

(No Model.)

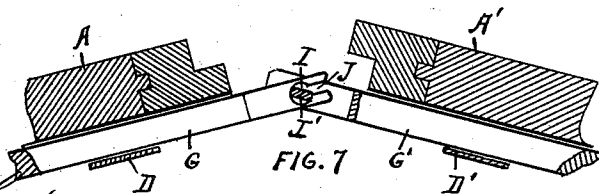
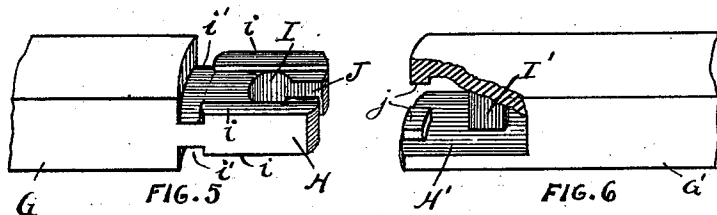
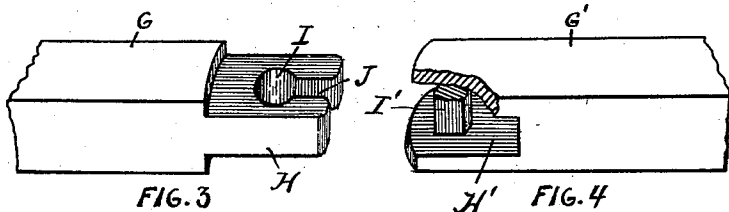
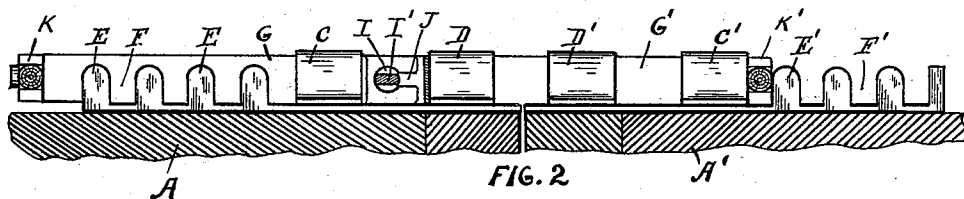
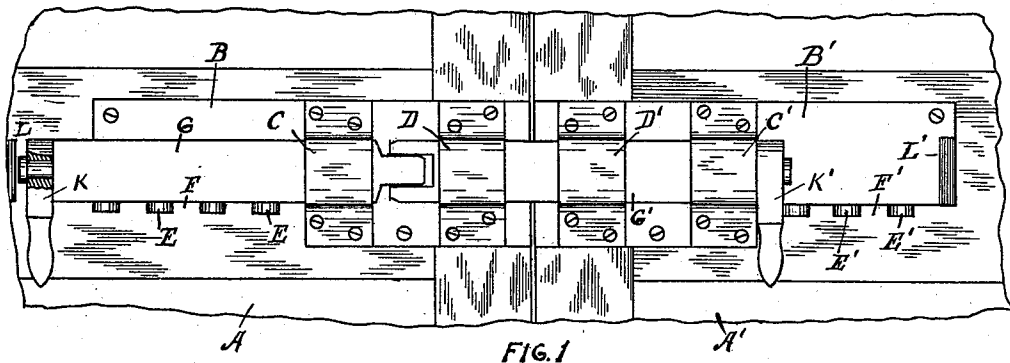
2 Sheets—Sheet 1.

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SHUTTER BOWER.

No. 594,504.

Patented Nov. 30, 1897.



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INVENTORS

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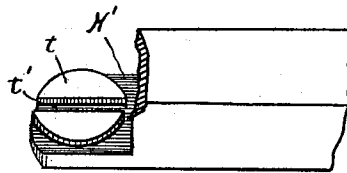
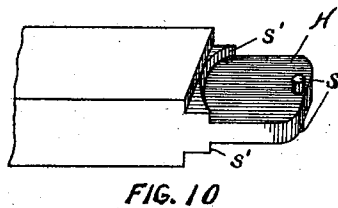
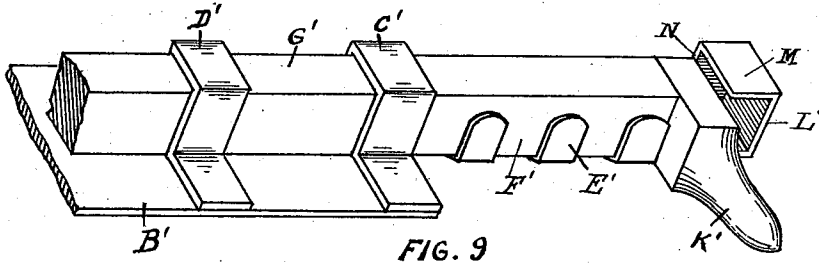
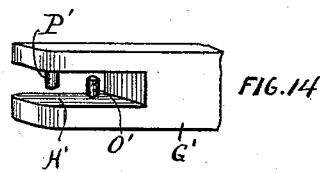
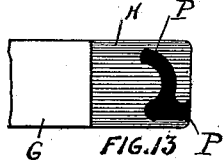
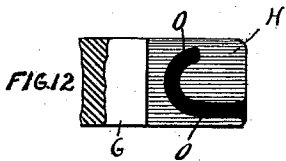
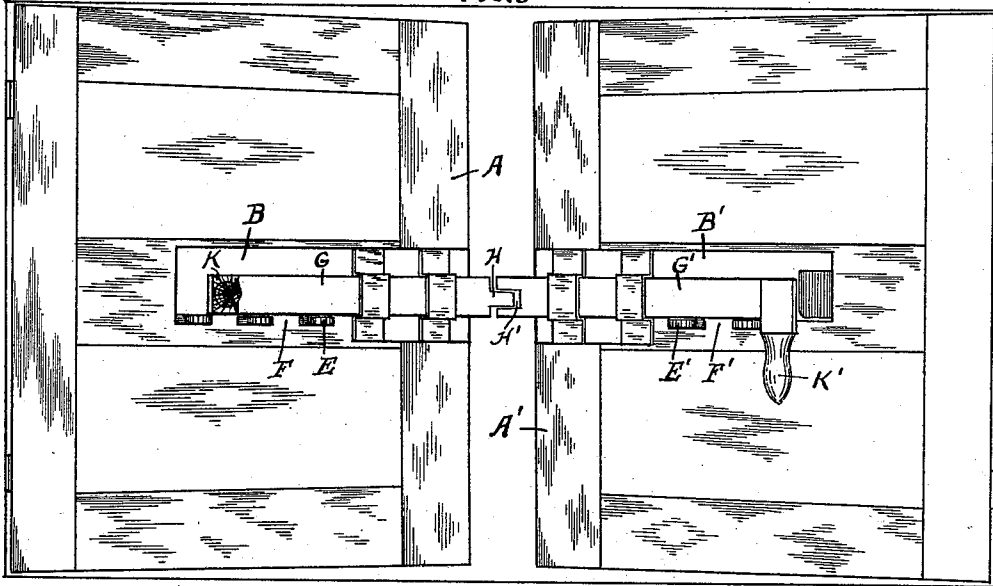
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J. W. WAMSLEY & H. F. LAINÉ.
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FIG. 8



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FIG. 10

FIG. 11

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UNITED STATES PATENT OFFICE.

JAMES WINTER WAMSLEY AND HONORÉ F. LAINÉ, OF PHILADELPHIA, PENNSYLVANIA; SAID LAINÉ ASSIGNOR OF ONE-HALF OF HIS RIGHT TO DAMASO T. LAINÉ, OF SAME PLACE.

SHUTTER-BOWER.

SPECIFICATION forming part of Letters Patent No. 594,504, dated November 30, 1897.

Application filed August 19, 1897. Serial No. 648,770. (No model.)

To all whom it may concern:

Be it known that we, JAMES WINTER WAMSLEY and HONORÉ F. LAINÉ, residing in the city of Philadelphia, State of Pennsylvania, have invented certain Improvements in Shutter-Fastenings, of which the following is a specification.

Our invention is a device for securing shutters and like constructions in both the bowed and the closed positions. Its objects, more specifically, are, first, to secure shutters and like constructions when bowed at any desired angle, so that they will be firmly held in the desired position and so that it shall be impossible to open them or unlock the fastenings from the outside; second, to provide a suitable and efficient device for locking the shutters in the closed position, and, third, to accomplish the foregoing objects by means of a single device of simple and economical construction.

Our invention is illustrated in the accompanying drawings, of which—

Figure 1 is a front elevation showing the shutters locked in the closed position. Fig. 2 is a bottom view, partially in section, of the mechanism when in the position shown in Fig. 1. Fig. 3 is a perspective view of the end of the male bolt. Fig. 4 is a perspective view of the end of the female bolt, part being broken away for the purpose of illustration. Fig. 5 is a perspective view of the end of a specific form of male bolt. Fig. 6 is a perspective view of the end of a specific form of female bolt corresponding to the male bolt shown in Fig. 5, part being broken away for the purpose of illustration. Fig. 7 is a top view, partially in section, showing the position of the bolts when the shutters are bowed. Fig. 8 is a perspective view of the mechanism in the bowed position. Fig. 9 is a perspective view of the locking-bolt and a peculiar form of buffer therefor. Fig. 10 is a perspective view of an additional specific form of male bolt. Fig. 11 is a perspective view of a female bolt adapted to receive the male bolt shown in Fig. 10, part being broken away for the pur-

pose of illustration. Fig. 12 is a top plan view of an additional specific form of male bolt. Fig. 13 is a bottom plan view of the male bolt illustrated in Fig. 12, and Fig. 14 is a specific form of female bolt adapted to engage the male bolt illustrated in Figs. 12 and 13.

Referring to the drawings, the shutters A and A' are respectively provided with the guide-plates B and B', having the bolt-keepers C D and C' D'. Projections or lugs E and E', which may be struck out of the material composing the guide-plates and bent up at right angles to the faces thereof, are spaced at equal intervals rearwardly from the rear keepers, thus forming notches or catches F and F'. Bolts G and G' are secured, respectively, to the shutters A and A' and guided in rectilinear movement by the keepers C D and C' D' and the lugs E and E', on which they rest. The forward end of the male bolt G is reduced to form a tenon H, and the forward end of the female bolt G' is provided with a mortise H', which is adapted to receive the tenon H.

In the bolts shown in Figs. 2 to 7, inclusive, a cylindrical aperture I passes vertically through the tenon H and opens by a passage J through the end of the bolt, the width of the passage being less than the diameter of the cylindrical aperture. A vertical pin or pivot I' passes through the mortise and is fixed in the bolt, the section of the pin being of such width as to permit its entry through the passage J when the bolts are in alignment, as illustrated in Fig. 2, and of such length as to prevent its withdrawal through the passage J when the bolts are bowed, with the pin seated in the cylindrical aperture I, as illustrated in Fig. 7. The length of the pin-section is made substantially that of the diameter of the cylindrical aperture in which it is adapted to turn.

To avoid wrenching the pin I' by bowing the bolts before the pin is seated in the aperture I or while it is in the passage J, the construction illustrated in Figs. 5 and 6 may be adopted, in which ribs *i* are formed at the

edges of either or both faces of the tenon H, so terminating as to leave a circular channel v' at the inner ends thereof and forming a longitudinal channel on each face of the tenon. Studs j are formed within the mortise of the female bolt, so that they will pass freely between the ribs i and, when the pin I' is seated in the aperture I, turn in the channel v' . If, however, the pin is not so seated, the studs will engage the ribs and prevent the wrenching of the pin in the passage J.

The form of connection between the bolts shown in Figs. 10 and 11 may be adopted. In this construction the tenon is provided with a pair of studs s , which may be formed by passing a pin through the end thereof, and its faces terminate in circular abutments s' . The mortise is provided with a raised cylindrical disk t on each of its inner faces, through the centers of which pass longitudinal channels t' , through which the studs s are adapted to run. It will be seen that when the bolts are in alinement and are brought together the studs will pass through the channels and the disks will be seated against the abutments. If now the bolts are bowed, the studs will be turned into position to catch the peripheries of the disks, thus preventing the separation of the bolts.

The preferred form of connection between the bolts is that illustrated in Figs. 12, 13, and 14, in which the upper face of the tenon on the male bolt is provided with a channel O, which receives a stud O', set in the upper face of the mortise of the female bolt, and the lower face on the tenon is provided with a channel P, which receives a stud P', set in the lower face of the mortise. It will be observed that the channel O (illustrated in Fig. 12) and the channel P (illustrated in Fig. 13) comprise arcs of the same circle (but lying on opposite sides of the tenon) in which the studs O' and P' will enter when the bolts are brought together while in alinement and from which the studs cannot be withdrawn when the bolts are bowed.

Latches K and K', pivoted at the rear ends of the respective bolts G and G', serve to operate the bolts when raised above the lugs E' and E' and to lock them in the desired position by engaging the proper catches F and F'.

Suitable buffers L and L' are provided to limit the rearward travel of the bolts. To prevent the complete withdrawal of the bolts and their consequent separation while the latches are moving backward in the elevated position, thus providing an additional safeguard against opening from the outside, the buffer L' may be provided with members M and N, which form a box-like structure so placed that the latch K' must be drawn down behind the last lug E' before complete withdrawal can be effected, as illustrated in Figs. 8 and 9.

It will now be evident that the shutters may be locked in the bowed position by bringing the shutters into alinement and together, so that their ends engage at the point of juncture between the shutters, on the happening of which (the latches being elevated and employed to effect the operation) the shutters are pushed outward to the desired position, where they are held by dropping the latches into the corresponding catches. To lock the shutters in the closed position, the bolts are moved to the position illustrated in Fig. 1.

It is obvious that various mechanical changes may be made in the devices forming the subordinate features of our invention. The character of the pivotal connection between the two bolts may be varied when found expedient. The position and peculiar operation of the latches may be changed, as may also the character of the catches to conform therewith, without departing from the spirit of our invention.

We claim as our invention—

1. In a fastening device, a pair of sliding bolts, a guideway for each of said bolts, and a separable pivotal connection between said bolts by which they are locked in bowed position by first moving them together while in alinement and then moving them to the bowed position, as specified.

2. In a fastening device, a pair of sliding bolts, a guideway for each of said bolts, a catch for holding each of said bolts in any desired position in its path of travel, and a separable pivotal connection between the adjacent ends of said bolts by which they are held locked together in bowed relation and permitted to be separated when in alinement, as specified.

3. In a fastening device, a pair of separable sliding bolts, a guideway for each of said bolts, an aperture in the end of one of said bolts having a passage through the end thereof, a pivot in the end of the other of said bolts adapted to enter said passage when said bolts are in alinement and bear in said aperture, and means for preventing the withdrawal of said pivot through said passage when said bolts are bowed, as specified.

4. In a fastening device, a sliding bolt, in combination with a latch, a series of catches adapted to be engaged by said latch to hold said bolt in desired position, a guideway for said bolt, and an abutment therefor which requires said latch to be oscillated to the normal locking position to effect the complete withdrawal of said bolt, as specified.

5. In a fastening device, a pair of sliding bolts, a guideway for each of said bolts, a vertical cylindrical aperture passing through the outer end of one of said bolts, a passage of less width than the diameter of said aperture which leads from the said aperture through the end of said bolt, and a vertical pivot fixed

in the outer end of the other of said bolts and adapted to enter said passage and turn in said aperture, said pivot being of such section as to be secured in said aperture when said bolts are in bowed position, as specified.

6. In a fastening device, a pair of sliding bolts, a guideway for each of said bolts, a stud fixed in the end of one of said bolts, a channel formed in the end of the other of said bolts through which said stud may pass when said bolts are in alinement and from which said stud cannot be withdrawn when said

bolts are bowed, whereby said bolts are locked together, as specified.

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

JAMES WINTER WAMSLEY. [L. s.]

HONORÉ F. LAINÉ. [L. s.]

Witnesses as to James Winter Wamsley:

THOMAS S. GATES,

CHARLES N. BUTLER.

Witnesses as to Honoré F. Lainé:

E. CUHLIG,

J. H. STEAD.