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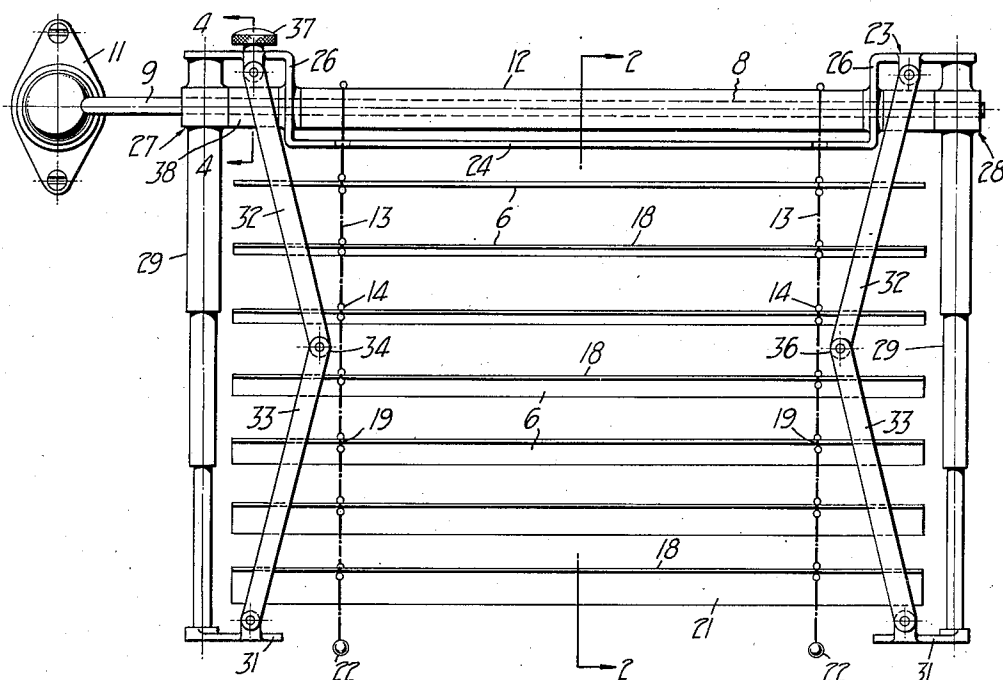
P. O. SOLON

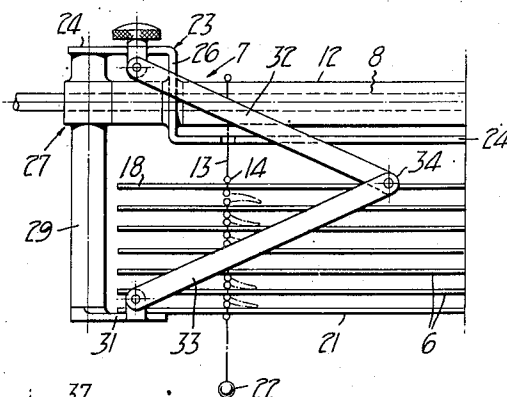
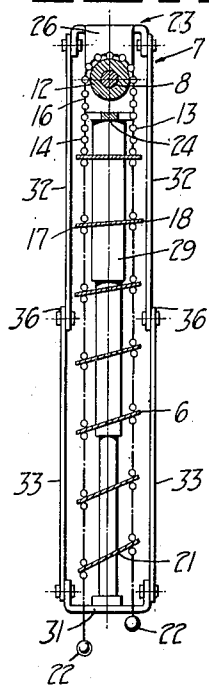
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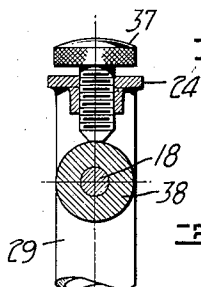
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BLIND

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FIG. 5

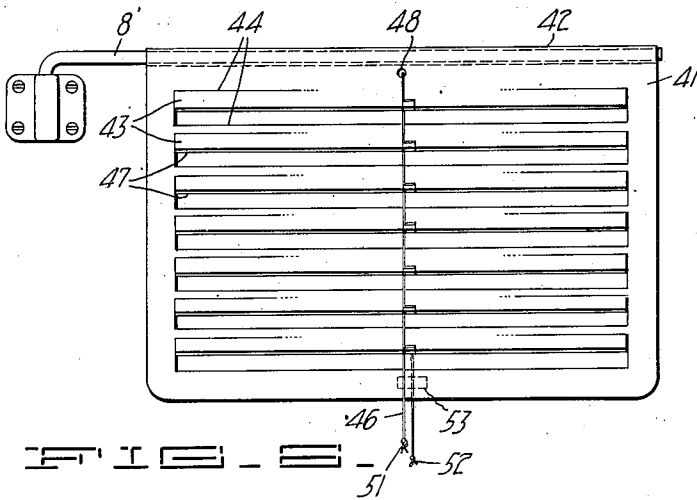
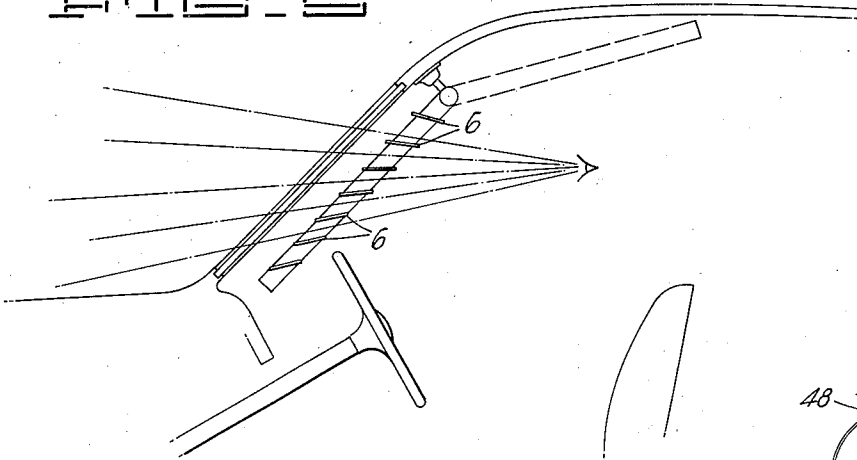


FIG. 6

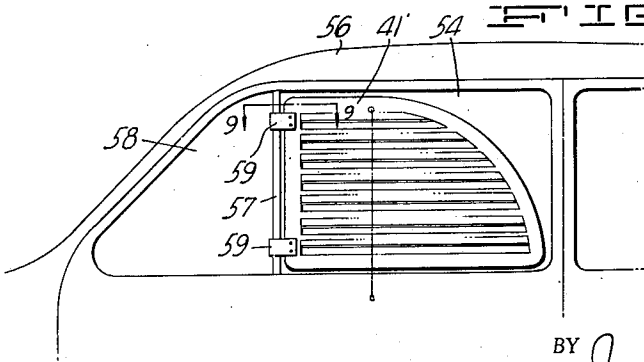


FIG. 7

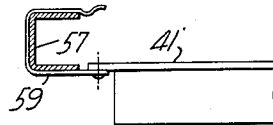
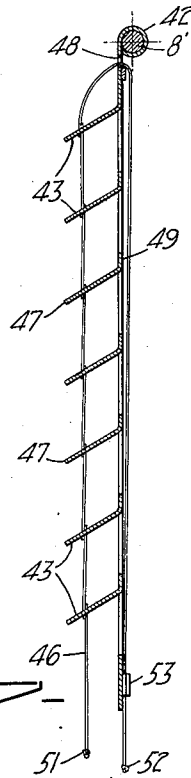


FIG. 9

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UNITED STATES PATENT OFFICE

2,213,021

BLIND

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Application August 3, 1937, Serial No. 157,155

9 Claims. (Cl. 156—17)

The invention relates to blinds, and more particularly to so-called "Venetian" blinds.

An object of the invention is to provide a blind of the character described which is particularly designed and constructed for use in the interior of an automobile or other vehicle for shielding the eyes of the operator or passengers from direct and reflected sunlight. A particularly important feature of the present blind is its substantial universality of use and positioning within the vehicle, being movable to positions at the front and side of the vehicle compartment and to a position against the under side of the top of the vehicle when not in use. Also, when the blind is used at the side of the operator's compartment, the same is arranged for ready lifting by the operator for the outward extension of his arm as in signaling and the like.

A further object of the invention is to provide a blind of the character described which may be simply and readily installed in the interior of a vehicle and which may be simply and quickly adjusted by the user, and is not subject to derangement by the wind or other air disturbances within the vehicle body.

Still a further object of the invention is to provide a blind of the character described which is formed of a plurality of slats of a transparent, light-filtering material which is operative to remove the intense and deleterious rays and glare of direct sunlight and yet permit visibility, and to further control the light intensity by controlling the angle of the planes of the slats to affect the angle of light incidence and reflection.

The invention possesses other objects and features of advantage, some of which, with the foregoing, will be set forth in the following description of the preferred form of the invention which is illustrated in the drawings accompanying and forming part of the specification. It is to be understood, however, that variations in the showing may be adopted within the scope of the invention as set forth in the claims.

Referring to the drawings:

Figure 1 is a front elevation of a blind constructed in accordance with the present invention.

Figure 2 is a transverse vertical sectional view of the blind and is taken substantially on the plane of line 2—2 of Figure 1.

Figure 3 is a fragmentary front elevation of the blind in contracted position.

Figure 4 is a fragmentary cross sectional view showing a part of the adjusting mechanism and

is taken substantially on the plane of line 4—4 of Figure 1.

Figure 5 is a side elevation showing the blind operatively positioned in the interior of an automotive vehicle.

Figure 6 is a front elevation of a modified form of the blind.

Figure 7 is a vertical cross sectional view of the blind illustrated in Figure 6.

Figure 8 is a front elevation of a further modified form of the invention.

Figure 9 is a fragmentary sectional view showing the attachment of the blind to a part of the automotive vehicle and is taken substantially on the plane of line 9—9 of Figure 8.

The blind of the present invention, and as illustrated in the form of the invention disclosed in Figures 1 to 5 of the accompanying drawings, is of a so-called "Venetian" type, having a plurality of slats 6 which are arranged in a generally horizontal superimposed relation for controlling the passage of light through the blind. The blind also includes a head support 7 from which the slats are suspended and is in turn arranged for mounting at the interior of a vehicle or the like for supporting the blind in proper position. The support 7 is formed in part by an elongated member 8 here shown in the form of a shaft and which is preferably secured adjacent one end 9 for substantially universal movement of the shaft. Any suitable means may be used for effecting such securement, such as the mounting bracket 11 here shown providing a ball and socket engagement for the end of the shaft 8. However, as will be understood, other types of connection may be used, the principal requirement being the provision of a variety of movement of the support and sufficient friction or other positive means for holding the support in adjusted position. Where the device is installed in an automotive vehicle the bracket 11 may be placed at the forward left side of the interior of the vehicle so that the head support of the blind may be swung to a position in front of the windshield or to the side in front of the door window or, as will be further noted, upwardly against the under side of the top.

Rotatably mounted on the shaft 8 is a roller 12 from which the slats 6 are supported by a flexible means 13, such as a cord or the like. In the present blind the means 13 consists of a ball and chain construction including a plurality of balls 14 connected and spaced by a plurality of links 16, the chain thus formed being carried over and secured to the roller 12 and having op-

posed depending portions engaging the opposite side portions 17 and 18 of the slats at both ends of the blind. The connection of the chain with the slats may be simply effected as here shown by forming a plurality of slits 19 in the side edges of the blind opposite the chain 13 and wedging the chain into such slits at one of the links 16 to space the slat between a pair of opposed balls 14 of the chain. In this manner the slats are suspended from the head support in a generally horizontal superimposed position with the slats spaced one above the other to define a column of slats, and the slats are supported in a manner providing a simultaneous change of the angularity of their planes upon rotation of the roller 12 on the shaft 8. In this manner the slats may be supported in a horizontal plane or tilted either in a clockwise or counter-clockwise direction from horizontal position. Where the blind is used at the interior of an automotive vehicle for shielding the operator's eyes from the sun I have found that a maximum visibility through the blind may be effected by using a successive degree of incline or angle of the slats from the top to the bottom of the blind. Normally the operator's eyes will be positioned opposite the upper half of the blind and I prefer to change the angularity of the slats to increase the pitch toward the bottom of the blind to more nearly coincide with the downwardly inclined line of sight through this portion of the blind as illustrated in Figure 5.

Preferably the chains 13 are extended below the lowermost slat 21 so as to provide engageable free ends 22 of the chains for ready grasping by the user for changing the incline of the slats.

As an important feature of the present invention, means is provided for supporting the slats 6 in various inclined positions of the slat column from a forwardly inclined position adjacent the windshield of the vehicle to a horizontal position against the under side of the top. Such means is here provided in the form of a frame 23 which is adapted to engage the opposite sides of the slats adjacent the ends of the blind and is movable relative to the head support to displace the slats from a normally vertical column which they assume by reason of the flexible suspensions provided by the chains 13. In the present form of the invention the frame is pivotally mounted on the head support so as to provide for the rotation of the slat column around the head member as an axis, although, as will be understood, the frame may be pivoted or otherwise mounted adjacent the head support if desired. Preferably also the frame is arranged for contraction and extension toward and from the head support so as to control the relative size of the blind. More specifically, the frame in the present showing consists of a top side 24 which extends longitudinally of the head support and is provided adjacent the ends of the blind with transversely offset portions 26 which are journaled on the shaft 8 at the opposite ends of the roller 12. The ends 27 and 28 of the frame are each formed of telescopic sections 29 secured at one end to the frame side 24 and having an offset portion 31 at the other extremity for engaging with the lowermost slat 21 on contraction of the ends to draw the slats into a compacted assembly. Pivoted to the lower portion 31 of the ends and to the top side 24 of the frame at both the front and back sides of the blind and at both of the longitudinal ends thereof are a pair of links 32 and 33 which are extended from the frame portion 31 and side 24 into opposed overlying relation with respect

to the opposite sides 17 and 18 of the slats and are pivoted at their adjacent inner ends 34 and 36 to confine the vertical side edges of the slat column. In this manner the sides of the frame defined by the links 32 and 33 securely hold the opposite side edges 17 and 18 of the slat to maintain the slat column in all angular positions and against derangement by wind or other air currents. It will be noted that on rotation of the slat column about the head support by movement of the frame a change in angularity of the individual slats is effected by reason of the lengthening and shortening of the chain sides due to the rotation of the chain about the roller 12. In this manner minor variations at least may be made in the angularity of the slats by causing a slight displacement of the frame about the head member.

Means is provided for holding the frame 23 in adjusted position both angularly and longitudinally with respect to the shaft 8 and as here shown such means is provided in a set screw 37 which is threaded through the frame side 24 and is arranged to bear against the outer side of a small cylinder 38 carried on the shaft 8 for frictionally holding the frame against movement relative to the shaft.

As a further important feature of the present invention I form the slats 6 out of a transparent light-filtering material so as to at all times provide for a maximum amount of visibility through the blind regardless of the momentary positioning of the slats prior to final adjustment, and to produce an improved comfort to the eyes of the user. Preferably the light filtration is effected by the use of a soft color filter such as green or blue, and the material itself is preferably formed of a clear substance having relatively high polished surfaces such as glass or special compounded material such as "cellophane," isinglass and the like. One important feature in the use of such a material is the decreased light transmission with a decreased angle of light incidence. Thus with the slats at substantially right angles to the line of vision they provide relatively good visibility, but when tilted or inclined with respect to the line of vision they reflect and refract a greater portion of incident light away from rather than to the eyes.

A modified form of the invention has been illustrated in Figures 6 and 7 of the drawings wherein the blind is formed in its entirety from a single blank or sheet 41 of flexible material such as paper or cardboard or metal or the like. The sheet is formed with a transverse hem or passage portion 42 across the top thereof for receipt of the supporting shaft 8' to permit longitudinal movement along as well as rotational movement about the shaft. The blank is provided with a plurality of transversely spaced, longitudinally extending portions 43 which are defined by scored lines 44 to facilitate pressing out of these portions from the body of the blank as illustrated in Figure 7 to provide a plurality of vertically spaced, transversely extending inclined slats of a "Venetian" type blind. The angularity of these slat portions 43 is controlled by means of a string 46 which is secured to the lower free edge 47 of each of the portions 43 and is extended through an opening 48 in the top of the blank and along the inner side 49 of the blank so as to dispose the free ends 51 and 52 at the bottom of the blank at the inner and outer sides thereof for grasping by the user for tilting the slat portions. Preferably a frictional means 53 is pro-

vided at the inner side of the blank in the form of a strap for clamping the cord against such side for holding the cord in adjusted position of the slats.

5 In the form of the invention illustrated in Figures 8 and 9 the form of the blind described in Figures 6 and 7 has been especially adapted for use in covering the front side windows 54 of an automotive vehicle 56. In the present arrangement the blank 41' is shaped to fit within the frame of a window of the type having a vertical strut or supporting member 57 for a forward auxiliary window pane 58. The attachment of the blank to the supporting member 57 is effected by means of a pair of clips 59 which are riveted or otherwise secured to a forward edge of the blank 41' and which are arranged to surround and clamp against the member 57.

I claim:

20 1. A blind comprising, a plurality of slats, a head member, flexible means connected to said head member and slats for suspending the latter in a column from said head member, a frame movable relative to said head member and engageable with the sides of said slats for supporting said slats in various angles of said column, said head member and said means being operative to change the angle of said slats relative to said frame.

30 2. A blind comprising, a plurality of slats, a head member, flexible means connected to said head member and slats for suspending the latter in a column from said head member, and a frame pivoted on said head member and engageable with said slats for lifting the same toward said head member and extending to the sides of said slats for supporting said slats in various angles of said column.

40 3. A blind adapted for mounting on a vehicle for shielding the operator's eyes from the sun comprising, a bracket adapted for mounting at the interior of the vehicle, an elongated supporting member universally mounted on said bracket, a plurality of slats, flexible means for suspending said slats in a column from said member, and a frame pivotally mounted on said member and engageable with the sides of said slats for supporting said slats in various angles of said column, said member being rotatable relative to said frame to shift the angle of said slats.

50 4. A blind comprising, an elongated supporting member, a frame pivoted on and radially extending from said member, a plurality of slats mounted in said frame for movement to and from said member, and means for suspending said slats from said member in spaced superimposed position, and being adapted upon rotation of said

member relative to said frame to shift the angle of said slats.

5 5. A blind comprising, an elongated supporting member, a plurality of slats, means for supporting said slats in a superimposed column from said member, and a frame movable relative to said member and engageable with the sides of said slats for supporting said slats in various inclined positions of said column, said frame being extendable and contractable from and toward said member.

6. A blind comprising, an elongated supporting member, a plurality of slats, means for supporting said slats in a superimposed column from said member, a frame movable relative to said member and engageable with the sides of said slats for supporting said slats in various inclined positions of said column, and means on said frame for engaging the outer side of the most distant slat from said member, said frame being extendable and contractable from and toward said member to control the size of said column.

7. A blind comprising, a supporting shaft, a member journaled on said shaft and slidable longitudinally thereon, a plurality of slats, flexible means for suspending said slats in a superimposed column from said member and for changing the angle of the plane of said slats upon rotation of said member relative to said shaft, and a frame pivoted to said shaft and engageable with the sides of said slats for supporting said slats in various angular positions of said column.

8. A blind comprising, an elongated supporting member, a plurality of slats, flexible means for supporting said slats in a column from said member, a frame mounted on said member and consisting of end portions positioned adjacent to the ends of said slats and including a plurality of telescopically connected sections for contraction and extension of said end portions to and from said member, and a pair of links pivoted at their ends to each of said frame end portions and pivoted at their opposite ends in an overlying relation to the sides of said slats for supporting said slats in an inclined position of said column.

9. A blind comprising, a plurality of slats, a head member, flexible means connected to said head member and slats for suspending the latter in a column from said head member, and means engageable with said slats to lift the same towards said head member, said last named means being engageable with the sides of said slats for supporting said slats in various angles of said column and at various positions of said slats relative to said head member.

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