(Model.)

P. MATHES.

FASTENER FOR THE MEETING RAILS OF SASHES.

No. 283,502. Patented Aug. 21, 1883.

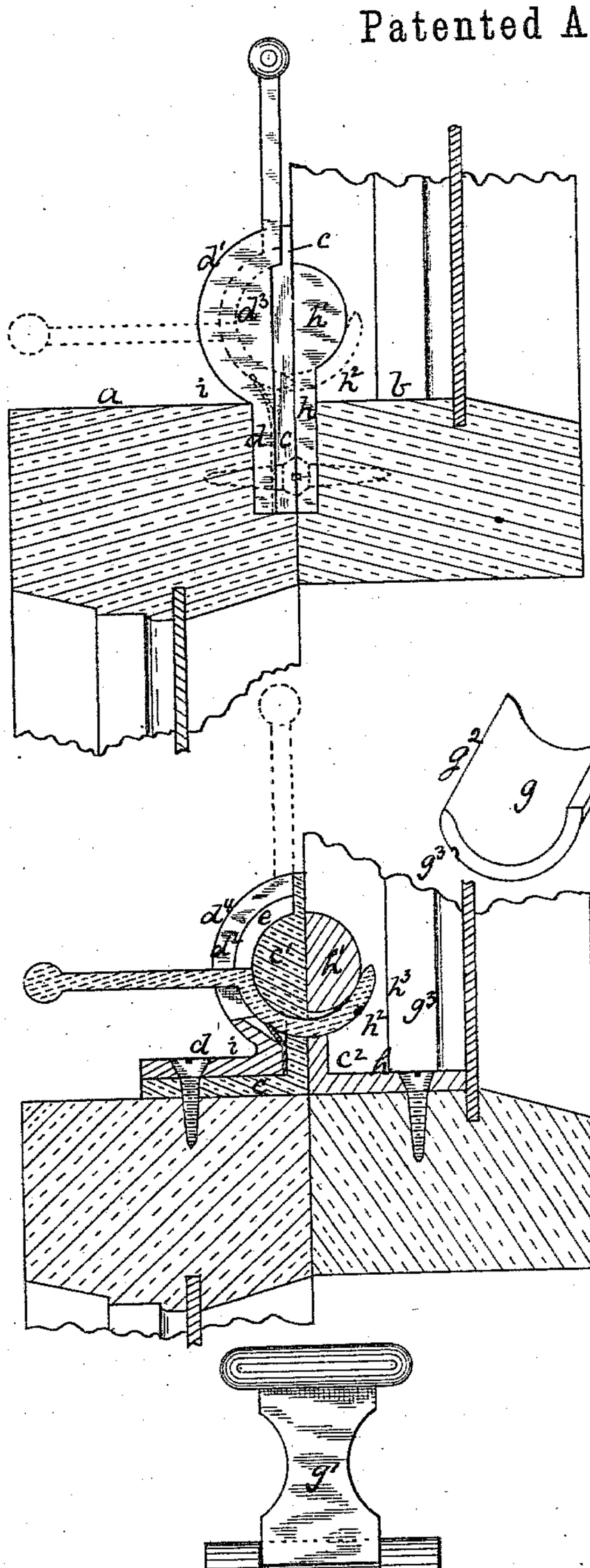

Fig. 1.

Fig. 2.

Fig. 4.

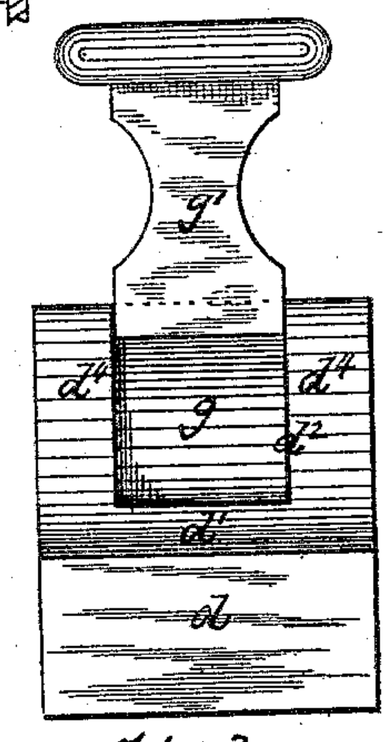

Fig. 3.

Witnesses

W. B. Corwin

O. P. Cowl

Inventor

Philip Mathes

by his attys

Bakewell & Kerr

UNITED STATES PATENT OFFICE.

PHILIP MATHES, OF IDLEWOOD, PENNSYLVANIA.

FASTENER FOR THE MEETING-RAILS OF SASHES.

SPECIFICATION forming part of Letters Patent No. 283,502, dated August 21, 1883.

Application filed December 4, 1882. (Model.)

To all whom it may concern:

Be it known that I, PHILIP MATHES, of Idlewood Station, in the county of Allegheny and State of Pennsylvania, have invented a new and useful Improvement in Sash-Fasteners; and I do hereby declare the following to be a full, clear, and exact description of the invention, reference being had to the accompanying drawings, forming a part of this specification, in which—

Figure 1 is a vertical section of the meeting-rails of two window-sashes, showing my improved sash-lock in side elevation. Fig. 2 is a vertical section of the sash-lock and of the meeting-rails of the two sashes, and shows a different way of attaching the parts of the lock to the window-sash. Fig. 3 is a front elevation of the form shown in Fig. 1. Fig. 4 is a perspective view of the sliding bolt.

Like letters of reference indicate like parts in each.

As heretofore constructed, the majority of sash-fasteners which are now in general use for securing the meeting-rails of the two sashes have been open to several objections. In many of them it is absolutely necessary to bring the meeting-rails exactly together or the lock cannot be fastened. This is often troublesome, and in some cases impossible, owing to the fact that the windows and their frames shrink and get out of true. Another objection is that it is possible with many locks to insert a knife-blade or other thin flat instrument up between the two rails and push the locking-bolt out of the way, so that the window may be opened. Another objection is that the majority of such fastenings are provided with springs or other parts liable to get out of order. My invention is designed to obviate these difficulties, and to provide a simple, efficient lock, which, first, does not require the meeting-rails to be exactly together in order to be locked; second, which is impossible to be unlocked from the outside by the insertion of any instrument through the crevices between the rails; and, third, which is not liable to get out of order.

To enable others skilled in the art to make and use my improvement, I will now describe its construction and mode of operation.

The meeting-rails of the two sashes are shown at *a* and *b*. Fastened to the rail *a* is a plate, *c*, which has a semicircular projection or guide, *c'*, on its inner side, and a slot, c^2, below the projection *c'*. On the inner side of the plate *c* is a second plate, *d*, the upper portion, *d'*, of which is a semicircle struck from a larger circle than that of the semicircle *c'*, so as to form a curved cavity, *e*, between them. The plate *d* is cut away, as at d^2, and is provided with straight sides or ends d^3, which, when the plates *c* and *d* are put together, rest against the ends of the semicircular projection *c'*. The remaining portions d^4 of the plate *d* constitute retaining-flanges, which extend over the sides of the curved bolt or slide and retain it in position, as hereinafter described. The bolt or slide *g* is of curved or semicircular form, such as will fit into the cavity *e* between the two plates *c* and *d*. It is provided with a handle, *g'*, which projects through the opening d^2. When the bolt *g* is moved by the handle *g'*, it is caused to turn around the semicircular projection *c'*, being retained in place by the flanges d^4 in its movement around the central guide, *c'*, and its end will be projected through the slot c^2. On the rail *b* is a plate, *h*, having a semicircular projection, *h'*, corresponding in size with that of the projection *c'*, and below the projection *h'* is a slot, h^2, which is of sufficient size to permit the passage through it of the curved bolt *g*. When the meeting-rails *a b* are in proper position, the projections *c' h'* are opposite to each other, as shown in Figs. 1 and 2, so as to form a circular core or guide upon which the curved locking slide or bolt *g* moves, and the slots c^2 and h^2 are opposite to each other, so that when the curved slide is turned by means of its handle it will be caused to move around the semicircular projections *c' h'* and through the slots c^2 h^2. In Fig. 1 it is shown in an unlocked position, and in Fig. 2 it is shown in a locked position. It is apparent that when the slide or bolt *g* is in the position shown in Fig. 2 it is impossible to move it backward or forward by means of a knife or other flat instrument inserted through the crack between the meeting-rails. The slot h^2 is made a little wider than the slot c^2 by beveling off a portion of the semicircular part *h'* above it, as at h^3, and the end of the locking bolt or slide *g* is beveled, as at g^2, so that if the sashes *a* and *b* should be

not quite together the beveled end of the bolt passing through the slot c^2 into the slot h^2 will act upon the sides of the latter and will draw the sashes together. This is quite an important feature, because while the amount of movement thus obtained is small, yet the want of alignment of the meeting-rails produced by the warping of the window sash and frame is also but small, and this want of alignment has heretofore been a very serious source of inconvenience and annoyance in the use of sash-fasteners. The wedging action of the slide g, operating upon the solid semicircular surfaces c' and h', has sufficient power to draw the rails together and make them match. The plate d is provided with a spring, i, which is so placed as to have a slight bearing or tension against the locking-slide g, for the purpose of preventing the same from moving accidentally in the circular cavity e. As there is but little tension on the spring i, it will last a long time. The position of the locking-slide g being a vertical one, as shown in Fig. 1, the weighted handle is liable to cause it to fall into the position shown in Fig. 2 in case provision is not made to prevent it doing so. I have provided the spring i for this purpose.

I do not limit myself to the particular form of slotted keeper h shown. It is necessary to have some kind of a recess or slotted plate or hook under which the end of the locking bolt or slide g can be projected by turning it in the curved guides in which it moves. Nor do I limit myself to the provision of the semicircular projections c', as I may have the locking-slide move in circular grooves made in the sides d^4 of the plate d.

By the term "circular guide or guides," I mean the projection c' or the circular grooves in the sides d^4 just spoken of, or any other equivalent device to direct the circular movement of the curved locking bolt or slide.

In the side of the bolt g is a shallow groove, g^3, which is designed to receive the end of the spring i, the more certainly to hold the bolt in a vertical position. The pressure of the spring in the groove is not sufficient to interfere with the easy turning of the bolt.

I am aware that sash-fasteners consisting of a curved hook pivoted on one sash and engaging with a keeper on the other sash have been devised; and I do not claim the same, for the reason that they differ from mine both in construction and principle. In such fasteners the hook has to be secured by a pawl or catch to prevent it from being thrown back out of the keeper when pressure is applied to move one or the other of the sashes. If the hook is not so secured, it will be thrown out of the keeper by simply raising the lower sash or by lowering the upper one, the movement of the sashes causing it to move backward. This is not the case with my fastener. In it the bolt, although curved, has a sliding or progressive movement, as distinguished from a pivoted or radial movement. It moves around instead of turning on the center. The result is that it requires no device to secure it in a locked position, and that it cannot be thrown out of position by pressure on the sashes. On the contrary such pressure only tends to make it hold more firmly. The bolt is semicircular in form, and when unlocked it stands in a vertical position; but by drawing the handle down so as to cause it to move through an arc of ninety degrees it is brought into a horizontal position, and so stands directly across or at right angles to the path of the sash. This movement around the guide c' causes one-half or nearly one-half of the length of the bolt to be projected through the slot e^2 beyond the vertical side of the guide. The curved end thus projected passes up around the keeper or projection h' on the other sash, and so draws the meeting-rails firmly and closely together. The handle g', which projects from the rear end of the bolt, operates as a stop to limit the movements of the bolt in its guides.

I am aware that curved bolts provided with curved cases and keepers have heretofore been devised, and do not herein broadly claim such devices; but

What I claim as my invention, and desire to secure by Letters Patent, is—

In a sash-fastener having a curved bolt adapted to move from a vertical into a horizontal position in locking, the combination, with a centrally-arranged fixed guide, of a curved circularly-sliding bolt adapted to move through an arc of 90° (ninety degrees) or more around the fixed guide, and a keeper adapted to coact with and complete the central guide for the curved sliding bolt, substantially as and for the purposes specified.

In testimony whereof I have hereunto set my hand this 29th day of November, A. D. 1882.

PHILIP MATHES.

Witnesses:

W. B. CORWIN,

F. B. KERR.