(No Model.) 2 Sheets—Sheet 1.

G. HAYES.

BLIND SLAT AND APPARATUS FOR OPERATING THE SAME.

No. 345,689. Patented July 20, 1886.

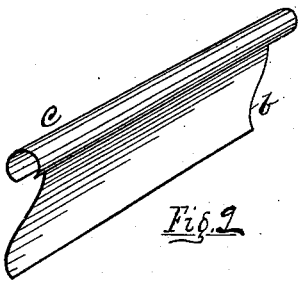

Fig. 2.

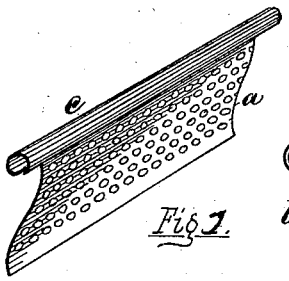

Fig. 1.

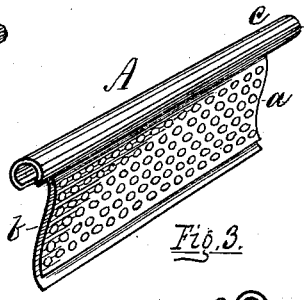

Fig. 3.

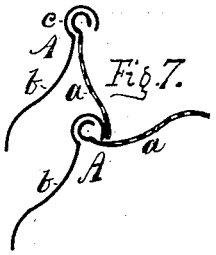

Fig. 7.

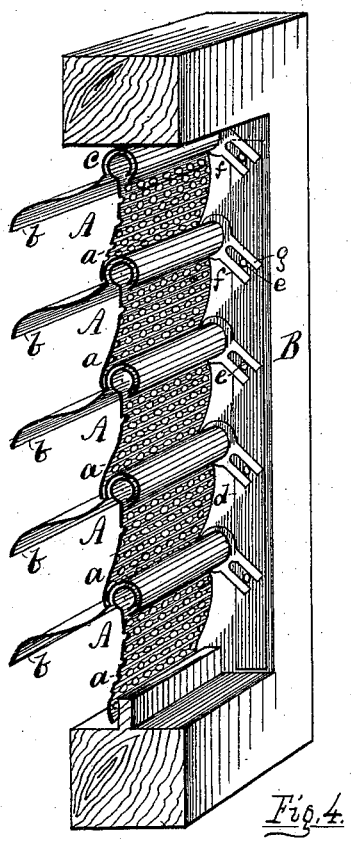

Fig. 4.

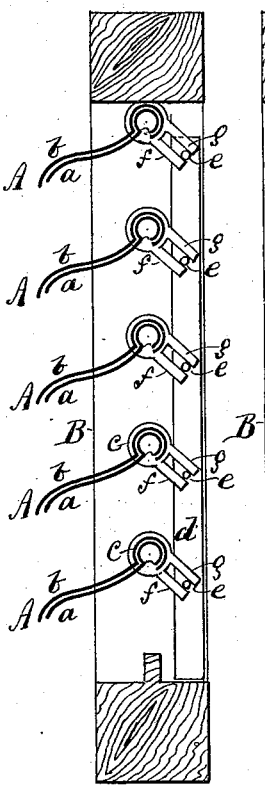

Fig. 5.

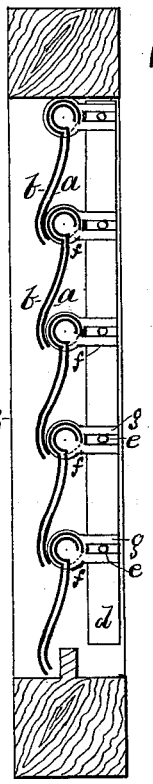

Fig. 6.

WITNESSES

Jacob Koch

Charles Hayes

INVENTOR

Geo Hayes.

(No Model.) 2 Sheets—Sheet 2.

G. HAYES.

BLIND SLAT AND APPARATUS FOR OPERATING THE SAME.

No. 345,689. Patented July 20, 1886.

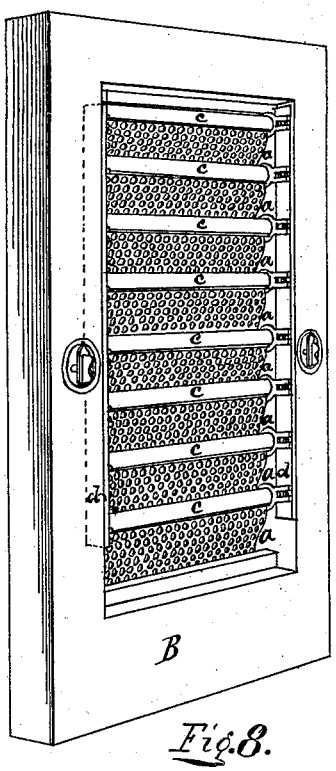

Fig. 8.

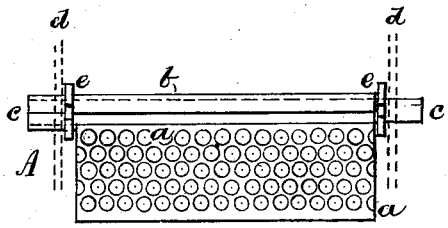

Fig. 9.

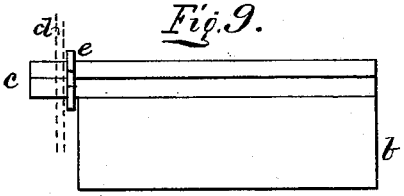

Fig. 10.

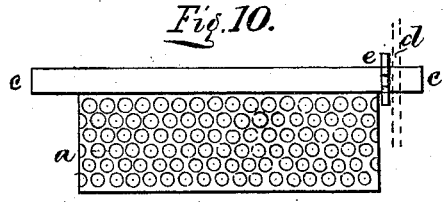

Fig. 11.

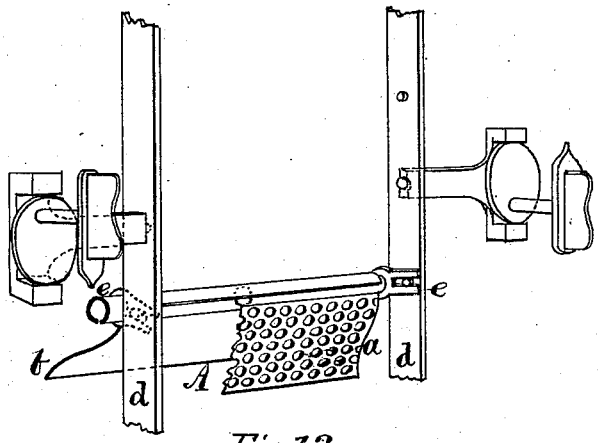

Fig. 12.

Witnesses:
Jacob J. Koch
Jno. Storey

Inventor:
Geo. Hayes.

UNITED STATES PATENT OFFICE.

GEORGE HAYES, OF NEW YORK, N. Y.

BLIND-SLAT AND APPARATUS FOR OPERATING THE SAME.

SPECIFICATION forming part of Letters Patent No. 345,689, dated July 20, 1886.

Application filed August 7, 1885. Serial No. 173,816. (No model.)

To all whom it may concern:

Be it known that I, GEORGE HAYES, a resident of the city, county, and State of New York, have invented certain new and useful Improvements in Louver and Blind Slats, together with Apparatus for Operating the Same, of which the following is a specification.

My invention consists of a slat for louvers and blinds comprising two separate parts pivoted or hinged together, so that they may be moved conjointly or independently by suitable moving mechanism, one of the parts perforated (or otherwise apertured) to serve as a ventilating-screen, admitting air, light, and vision, but excluding flies, mosquitoes, and other insects, the other part plain or without apertures, to serve as a protector to the ventilating-screen, and also as a ray and water shed in keeping out the direct rays of the sun and affording security against rain, hail, snow, &c.

My invention further consists in the combination of two or more of the aforesaid slats, forming a series set into any suitable frame—such as the stiles and rails of window-blinds, doors, &c., the posts or jambs of turrets, towers, clear-stories, &c.—constituting a ventilating-panel provided with suitable moving mechanism, whereby the series may be operated.

In the accompanying drawings, Figure 1 shows the plain or unapertured part in perspective. Fig. 2 shows in perspective the apertured ventilating-screen. Fig. 3 shows in perspective the two parts together. Fig. 4 is a perspective view, with near end in section, of a series of slats with supporting-frame and operating device. The slats are shown in position for protected ventilation. Fig. 5 is a vertical section of the same series shown fully open. Fig. 6 is a vertical section of the same series shown fully closed. Fig. 7 is a vertical section of two slats, illustrating a modification in the manner of joining the two parts of the slat together. It affords a movement of the two parts in opposite directions. The shield *b* moves outward, and the screen *a* moves inward, the connection at the pivot-roll being reverse to that of the former illustrations described. In this view the lower slat is shown fully open, and the upper in position for ventilation through the screen. Fig. 8 is a perspective view representing a window-blind panel surrounded with stiles and rails, the panel formed of the metallic slats herein described. The moving device for operating the slats is shown, consisting of a sliding rod and levers for moving the plain or shield portion on one side of the panel, and on the other side a similar rod and levers for moving the screen. Fig. 9 is a face elevation of one slat complete, the apertured screen in front, the roll and pivot of the shield shown with levers attached to the pivots and the sliding bar in dotted lines. Fig. 10 is a similar view of the shield alone, with its lever attached to its pivot and the sliding bar dotted. Fig. 11 is a similar view of the screen with a lever attached to its pivot. The pivot-roll of this part is slid lengthwise into the pivot-roll of the shield, each having its own lever when united. The sliding bar is shown in dotted lines. Fig. 12 is a perspective and skeleton view of sliding bars, levers, &c., one slat shown with its two parts, the apertured screen cut away to show the shield.

A represents the slat when the two parts are united. *a* represents the ventilating-screen, and *b* the shield or ray and water shed. I form in each a pivot-roll at *c*, the roll of the screen being smaller than that of the shield, so that one may fit into the other. Lateral extensions of the roll form the pivots by which the slats are hung to the supporting-frame, the stiles of blinds, doors, or posts of turrets, towers, clearstories, &c. Although this manner of joining the two parts together I prefer for economy, other means of joining may be used, as I do not confine myself to the manner shown. The pivots also may be of separate pieces securely attached to the pivot-rolls of the slats. The slats also may be formed straight or molded into any ornamental form desired, and either part may be made of any suitable material. They admit (when hung) of being opened wide, as in Fig. 5, furnishing as much opening as any other kind of slat, and they may be closed entirely, as in Fig. 6, affording complete protection, when made of metal substantially fire-proof, and when opened to the position in Fig. 4 they furnish the most complete and protected ventilation heretofore known.

The supports or frame is marked B, and the slats may be used in old blinds by removing the old slats and inserting the new.

The moving mechanism shown comprises a sliding bar, *d*, having pins projecting, as at *e*, and a lever having an eye fitting over the pivot of the slat and secured thereto, and its outer end forked (or slotted) engaging with the pin of the sliding bar. The lever is marked *f*, and the forked ends *g*. As the sliding bar is moved upward or downward, the lever is actuated thereby and the slat caused to rock as desired.

I do not confine myself strictly to the movement shown, as other devices may be used to operate the slats.

To move the two parts separately a duplicate device is attached to the other set or part on the opposite side of the frame.

Instead of both parts *a* and *b* of the slat being provided with pivots at the ends shown, the pivots may be dispensed with to either *a* or *b*, and the part without pivots may be hung to the other part by rings at each end, or by a roll in its upper edge forming a hook; also, cast pivots may be used having their one end inserted into the roll of the part and soldered or otherwise secured thereto.

The means for operating the slats consists of the sliding bars *d* and levers *f*, the levers secured to (or cast with) the pivots of the slat, one lever to each part, as shown, and the sliding bar on one side moves the screen, and that on the other side the shield.

I do not confine myself to any particular means for moving the sliding bar, as it may be moved by hand or additional device suitable.

What I claim as new, and desire to secure by Letters Patent of the United States, is—

1. A pivoted and movable louver and blind slat consisting of two separate parts, one perforated (or otherwise apertured) to form a ventilating-screen, and the other plain (or without apertures) to form a shield, the two parts pivoted or hinged together so that they may be moved independently or unitedly, essentially as shown and described.

2. The pivoted and movable louver and blind slat A, consisting of the separate parts *a* and *b*, secured together so as to admit of separate and conjoint movement, essentially as shown and described.

3. In combination, a series of pivoted and movable louver and blind slats, A, each composed of the two separate parts *a* and *b*, hung together so as to admit of independent movement, essentially as shown and described.

4. The combination of the two separate parts *a* and *b* by the pivot-roll *c*, to constitute them one slat, A, substantially as shown and described.

5. A slat for blinds and louvers, consisting of the part *b*, formed of sheet metal, with a roll, *c*, at one edge, having a lateral extension at one side forming a pivot, and the part *a*, also formed from sheet metal, with a roll at one edge, and lateral extensions thereof as pivots, the two parts combined by the insertion of the pivot-roll of the latter into that of the former, substantially as shown and described.

6. In combination with a slat for blinds and louvers composed of the two separate parts *a* and *b*, the moving mechanism consisting of a lever, *f*, attached to the pivot of the part *a*, and a corresponding lever, *f*, attached to the pivot of the part *b*, and to each lever *f* a sliding bar, *d*, having a pin, *e*, engaging with lever *f*, essentially as shown and described.

GEO. HAYES.

Witnesses:
JACOB J. KOCH,
CHARLES HAYES.