(No Model.)

M. S. SIMMONS & C. ANGUS.

VENETIAN BLIND.

No. 455,912. Patented July 14, 1891.

Fig. 1.

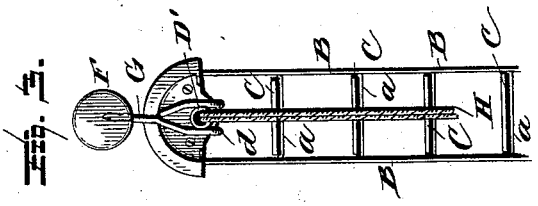


Fig. 5.

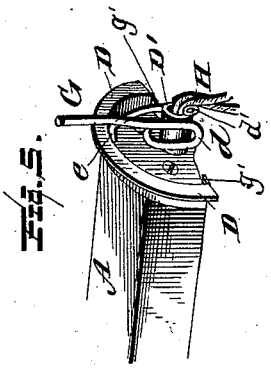


Fig. 3.

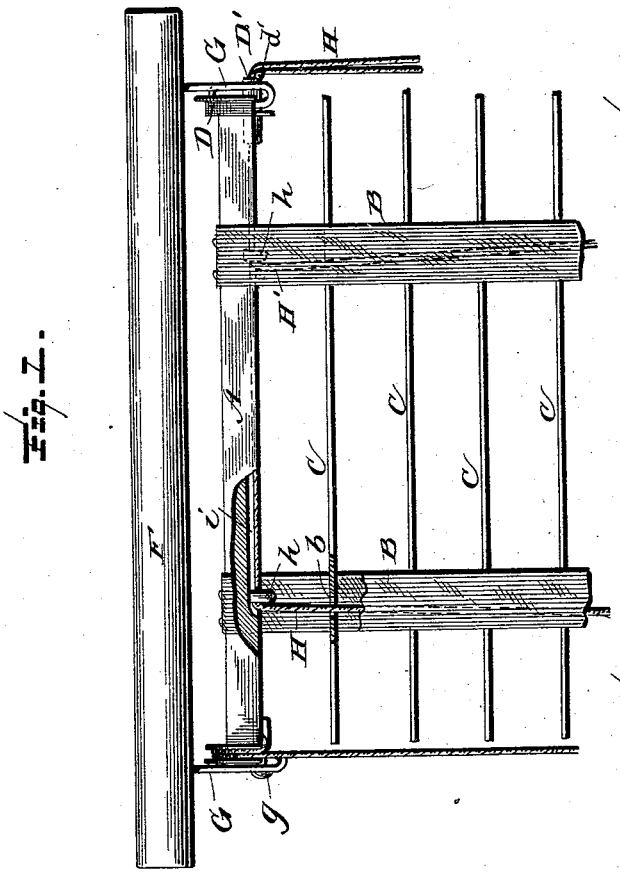


Fig. 4.

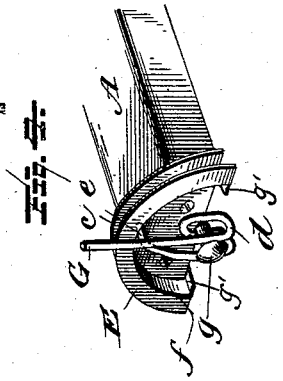
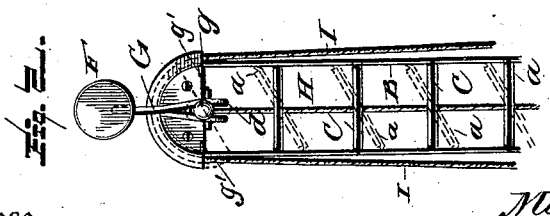


Fig. 2.



Witnesses
L. C. Mills.
E. A. Bond.

Inventors
Marcus S. Simmons
and Charles Angus.
E. B. Stocking
Attorney

UNITED STATES PATENT OFFICE.

MARCUS S. SIMMONS AND CHARLES ANGUS, OF ALBANY, NEW YORK, ASSIGNORS OF ONE-THIRD TO JOSEPH R. NANGLE, OF SAME PLACE.

VENETIAN BLIND.

SPECIFICATION forming part of Letters Patent No. 455,912, dated July 14, 1891.

Application filed August 27, 1890. Serial No. 363,207. (No model.)

To all whom it may concern:

Be it known that we, MARCUS S. SIMMONS and CHARLES ANGUS, citizens of the United States, residing at Albany, in the county of Albany, State of New York, have invented certain new and useful Improvements in Venetian Blinds, of which the following is a specification, reference being had therein to the accompanying drawings.

This invention relates to certain new and useful improvements in Venetian blinds, and more particularly to the means for suspending the same and for raising and lowering or opening or closing the slats and for changing their angle.

We have devised means for suspending the head at the edge or circumference, providing a supporting-bearing which will always be at the circumference instead of at the center of the head, thereby causing the point of suspension to be always identical and in line with the center of rotation, and thus avoiding the tendency to pull the slats open. We provide at one end a tube through which we pass the cord employed for raising or closing the slats. This tube passes through the suspending-hangers and causes the center of the head to remain fixed and bears no weight.

By our method we avoid the angle heretofore made by going through the head, no matter what position the head may assume. We suspend the head from hangers which have an amount of resiliency to cause friction sufficient to keep the slats from turning too easily when it is desired to regulate them to just the amount of light admitted to the room.

Other objects and advantages of the invention will hereinafter appear, and the novel features thereof will be particularly pointed out in the appended claims.

The invention is clearly illustrated in the accompanying drawings, which, with the letters of reference marked thereon, form a part of this specification, and in which—

Figure 1 is a front view showing a portion of a blind with portions broken away. Fig. 2 is an end view of the same. Fig. 3 is a view looking at the opposite end. Fig. 4 is an enlarged perspective detail showing the suspension means employed at one end. Fig. 5 is a like view of the means employed at the other end, and showing also the tube through which the hoisting-cord passes.

Like letters of reference indicate like parts throughout the several views.

Referring now to the details of the drawings by letter, A designates the head, which in this instance is shown as rectangular in cross-section, and to which the tapes B are attached in any suitable manner, and which support the slats C in any desirable manner, being shown in this instance as supported by the cross-tapes *a*, connected to and arranged between each pair of tapes B, the said slats being provided with apertures or slots *b*, through which the hoisting-cords pass. To one end of this head we secure the flanged end piece D, which is provided with a tube D′, extending beyond the face thereof, as seen in Figs. 1 and 5. Upon the other end of the head we secure the flanged end piece E, which has in its upper edge a groove *c*. These pieces may be secured to the head in any convenient manner—as, for instance, by screws, as shown.

F is a support-representing the top casing, and to which are fixed the hangers G, preferably of wire, with one end secured in said support and then bent into the form of a double loop *d*, as seen best in Figs. 2 and 4, and the other end then bent upward and inward horizontally, as shown at *e*, and bearing upon the under face of the semicircular flange of the piece upon the head. The loop of the hanger embraces the tube D′ at one end and a projection at the other end, which may be a tube similar to D′, or a pin or other provision, as *g*, as seen in Figs. 2 and 4. It will be seen that by this construction the bearing is always at the circumference of the end pieces and there is no tendency on the part of the weight to open the blind. The tubes or the pin at the ends of the head are not required to sustain any weight.

In order to raise the blind, we provide the cord or ropes H and H′, or a single rope, the ends affixed to the bottom slat of the blind and passed through the slots in the slats, preferably between the tapes B, where they are hidden from view, and the two cords, or the two portions of one cord, after passing

through suitable guides *h* on the under side of the head and through a longitudinal channel *i* made therefor in the under side of the head, pass through the tube D′ and extend to within convenient reach from the floor.

In order to tilt or change the inclination of the slats when desired, we provide the cord I, the ends of which are passed in opposite directions through the groove *c* of the end piece E and attached thereto or to opposite sides of the head A upon the under side thereof, so that by pulling upon one strand or the other of said cord the head is moved on the hangers more or less out of a horizontal plane, as indicated by dotted lines in Fig. 2 and as will be readily understood.

The end pieces are provided with inwardly-extending lips or clips *g′*, as seen best in Fig. 4, which serves to prevent the head turning too far off the bearings.

We sometimes provide a sheave *d′*, as seen best in Fig. 5, at the end of the tube, and over which the hoisting-cord passes, to facilitate the raising of the blind and lessen the friction at this point.

The hangers have a sufficient amount of spring to cause enough friction to prevent the slats from turning too easily.

It will be observed that there is frictional contact of the hangers G with the pins *g*, and that there is also sufficient friction created at *e* to prevent the bar A from falling suddenly to one side, so as to thus throw the preponderance of the weight to one side. We are thus enabled to secure neutral equilibrium.

Various modifications in details may be resorted to without departing from the spirit of or detracting from the merits of the invention.

What we claim as new is—

1. In a Venetian blind, a head supporting the slats, combined with plates on the ends of the head and hangers bearing at all times on the periphery of the plates and supporting the blinds, with the point of suspension at all times in line with the line of rotation, substantially as specified.

2. In a Venetian blind, a head carrying the slats, combined with end plates on the ends of the head, and hangers, each having a portion *e* substantially at a right angle to the perpendicular and bearing against the periphery of and supporting the end plates and having portions *d*, on which the plates move in the arc of a circle, substantially as described.

3. In a Venetian blind, the head carrying the slats, combined with end plates on the ends of the head and having portions projecting from their centers, and hangers embracing said projections and each having a a portion *e* substantially at a right angle to the perpendicular and bearing upon the periphery of the plates, as and for the purpose specified.

4. As an improved article of manufacture, a substantially semicircular end plate, for the purpose described, formed with a correspondingly-shaped flange and a centrally-projecting tube and inwardly-projecting stops, as set forth.

5. A Venetian blind, combined with a hanger having at all times a bearing thereon at a point remote from the center on which the head of the blind turns and at all times in line with the center of rotation, as set forth.

6. The combination, with the head and the slats supported thereon by flexible connection, with the point of suspension at all times in line with the center of rotation, of the hoisting-cords passed through guides and a groove on the head and through a tube at one end of said head, as set forth.

7. The combination, with the head and the folding slats suspended therefrom, of the end plate on the head formed with a semicircular peripheral groove and a flange at right angles thereto, the cord passed in opposite directions over said groove, with its ends attached to opposite sides of said plate, and the hangers having each a lateral portion engaging the under side of the flanges and supporting the same, with the point of suspension at all times in line with the center of rotation, as set forth.

8. A hanger for Venetian blinds, formed of wire with a double loop to embrace a projection on the blind-head and having one arm bent inward to bear upon a peripheral flange upon said head, substantially as described.

9. A Venetian blind having a head provided with end plates having circular flanges and central projections, combined with a wire hanger having a loop to embrace said projection, and an arm bent inward to bear upon the under side of said flange, substantially as and for the purpose specified.

In testimony whereof we affix our signatures in presence of two witnesses.

MARCUS S. SIMMONS.
CHARLES ANGUS.

Witnesses:
THOS. H. HAM,
JAMES J. PHELAN.