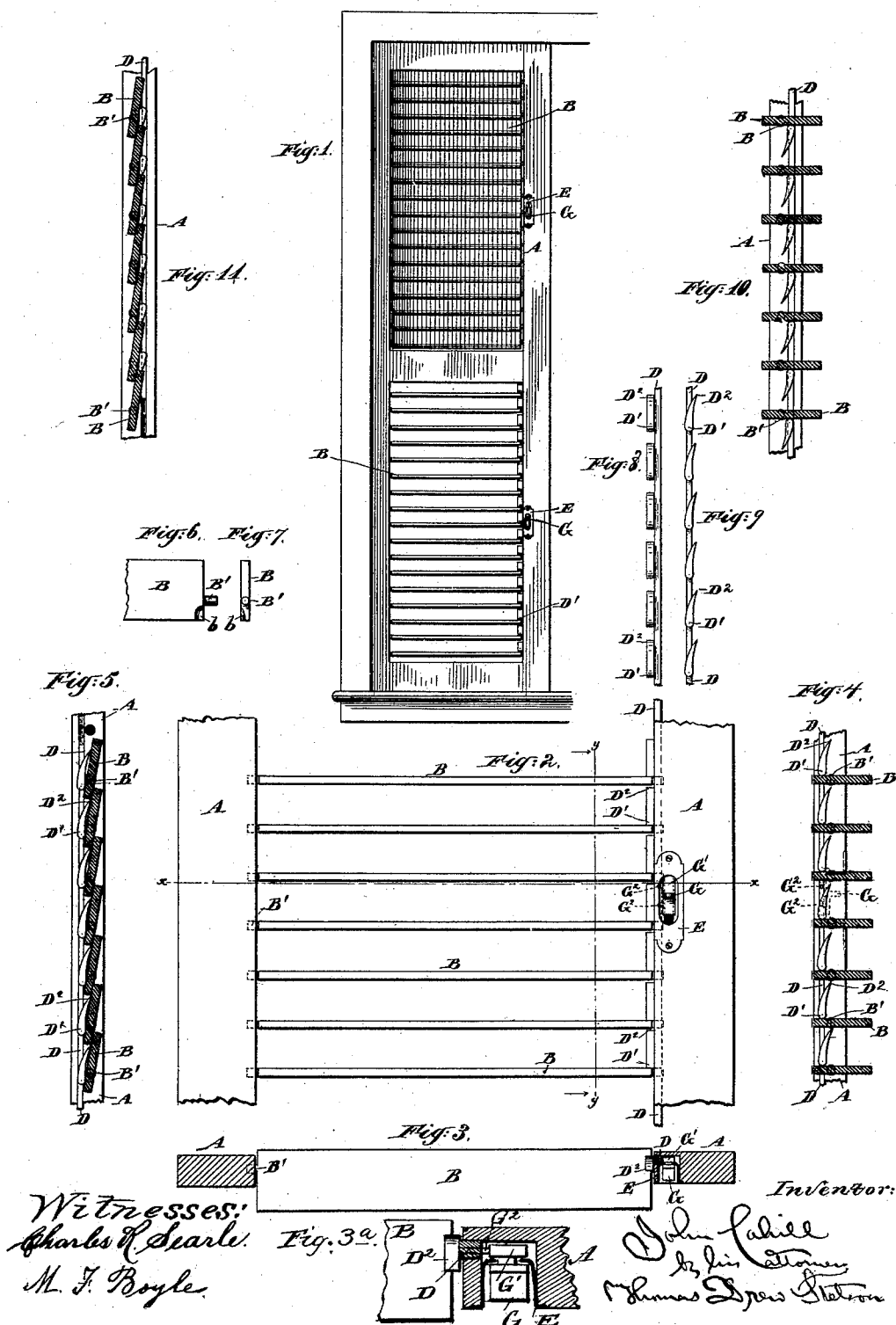


J. CAHILL.
ROLLING SLAT BLIND.

Patented Jan. 12, 1892.



UNITED STATES PATENT OFFICE.

JOHN CAHILL, OF NEW YORK, N. Y.

ROLLING-SLAT BLIND.

SPECIFICATION forming part of Letters Patent No. 466,901, dated January 12, 1892.

Application filed April 2, 1891. Serial No. 387,367. (No model.)

To all whom it may concern:

Be it known that I, JOHN CAHILL, a citizen of the United States, residing in the city and county of New York, in the State of New York, have invented a certain new and useful Improvement in Rolling-Slat Blinds, of which the following is a specification.

The invention applies to all that class of rolling-slat blinds in which the vertical bar or rod which usually connects the several slats at their mid-length is dispensed with and the slats are controlled and turned by a device at one side. The pivot or cylindrical extension at each end which constitutes the axis on which the slat oscillates is arranged so far out of the center that gravity turns the slat into the open position so soon as it is released. I provide at one side a vertically-sliding bar having as many short arms or smooth spurs as there are slats, and by moving this bar upward and downward act on the face of each slat near one edge to cause all the slats to turn and assume the upright or closed position.

In what I esteem the most complete form of the invention the gravity of the rod tends to balance the gravity of the slats. This allows a small amount of friction to hold the entire device in any partially-opened position. Each spur is made wedge-shaped and so arranged that on the sliding of the rod in the direction to allow the slats to open this wedge acts against a slat to initiate the opening movement. The operating-rod is sunk into a groove in the stile of the blind, and a convenient handle is attached by which the rod may be operated.

The accompanying drawings form a part of this specification and represent what I consider the best means of carrying out the invention.

Figure 1 is an elevation showing the blind closed as seen from the interior of the building. The remaining figures are on a larger scale. Fig. 2 is an elevation of a portion. Fig. 3 is a horizontal section on the line xx in Fig. 2. Fig. 3^a is a horizontal section corresponding to Fig. 3, but on a larger scale. Fig. 4 is a vertical section on the line yy in Fig. 2. Fig. 5 is a similar view showing the slats closed. Fig. 6 is a face view of a portion of one of the slats detached. Fig. 7 is a

corresponding end view. Fig. 8 is an elevation of a portion detached. Fig. 9 is a corresponding view at right angles to the view in Fig. 8. Figs. 10 and 11 show a modification. They are vertical sections.

Similar letters of reference indicate corresponding parts in all the figures where they appear.

A is the frame of the blind, which, it will be understood, is attached by hinges (not shown) to the window-frame, and may be provided with any ordinary or suitable fastening by which to hold the entire blind in its position for use or in its position turned on its hinges out of use when so desired.

My invention relates only to the means for holding and changing the position of the slats as required relatively to each other and to the blind-frame A.

The several slats are marked B and are all alike. Each has a pivot B' at each end forward of the center line, so that gravity inclines the back edge to drop. The inner face of one stile of the frame B has a deep groove extending up and down in rear of the line of pivots, in which groove a rod D slides, which may be of brass, iron, or steel, or various materials of tolerable strength adapted to withstand the weather. I prefer malleable cast-iron well coated with zinc. On this rod, cast integral therewith or otherwise rigidly fixed thereon, are equally-spaced projections D' D², the lower end of each projection (marked D') being smooth and rounded and adapted to press down on the upper face of the adjacent slat near the rear edge, and the upper end of each being wedge-shaped and adapted at each ascent of the rod to act on the lower edge of the slat above. Each slat is slightly cut away at b to receive the thin upper end D² of the projection and allow all the slats to be turned fully into the closed position.

G is a handle fixed in a slide G', adapted to be traversed vertically in a housing E, set in a mortise in the stile adjacent to the rod D. This slide G' takes hold of the rod D by means of arms G², which are received in holes drilled or otherwise produced in D. To turn all the slats into the upright position, so that the upper edge of one applies against the lower edge of the next, the operator moves the handle G, and consequently the rod D,

downward, causing each rounded projection D' to depress the rear edge of the proper slat B. To liberate and also positively turn all the slats again into the nearly-horizontal position to allow wind and sunshine to pass—what I term the "open" position—the operator moves the handle G upward. By this movement he not only raises the series of rounded parts D' and allows each slat to turn, but he also raises the wedge part D², pressing it against the lower face of the slat above, and compels it to turn. By making a close fit there is sufficient friction to hold the parts reliably in any half-open position in which they may be left. When the slats are turned into the tightly-closed position, they are further securely held by the angular relation of the motions, so that the series of slats cannot be turned into the open position by applying force directly to them. The force must be applied to the rod D directly or through the handle G to move it upward; otherwise the slats cannot be moved. This makes the device a lock to prevent the slats being turned from the outside.

The effect of the angular motions will be readily understood from the drawings. In closing the blind each slat turns into a nearly-vertical plane. The commencement of the return motion moves the edge in the direction nearly horizontal, and it consequently presses nearly horizontally against the projection D'. Such horizontal pressure induces a corresponding horizontal force in the rod D, but cannot give it the required vertical movement and induce the unlocking. The handle G is of course on the face of the blind which is presented inward toward the interior of the apartment.

Modifications may be made by any good mechanic without departing from the principle or sacrificing the advantages of the invention. Parts of the invention may be used without the whole. I can arrange the slats with the pivots in the rear instead of in front of the center. In such case they have the groove and rod D in front of the pivots and arrange the rod with its projections D' D² in the reversed position. Figs. 10 and 11 show such arrangement. With this the rod must be moved up to close the slats and moved down to liberate and open them. I prefer the arrangement first described for the reason, among others, that in that arrangement the gravity of the widest side of the unbalanced slats B tends to lift the rod D and is partially or entirely balanced by the gravity of the rod,

so that a very moderate amount of friction suffices to hold the parts in any position in which they may be left.

It will be evident that the rod D and its projections D' D² may be made thicker or thinner, as required, to make a closely-approximate balance to the tendency of the slats to turn.

I claim as my invention—

1. In a rolling-slat blind, a frame A, adapted to carry the whole, and a series of rolling slats B, turning on pivots B', having their centers of gravity out of the axis of motion, in combination with each other and with a sliding rod D, extending along one end of the series and carrying projections D', adapted to act on the several slats and turn them each independently in one direction and allow them to turn by gravity in the other direction, and also wedge-shaped projections D², adapted to initiate and compel the return motion, as herein specified.

2. The rolling-slat blind described, having a supporting-frame A and rolling slats B, turning on pivots B', mounted therein, having their centers of gravity out of the axes of motion, in combination with each other and with a sliding rod D, extending along one end of the series and carrying projections having each a part D', adapted to act fairly against a slat, and a part D², adapted to hold the slats locked in the closed position until the rod is operated in the reverse direction, as herein specified.

3. The rolling-slat blind described, having a supporting-frame A and rolling slats B, turning on pivots B', mounted therein, having their centers of gravity out of the axes of motion, in combination with each other and with a sliding rod D, extending along one end of the series and carrying projections, each having a part D', adapted to compel the partial revolution of the slats in one direction, and a part D², adapted to compel the partial revolution in the opposite direction, thus allowing the entire series to be turned in either direction at will, the parts being arranged, as shown, so that the gravity of the rod and its projections is opposed to the gravity of the unbalanced portions of the slats, as herein specified.

In testimony that I claim the invention above set forth I affix my signature in presence of two witnesses.

JOHN CAHILL.

Witnesses:

CHARLES R. SEARLE,
M. F. BOYLE.