each extreme outer edge at the end of each slat and into which the raising and lowering cord is held and guided.

STANLEY SPIEGEL.

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