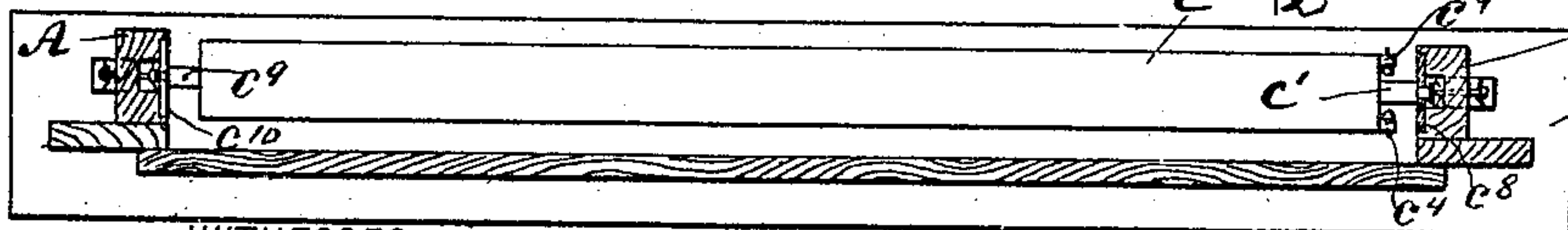


3 Sheets—Sheet 1.

SLIDING VENETIAN BLIND AND FRAME THEREFOR.

Patented Jan. 6, 1891.



WITNESSES:
John H. Deamer
C. Sedgwick

Fig. 3^a

C. Miss J.

Mum + Co

ATTORNEYS

(No Model.)

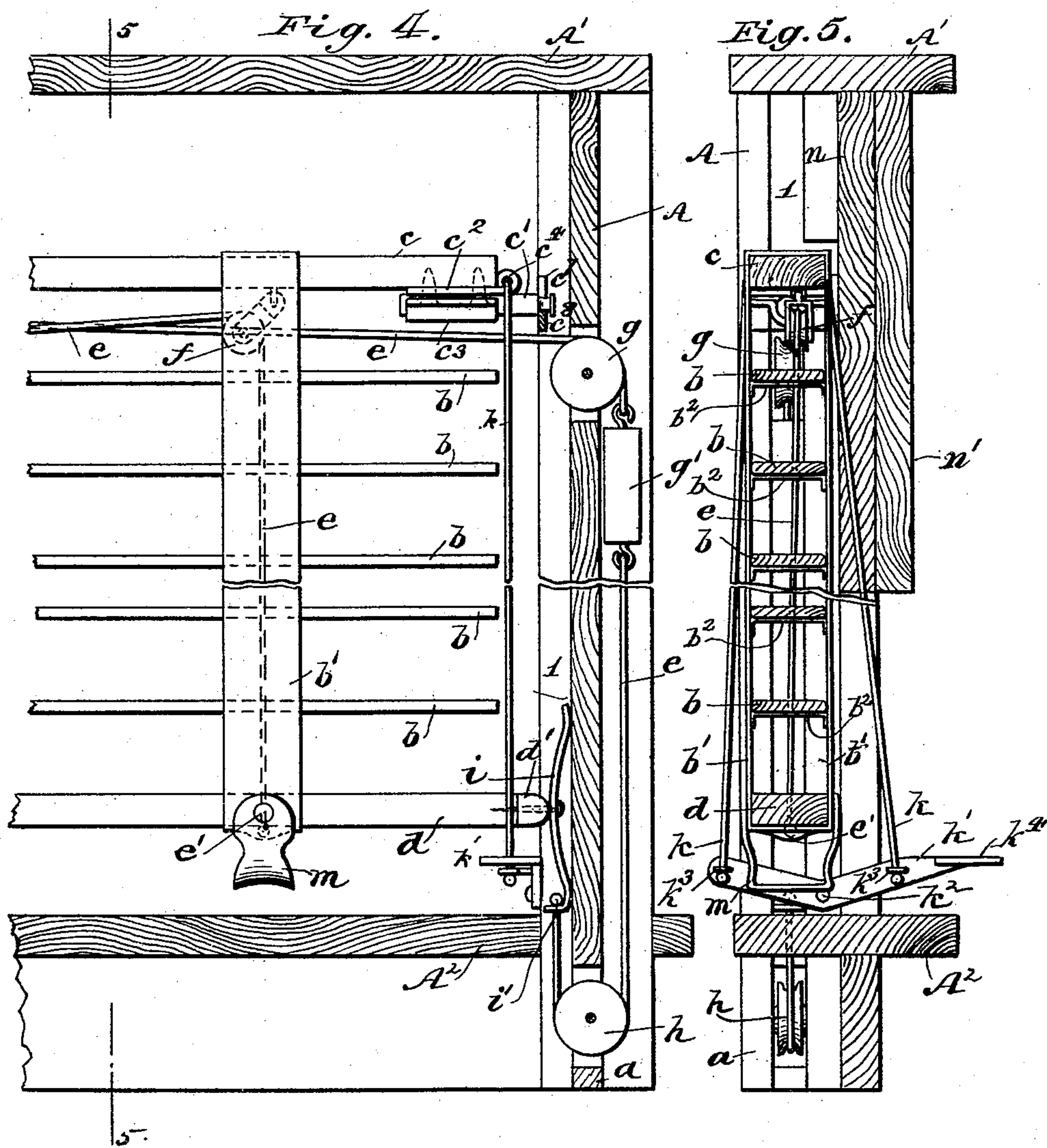
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C. NISS, Jr.

SLIDING VENETIAN BLIND AND FRAME THEREFOR.

No. 444,302.

Patented Jan. 6, 1891.



WITNESSES:

John M. Deemer
C. DeGruick

INVENTOR:

C. Miss Jr.

BY

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(No Model.)

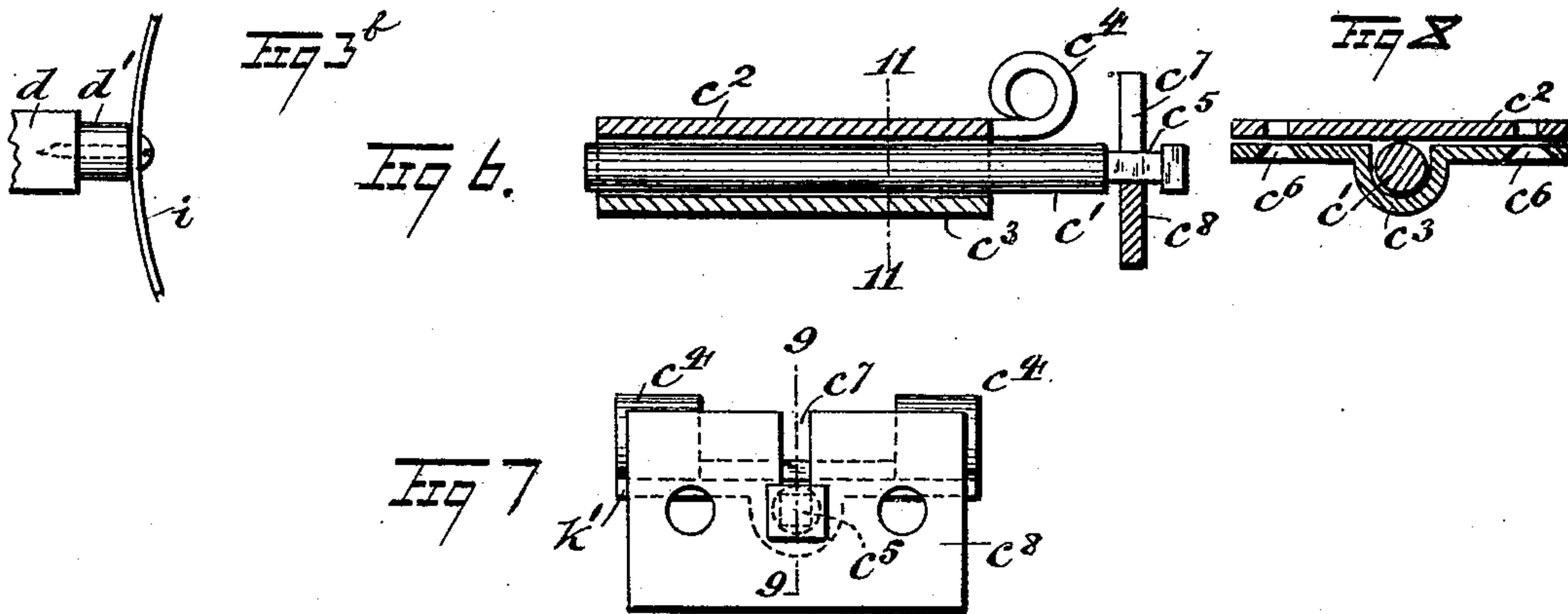
3 Sheets—Sheet 3.

C. NISS, Jr.

SLIDING VENETIAN BLIND AND FRAME THEREFOR.

No. 444,302.

Patented Jan. 6, 1891.



WITNESSES:

H. Walker
C. Sedgwick

INVENTOR:

C. Niss Jr.

BY

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ATTORNEYS

UNITED STATES PATENT OFFICE.

CHARLES NISS, JR., OF MILWAUKEE, WISCONSIN.

SLIDING VENETIAN BLIND AND FRAME THEREFOR.

SPECIFICATION forming part of Letters Patent No. 444,302, dated January 6, 1891.

Application filed December 26, 1889. Serial No. 334,985. (No model.)

To all whom it may concern:

Be it known that I, CHARLES NISS, JR., of Milwaukee, in the county of Milwaukee and State of Wisconsin, have invented a new and Improved Sliding Venetian Blind and Frame Therefor, of which the following is a full, clear, and exact description.

As heretofore constructed the style of window-shades known as "Venetian blinds" have been suspended from the upper portion of a window-casement, the series of transverse slats comprising the blind being held spaced apart upon tapes and made susceptible of compact adjustment vertically by cords rove through the slats, which cords when drawn downwardly elevate the blind by gathering the slats into a mass near the top of the window.

The object of my invention is to provide a compact, neat, and convenient means for supporting and operating Venetian blinds, whereby the defects incident to ordinary Venetian blinds will be obviated.

To these ends my invention consists in the provision of a supporting frame or receptacle for the slatted blind and novel devices whereby these slats will be supported in the frame and adapted for adjustment therein, either to elevate or depress them or to rock each slat edgewise when the blind is in lowered adjustment.

My invention further consists in the construction and combination of parts, as is hereinafter described, and indicated in the claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar letters of reference indicate corresponding parts in all the figures.

Figure 1 is a partly-sectional front elevation of the blind receptacle or frame and the slatted blind suspended therein, showing means for supporting the blind and elevating it. Fig. 2 is a side elevation in section of the frame and blind therein suspended, taken on the line 2 2 in Fig. 1, means for angular adjustment of the blind being shown connected therewith. Fig. 3 is a plan view in section taken on the line 3 3 in Fig. 1. Fig. 3^a is an enlarged detail view of the vibrating lever by which the angular adjustment of the blind-slats is effected. Fig. 3^b is an enlarged por-

tion of a transverse bar, to which the lower portion of the blind is secured, and a portion of an elliptical plate-spring connected to the end of said bar. Fig. 4 is an enlarged broken front elevation of the frame and blind supported thereon by attachments, as shown. Fig. 5 is an enlarged broken side elevation in section of the frame and blind thereon supported, taken on the line 5 5 in Fig. 4. Fig. 6 is a longitudinal vertical section of a blind-supporting device, taken on the line 9 in Fig. 7. Fig. 7 is an end view in elevation of the blind-supporting device shown in Fig. 6. Fig. 8 is a cross-section of the blind supporting device, taken on the line 11 in Fig. 6.

A A represent the side pieces or stiles of a light rectangular frame, which are grooved near their center of width throughout their length upon their inner faces, as at 1 in Figs. 2 and 5. The stiles A are connected above by a transverse cap-piece A' and below by the sill A², the latter named being so relatively located that depending ends *a* of the stiles A are allowed to project below it. The frame is of such dimensions as will permit it to fit within the casement of a window to which the blind is to be applied, said frame being finished to suit the color of the blind, or in any other preferred manner.

The window-blind is constructed of a series of thin slats *b*, that are similar to those employed in Venetian-blind manufacture. These are arranged at spaced intervals between the vertical parallel tapes *b'*, and are thereon supported in the usual manner by cross-tapes *b*², that are secured by their ends to the pairs of vertical tapes *b'*, thus adapting them to control the vertical adjustment of the series of blind-slats, and also change their position from parallel horizontal planes to any angular deviation therefrom considered edgewise.

The slats *b* of the blind are supported upon the rectangular frame previously mentioned by a transverse flat bar *c*, which is of equal width and length with the slats and is pivoted by its ends to the adjacent inner faces of the stiles A, as at *c'*, so that the bar may rock edgewise, a peculiar style of pivotal support being preferably employed, which will be further described. The upper ends of the

tapes b' are secured to the side edges of the rocking bar c at such points as will permit the blind to depend from the bar and have its slats align therewith at the ends and sides of the same. A flat stretcher-bar d , similar to the rocking bar c , is provided, to which the lower ends of the tapes b' are secured in like manner, the length of these tapes being such with relation to the space between the cap-piece A' and sill A^2 of the supporting-frame that the lower stretcher-bar d will lie near the sill A^2 and parallel thereto when the blind is completely lowered, as shown in Fig. 1.

A principal feature of improvement consists in the means provided for manipulation and support of the slatted blind at any desired point of vertical adjustment, to effect which the cords e are attached by one end of each to the stretcher-bar d at the points e' between the vertical pairs of tapes b' . Thence said cords e are upwardly extended through slots in the blind-slats in the usual manner until they reach the grooved pulleys f , that are pivoted in bracket-frames and are loosely connected to and supported from bar c , which pulleys they engage on their upper surface, and thence are stretched toward opposite sides of the blind, where the pivotally-supported grooved pulleys g are located in slots formed in the stiles A . The pulleys g are located below and near to the points of rocking support afforded to the upper cross-bar c , preferably in vertical alignment therewith, and the cords e , which are made to engage their upper surfaces, are attached to the upper ends of the elongated weights g' , that are located in proper recesses provided for their free vertical reciprocation outside of the stiles A of the blind-supporting frame.

Upon the lower ends of the weights g' the cords e are secured to permit their further extension downwardly until they reach the grooved pulleys h , that are pivoted upon the stiles A below the sill A^2 . The cord-extensions e are made to project inwardly, engaging the lower surface of the pulleys h , and thence upwardly on the inner sides of the stiles A until their terminal ends may be attached to the lower ends i' of the curved leaf-springs i .

The length of the cords e is so proportioned to that of the blind and distance between the upper and lower grooved pulleys g h that when the elongated weights g' are nearly in contact with the upper pulleys g the leaf-springs i will have their centers of length opposite the ends of the stretcher-bar d , upon which they bear, and to which they are secured by a screw-connection.

The ends of the stretcher-bar d are reduced to afford cylindrical projections d' , which are protected by metal ferrules. Said ferrule-covered ends are of suitable diameter to enter the vertical grooves l in the stiles A , where they engage the semi-elliptical leaf-springs i , near the longitudinal centers of the latter, by screws or nails inserted through perfora-

tions therein which axially penetrate the cylindrical ends d' of the stretcher-bar. (See Fig. 3^b.) It will be seen that the springs i are located in the longitudinal grooves l of the frame-stiles A and can slide reciprocally.

To afford means for the convenient adjustment of the slats b edgewise, so as to alter the degree of their inclination from horizontal planes, the cords k are attached by their upper ends to the oppositely-projecting lugs on the pivotal support c' of the rocking bar c , preferably on its right-hand end. Thence the cords are extended downwardly and secured by their lower ends to the bracket-ears k^3 on the rocking lever k' at points thereon about equally distant from the point k^2 of pivoted support therefor, so that a vertical vibration of the rocking lever will more or less incline the slats b , or these may be located in horizontal parallel planes, as shown in Fig. 1, so as to freely admit light and air when the blind is in lowered adjustment.

Referring to Figs. 6, 7, and 8, where the construction of the pivotal support c' of the blind is shown in detail, it will be seen that the device, which is located at the right-hand side of the blind, and its supporting-frame consists of a flat rectangular plate c^2 , provided with ears c^4 , which project toward the frame, stile A and are made integral with said plate near its side edges. A loose elastic plate c^3 fits against the lower side of plate c^2 . It is longitudinally bent to produce a semicircular groove near its center of width, as shown in Fig. 8. A cylindrical journal-rod c' is located in the groove of plate c^3 and extends toward the frame-stile. It is held in place by screws inserted in holes c^6 , whereby the two plates are held together upon the lower surface of the rocking bar c . The outer end of the journal-rod c' is squared, as at c^5 in Fig. 7, and engages therewith the open slot c^7 formed in plate c^8 , which latter is secured on the face of the slotted stile A . The opposite end of the rocking bar c is supported by the pintle c^9 , which is secured on a supporting-plate that is screwed fast to the lower surface of the stretcher-bar and engages a perforated bracket-plate c^{10} , fastened to the stile A . The provision of the bracket-supporting clamping-plates c^2 c^3 permits the journal-rod c' to be held with the necessary degree of friction applied, so that the slats of the blind will remain where adjusted.

The rocking lever k' (shown enlarged in Fig. 3^a) is provided with the laterally-projected perforated ears k^3 , to which the lower ends of the cords k are secured, and may be vibrated to adjust the position of the blind slats b by manipulation of its thumb-piece k^4 .

As the cords e are stretched taut when the parts are connected, as has been explained, they will always remain so, from the fact that the tension of the springs i will produce sufficient frictional resistance by their contact with the surface of the stiles A to retain them at any point of vertical adjustment thereon

and dispose of the other connected parts accordingly. The weight of the pieces g' and frictional bearing of the springs i , combined with that of the cords e , is so proportioned to the weight of the blind-slats b that the latter may be vertically adjusted with ease by movement of the stretcher-bar d or the pendant loops m , which form a finish below the tapes b' .

10 If it is preferred to conceal the blind-slats b when these are elevated and drawn together in a mass near the top of the blind, this may be effected by affixing the skirt-board n across the top of the frame, the board being seated in rabbets formed on the edges of the frame-stiles A , so that its outer surface is flush with these edges, and upon the skirt-board any preferred style of ornamental molding or facing n' is secured.

20 Several advantages are claimed for the method of constructing and supporting Venetian blinds, as herein set forth, the most important consisting in the stable support afforded to the blind-slats at the upper and lower ends of the blinds, whereby the swinging movement usual to the ordinary Venetian blind is prevented and its vertical adjustment greatly facilitated.

30 The manner of counterbalancing the blind by the co-operative action of the semi-elliptical leaf-springs i and weights g' obviates the use of long cords and affords means for the ready adjustment of the blind vertically considered, while the provision of the rocking lever h' and its flexible connection with the rocking bar c enables an operator to instantly secure any desired degree of angular adjustment for the slats b , whereby they may be turned edgewise and partially or entirely close the spaces intervening between them.

40 Slight changes may be made in the construction of the device within the scope of my invention, and I do not therefore limit the construction to the precise forms and combinations shown, but claim the right to vary therefrom within the manifest scope of my invention.

45 Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

50 1. The combination, with a frame and a slatted blind thereon supported to rock by a pintle c^9 at one end of its rocking bar, and a clamped journal-rod c' , that is located at the other end, of two depending cords k , secured to ears on the clamp-plates $c^2 c^3$, which support the rod c' , and a rocking lever h' , supported pivotally on the frame below, to the ears h^3 of which the cords k are attached, substantially as set forth.

60 2. The combination, with a frame, of a rocking bar pivoted within the frame near the upper end of the same, pulleys secured to the under side of the same, pulleys arranged in the side portions of the frame near the upper and lower ends of the same, a slatted blind depending from the rocking bar, a pair of blind-elevating cords secured to the stretcher-bar near its ends, said cords being passed up through the blind and adjacent pulley attached to rocking bar, then crossed and passed round the pulleys upon the opposite side of the frame, the binding-springs secured to ends of the stretcher-bar, adapted to bind against the sides of the frame, and to which the end of the opposite elevating-cord is attached, and the counterbalancing-weights, substantially as shown and described.

CHARLES NISS, JR.

Witnesses:

R. TELLS,

WM. HAFEMANN.