

No. 806,695.

PATENTED DEC. 5, 1905.

G. F. MONNIN & A. J. C. MECCHI.
WINDOW SCREEN.

APPLICATION FILED SEPT. 20, 1904. RENEWED OCT. 26, 1905.

2 SHEETS—SHEET 1.

FIG. 1.

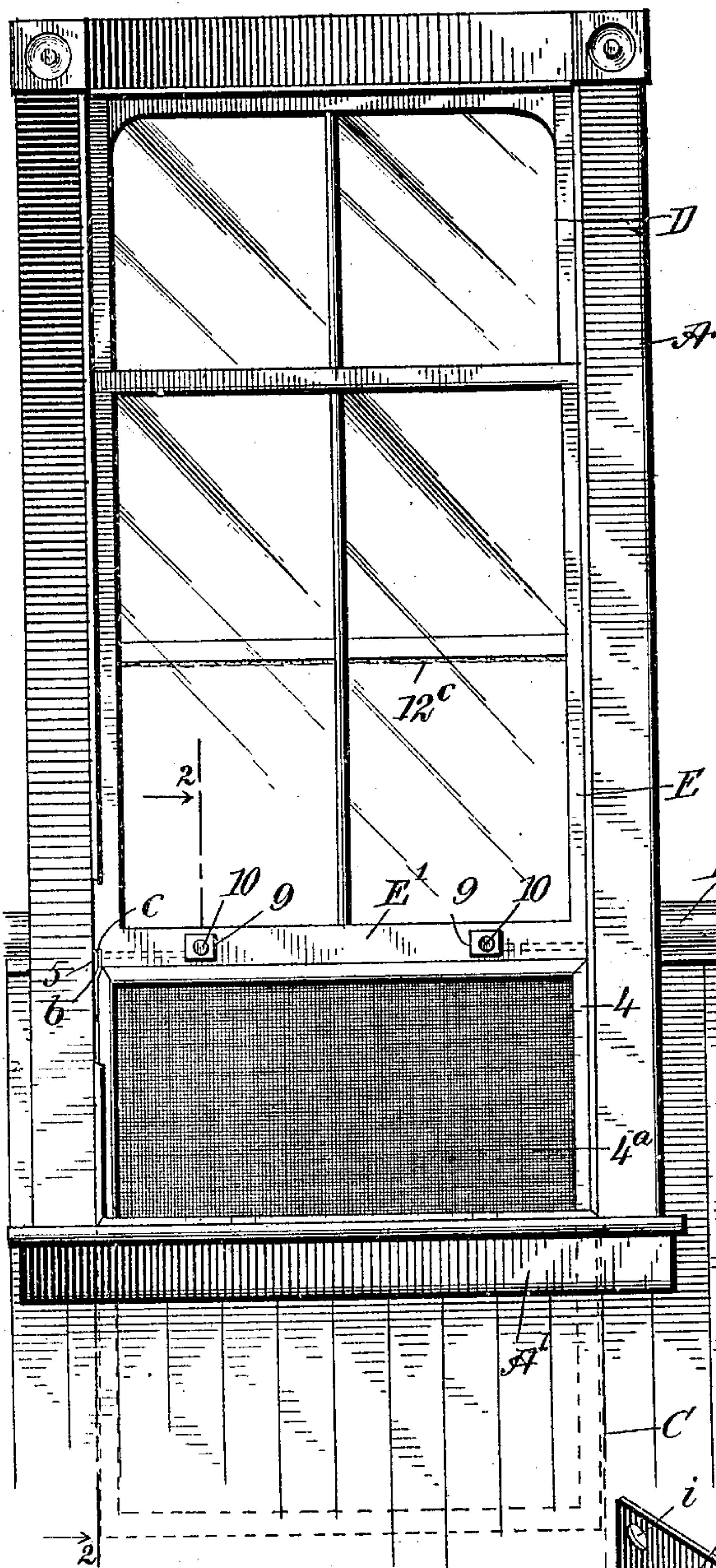


FIG. 2.

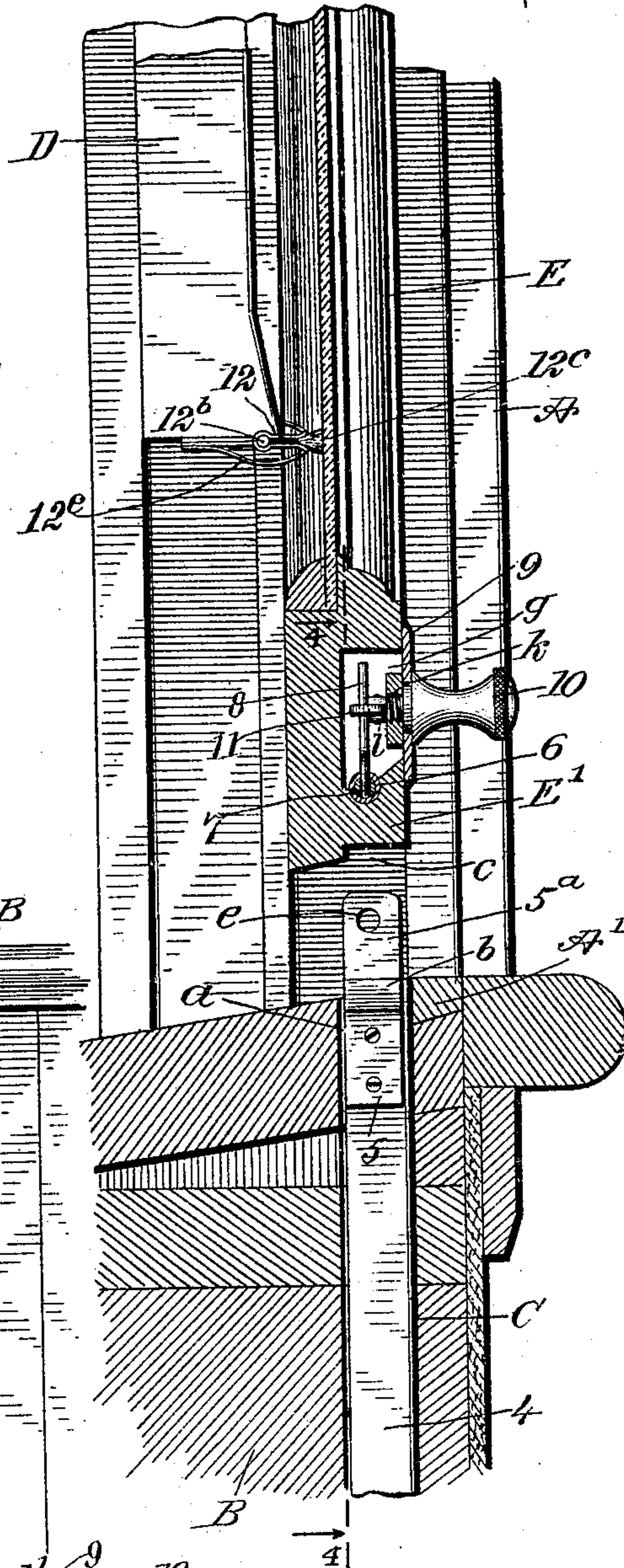
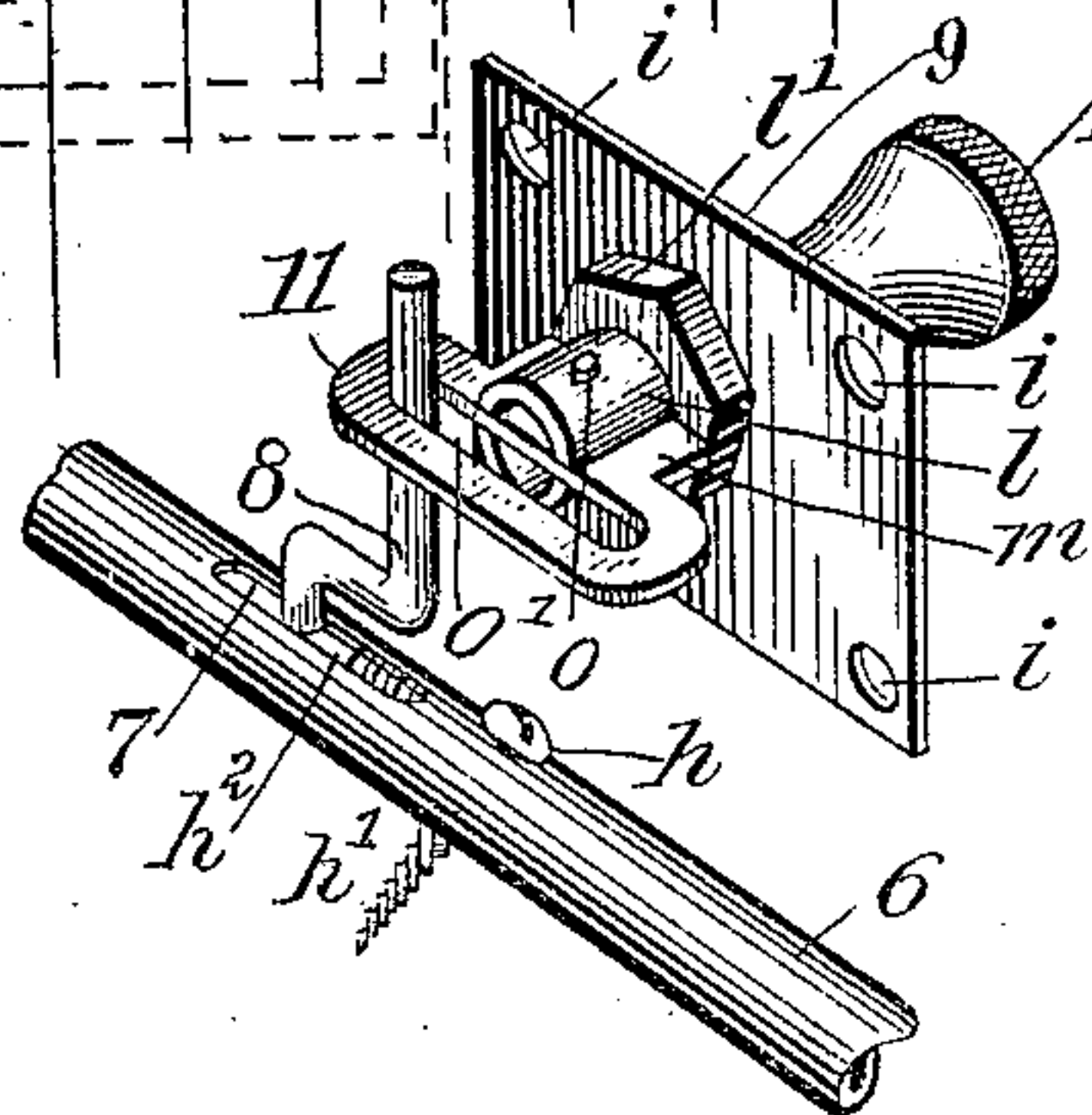


FIG. 3.



WITNESSES:

Wm. B. Smith
Wm. B. Patton

INVENTORS
George F. Monnin
Andrew J. C. Mecchi
BY *Wm. B. Smith*
ATTORNEYS

No. 806,695.

PATENTED DEC. 5, 1905.

G. F. MONNIN & A. J. C. MECCHI.

WINDOW SCREEN.

APPLICATION FILED SEPT. 20, 1904. RENEWED OCT. 26, 1905.

2 SHEETS—SHEET 2.

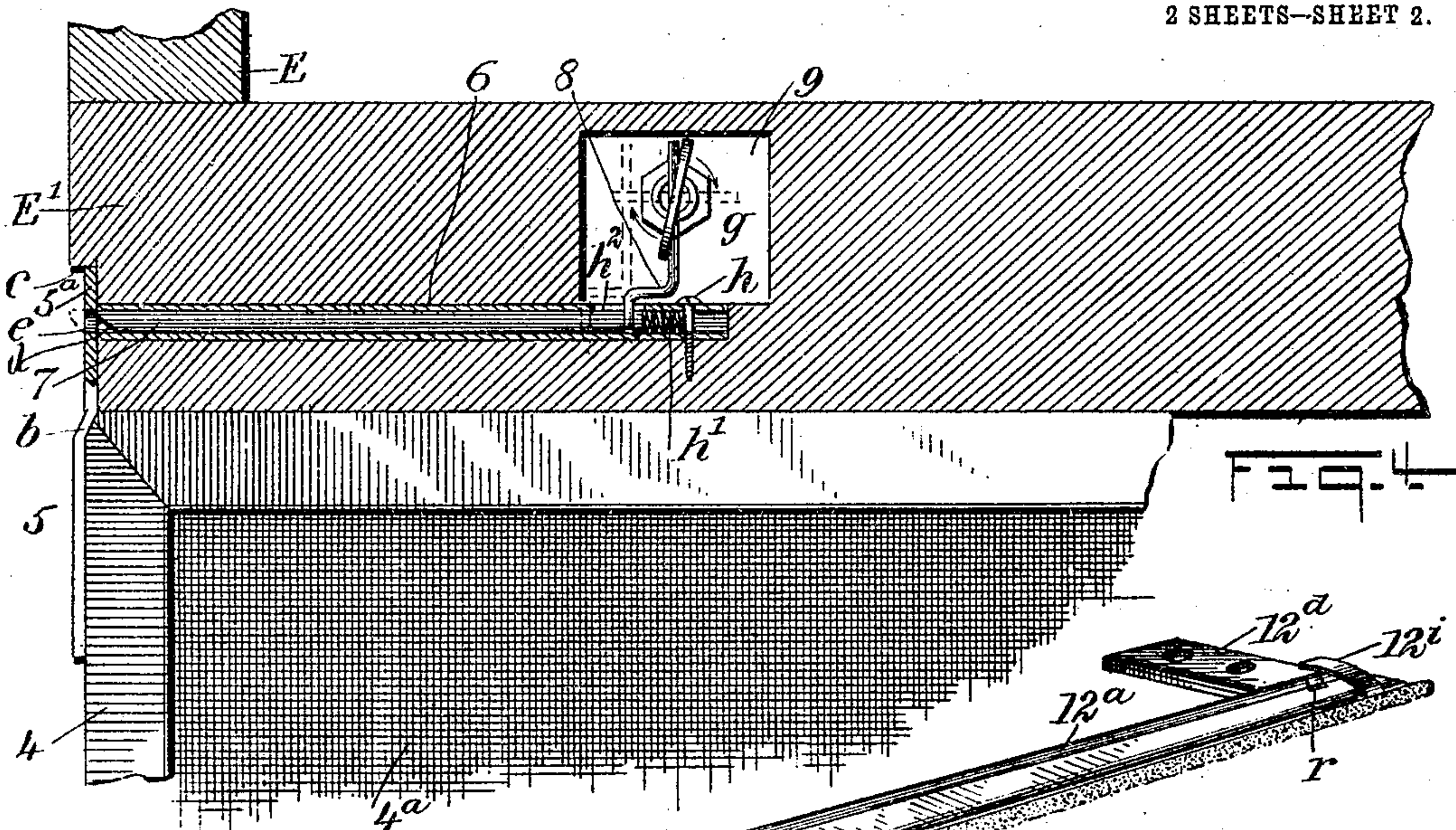


FIG. 4.

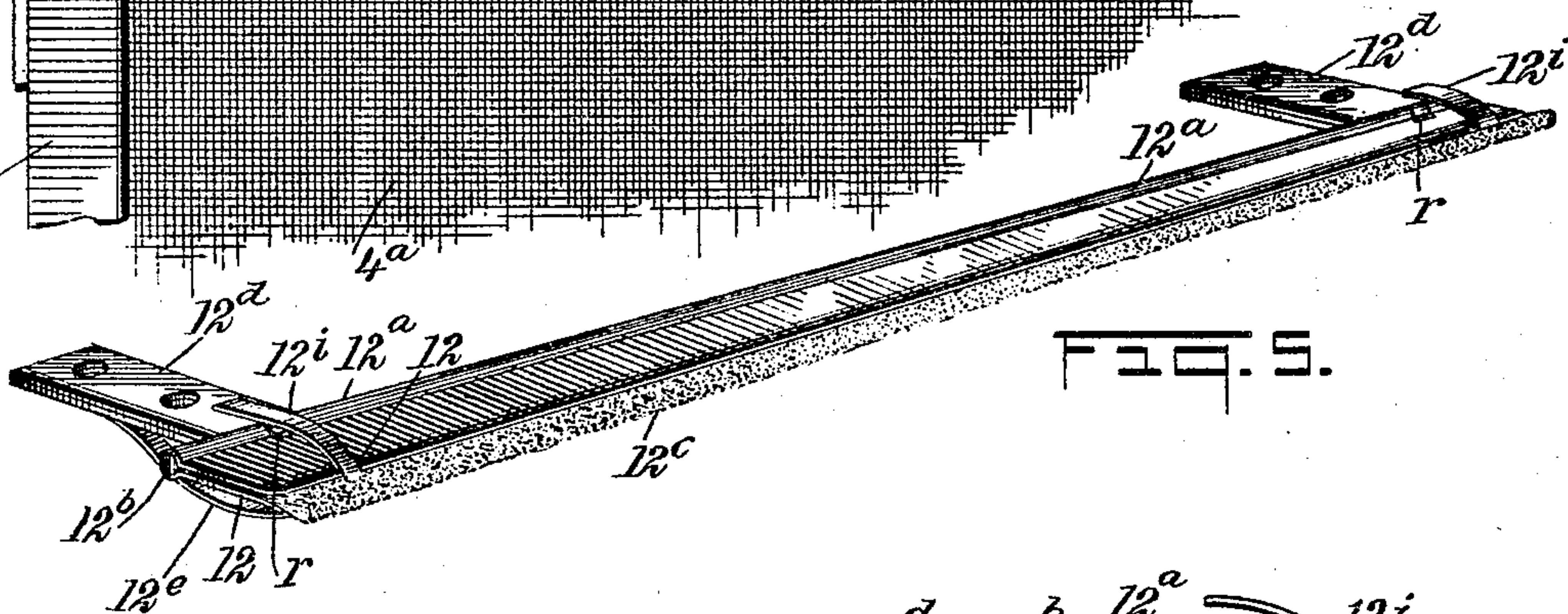


FIG. 5.

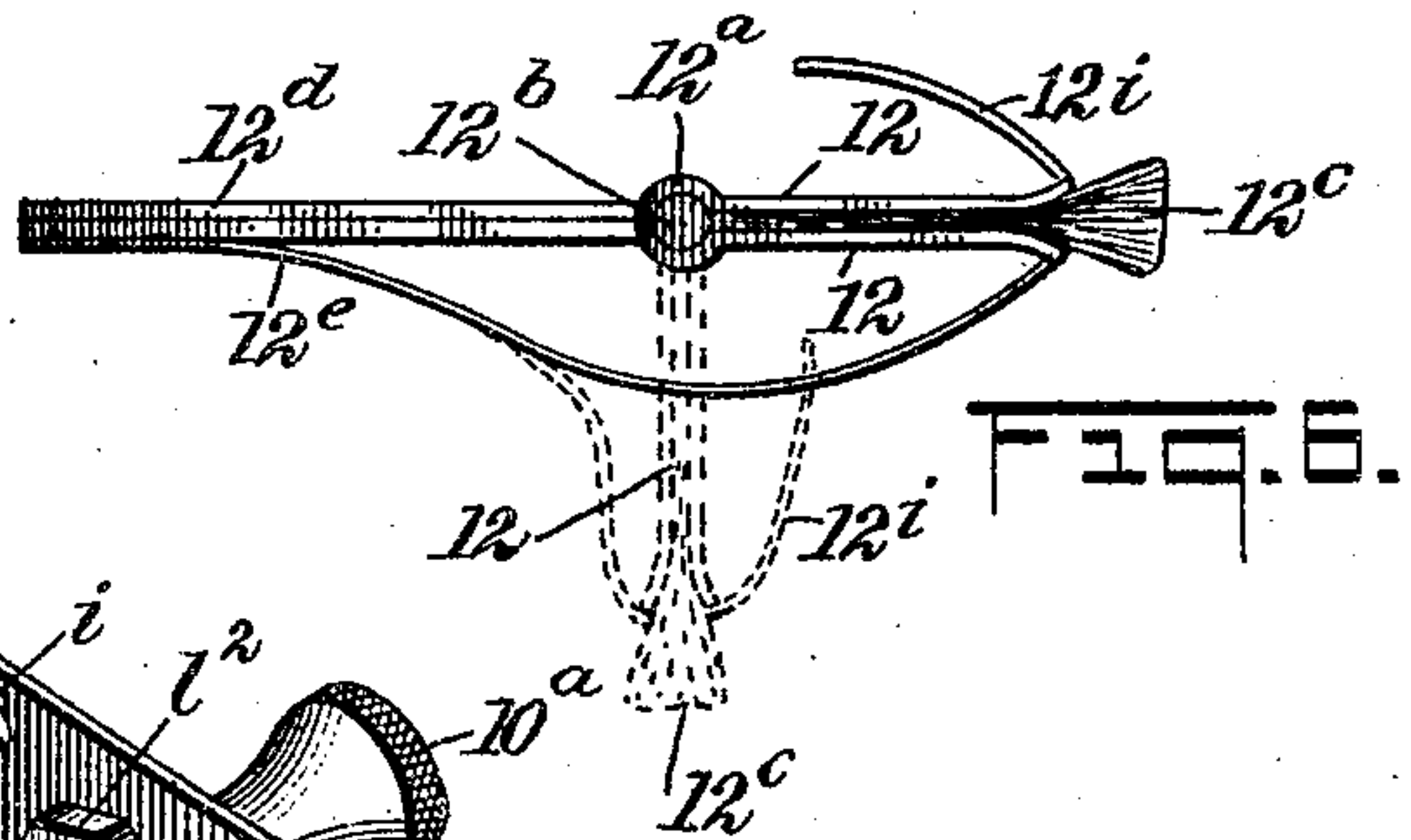


FIG. 6.

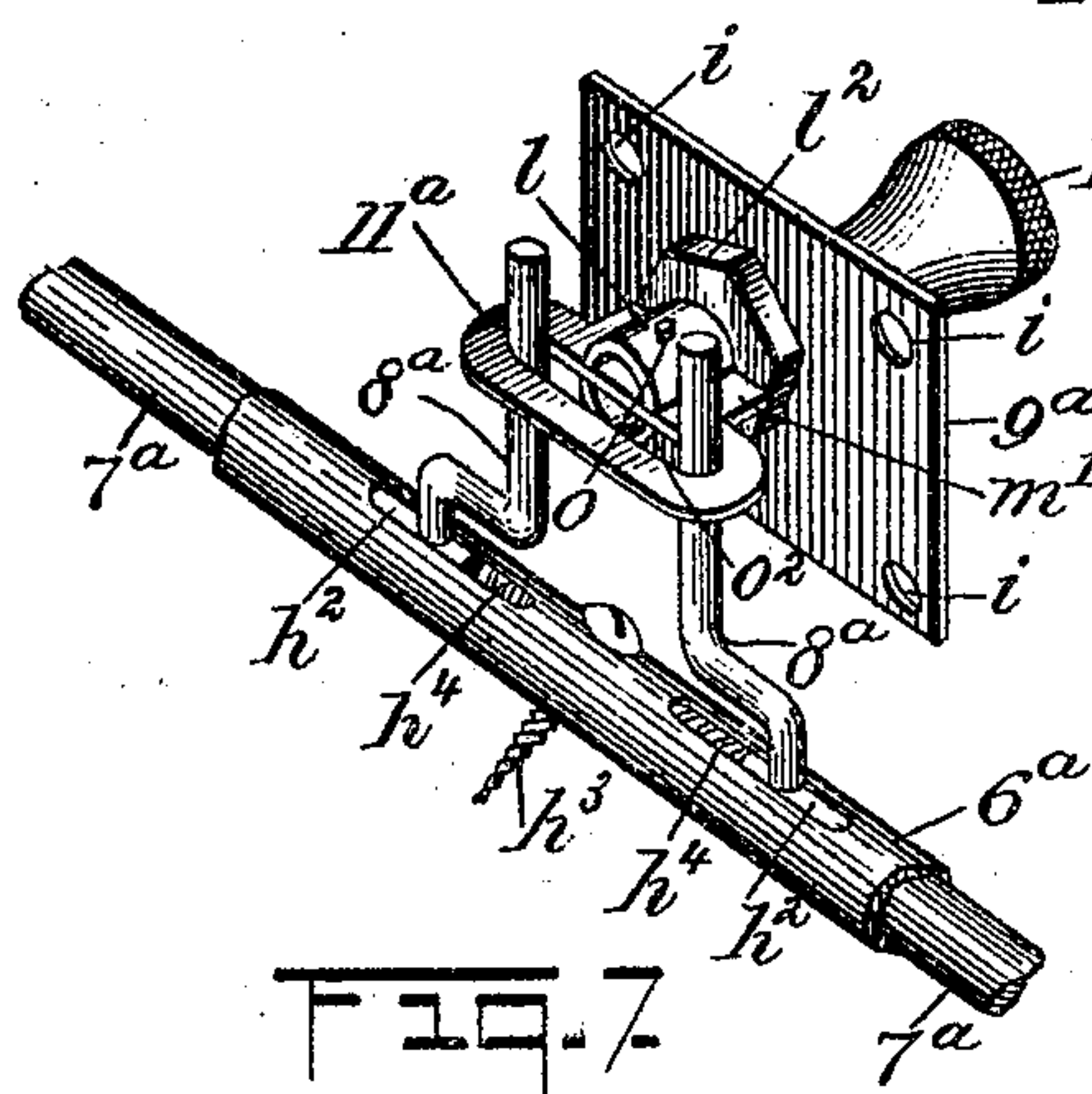


FIG. 7.

WITNESSES:

Wm. L. Patton

Wm. L. Patton

INVENTORS

George F. Monnin
Andrew J. C. Mecchi

BY

Wm. L. Patton

ATTORNEYS

UNITED STATES PATENT OFFICE.

GEORGE F. MONNIN AND ANDREW J. C. MECCHI, OF SAN FRANCISCO,
CALIFORNIA.

WINDOW-SCREEN.

No. 806,695.

Specification of Letters Patent.

Patented Dec. 5, 1905.

Application filed September 20, 1904. Renewed October 26, 1905. Serial No. 284,527.

To all whom it may concern:

Be it known that we, GEORGE F. MONNIN and ANDREW J. C. MECCHI, citizens of the United States, and residents of San Francisco, in the county of San Francisco and State of California, have invented a new and Improved Window-Screen, of which the following is a full, clear, and exact description.

One object of our invention is to provide novel, simple, and effective means for detachably connecting a framed window-screen with the lower sash of a window and for hanging the screen-frame in a receiving-pocket formed in the wall of the building below the sill of the window therein having the improvement applied thereto, whereby the screen when connected with the lower sash may be raised into position for service a corresponding degree when said sash is raised and be returned into the pocket when the sash is lowered.

A further object is to provide novel and effective means for preventing the entrance of flies or other insects between the upper and lower sashes of a window when the lower sash is partially raised or the upper sash partly lowered.

To these ends the invention consists in the novel construction and combination of parts, as is hereinafter described, and defined in the subjoined claims.

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

Figure 1 is an inner side view of a window having the improvement applied and in position for service. Fig. 2 is an enlarged transverse sectional view substantially on the broken line 2 2 in Fig. 1. Fig. 3 is an enlarged detached perspective view of the main portion of the novel means for detachably connecting a window-screen with the lower sash of a window. Fig. 4 is a partly sectional view of novel details substantially on the line 4 4 in Fig. 2. Fig. 5 is a detached perspective view of a novel device for preventing flies or other insects from passing into a room between partly-opened window-sashes. Fig. 6 is an enlarged end view of the device shown in Fig. 5, and Fig. 7 is a detached perspective view of a modified construction for the detachable connection between a lower sash of a window and a window-screen.

The invention is designed for application to

any window of a building in which the sash are held to slide vertically in a casement.

In carrying into effect the features of improvement, A represents a window-casement of any approved construction, and B the side wall of a room in a building of which the casement is a portion. Said side wall, that is shown as partly wainscoted, may be otherwise formed—as, for example, be coated with plaster. In the side wall B a space is provided below the sill of the window-casement A, which may be in the form of a rectangular pocket C, and, as shown in Fig. 2, a vertical slot *a* is formed in the sill A' of the casement A in alignment with the pocket C, thus providing an opening in the window-sill that extends the full width of the casement between its side stiles. The window-sashes D E, that, as usual, are held to slide vertically in the stiles of the casement A, are spaced apart by the ordinary parting-strips which project from the stiles, so that the lower sash E is held to slide directly above the slot *a*.

In the pocket C the rectangular frame 4 of a fine-meshed screen 4^a is loosely fitted, the width and thickness of said frame adapting it to reciprocate in the slot *a* and traverse the grooves in the window-casement that accommodate the side edges of the lower sash E. Two bracket-plates 5 of equal dimensions and preferably having a width equal to the thickness of the screen-frame are provided for the detachable connection of the frame and sash, as is represented for one bracket-plate in Fig. 4.

To adapt the bracket-plates for effective service and afford clearance for other parts hereinafter described, these plates are bent at *b* so as to dispose their upper portions in planes at one side of and parallel with their lower portions, or, in other words, producing offsets at said points *b*. The lower portions of the bracket-plates 5 are secured upon the side edges of the screen-frame 4 at and near the top rail of said frame, which disposes the upper portions 5^a of said plates above said top rail.

In the side edges of the lower sash E opposite rabbets *c* are formed at and near the lower transverse rail E' of said sash, and, as indicated at the left in Fig. 4, the upper portions 5^a of the bracket-plates 5 slide into and occupy the rabbets *c* when the sash E is completely lowered, it being understood that the upper

transverse edge of the screen-frame 4 is supported flush with the surface of the sill A' when the screen-frame by its gravity is seated in the pocket C. In the lower transverse rail 5 E' of the sash E a perforation is formed at a suitable distance from the lower edge of the rail and parallel therewith, said perforation receiving a guide-tube 6, which may extend completely through the perforation, having its ends flush with the sides of the rabbets *c*, or two tubes may be employed that are of proper length and each be inserted in a perforation, as shown for one tube in Fig. 4. Two similar latch-bolts 7 are loosely fitted in the tube or tubes 6 and have similarly-beveled ends *d*, that in service may each be projected through a perforation *e*, formed in the respective bracket member 5^a and opposite the corresponding end of the guide-tube 6. It may here be explained that if the window is of considerable width the means employed for controlling the latch-bolts 7 may be duplicated, each device consisting of the following details: In the lower transverse rail E' of the lower sash E, at a suitable distance from each side edge of said sash, a recess *g* is formed, these similar recesses being open at the side of the rail that is within the room. The recesses *g* are of such depth as to expose the upper side of the guide-tube 6 therein, and at a point in the guide-tube within each recess a vertical screw-hole is formed in the tube, which receives a screw *h*.

An expanding-spring *h'* is placed in the tube 6 for contact with each screw *h*, and, as appears in Fig. 4, where one spring is shown, said spring seats upon the body of the screw with one end and at the opposite end is in contact with the inner end of a respective latch-bolt 7, the tension of each spring being adapted to press the latch-bolt it contacts with through a perforation *e* when the bolt is disposed opposite the perforation, which occurs when the sash E is completely lowered.

In each latch-bolt 7, near its inner end, one end of a pusher-arm 8 is secured, this arm, that may be bent into a substantially Z shape, passing at one end through a slot *h*², that is longitudinally formed in the guide-tube 6, the longer members of the pusher-arms projecting upward and parallel with each other when the parts of the device are assembled for service.

A face-plate 9 is provided for each recess *g*, said plates being flat, preferably rectangular planchets of sheet metal of such dimensions as adapt them to cover the respective recesses when secured in place by screws that may be inserted through perforations *i* in the plates and thence into the sash-rail. A knob 10 is furnished for each face-plate 9, the knobs each having a reduced shank member *k*, that is fitted into a circular opening at the center of a respective face-plate, said shank having a threaded extension and a plain member pro-

jected beyond the thread, as is shown at *l* in Figs. 2 and 3, this extension being either tubular, as shown, or solid, if preferred. A nut *l'* is screwed upon each threaded extension of a knob-shank *k*, and in the plain portion *l* thereof an axial slot is formed for the reception of a yoke-plate 11. Each yoke-plate 11 is formed with flat parallel sides, a laterally-elongated body, and a tongue *m*, extended from one side edge of the body, this tongue being fitted into the slot in the part *l* of the shank *k* on each knob 10 and therein secured by a key or cross-pin *o*. In each yoke-plate 11 a longitudinal slot *o'* is formed, that receives the main or upper portion of a respective pusher-arm 8, which projects above the yoke-plate a suitable distance to insure its remaining in the slot when the yoke-plate is rocked by manipulation of the knob 10. The nut *l'* provides a collar for the proper rotatable support of the knob 10 and also serves as a supporting abutment for the tongue of the yoke-plate 11.

It will be seen that by simply lowering the sash E the latch-bolts 7, that were protruded, as shown at the left of Fig. 4 by dotted lines, will be pressed into the tube 6 by an engagement of their beveled noses with the upper transverse edges of the bracket-plates 5. This serves to compress the springs *h*², the stress of which will project the beveled ends of the latch-bolts through the perforations *e* in the respective bracket-plates 5 when the window-sash E is closed and its lower edge is in contact with the upper edge of the screen-frame 4.

The elevation of the lower sash E when connected with the screen-frame 4 and screen 4^a will correspondingly raise the screen, and obviously the latter will prevent an entrance of insects into the window at any elevation given to the lower sash.

When it is desired to release the window-sash E from the frame 4, this may be readily effected by simply turning the knobs 10, so as to rock the yoke-plates 11 into engagement with the pusher-arms 8, which will retract the latch-bolts 7, whereupon a slight elevation of the sash while the latch-bolts are held retracted will release the screen-frame and permit the window to be opened by elevation of the lower sash, the knobs 10 affording convenient handholds for such a purpose.

When the improved screen is to be applied to a narrow window, the sashes of which are comparatively light, so that one knob 10^a will enable the lower sash of the window to be raised and lowered, the construction of the device for retracting the latch-bolts may be slightly changed in relative arrangement of parts to adapt one knob and one yoke-plate for simultaneously retracting the bolts, this modified construction being shown in Fig. 7. In this case the guide-tube (indicated by the reference character 6^a) is slotted longitudinally at two points *h*² equally distant from the center

of length, as shown, and at said center a screw h^3 is inserted through a transverse perforation in the tube and into the lower sash-rail, that the tube is located in, as before explained.

5 Two similar coiled springs h^4 are placed in the tube—one at each side of the screw h^3 and in contact with it. Two slidable latch-bolts 7^a are inserted into the respective ends of the guide-tube 6^a and seat upon the ends of the

10 springs h^4 , the remaining ends of these latch-bolts (not shown) having beveled ends normally projected somewhat beyond the corresponding ends of the guide-tube, as described with regard to the latch-bolts 7. In each

15 latch-bolt 7^a , near its inner end, two pusher-arms 8^a , similar to the pusher-arms 8, are secured by like ends and are first passed down through the respective slots h^2 , and the main upright members of said arms, which are dis-

20 posed parallel with each other, are spaced apart at an equal distance from the screw h^3 . A single face-plate 9^a , similar to the face-plates 9, is placed over a recess similar to the recesses g , formed in the lower cross-rail of the lower

25 sash, that supports the latch-bolts 7^a . A knob 10^a is held to turn in a circular opening in the face-plate 9^a by a collar-nut l^2 , screwed upon a shank extension of the knob, said extension having an axial slot wherein a tongue m' on

30 the yoke-plate 11^a , which is like the yoke-plates 11, is inserted and secured by a cross-pin o or the like. The slot o^2 in the yoke-plate 11^a is similar to the slots o' in the yoke-plates 11 and is of such length as will permit

35 the free insertion of the pusher-arms 8^a upward therethrough.

Assuming that the window-sash—such as E, but of less width—is held to slide in a window-casement that has its sill longitudinally slotted

40 for the free reciprocation of a window-screen such as described, which when out of use is held in a pocket below said sill, and that the screen-frame is furnished with bracket-plates 5, having laterally-perforated members 5^a ,

45 that will loosely embrace the side edges of the window-sash, so as to dispose these perforations of the bracket-plates opposite the ends of the guide-tube 6^a when the lower sash is closed, it will be evident that the act of closing the lower sash upon the sill of the case-

50 ment will, as hereinbefore described, cause the beveled ends of the latch-bolts to enter the perforations formed in the bracket-plates 5 and latch fast to said bracket-plates so that

55 the screen and window-sash are secured together, the elevation of the sash correspondingly moving the screen that covers the opening below the sash. When the lower sash is to be released from the window-screen, this

60 may be readily effected by a partial rotation of the knob 10^a , which will correspondingly rock the yoke-plate 11^a and draw the pusher-arms 8^a toward each other against stress of the springs h^4 , which will retract the latch-

65 bolts 7^a and release them from the bracket-

plates 5, the knob 10^a affording convenient means for the elevation of the sash.

As it is at times desirable that the lower sash of a window having the improved screen be raised partially, and, as is well known, if

70 the lower transverse rail of the lower sash is not raised so as to meet the lower transverse rail of the upper sash, a free passage is left between the glazing of the sashes for the in-

75 gress of insects into the room. To prevent the entrance of insects between the window-sashes when the lower one is partly raised, a novel simple auxiliary protection is provided that when employed along with the improve-

80 ments already described will effect the exclusion of flies or other insects in a perfect manner without regard to the degree of elevation given to the lower sash, this coacting feature being represented in Figs. 1, 2, 5, and

85 6 and comprising the following details: A preferably plate-metal brush-head is formed of an elongated rectangular sheet of metal, which is return-bent at the center of width, thus affording two like clamping-leaves 12,

90 that are integral with a tubulation 12^a , wherein a pintle-rod 12^b is tightly held. The clamping-leaves 12 may have their free edges curved slightly outward and receive between them

95 brush material 12^c , which may be bristles or other available material, that is disposed evenly and projects sufficiently from the edges of the clamping-leaves for effectual service as a brush, the clamping action of said leaves

100 serving to hold the bristles or the like in place. In the tubulation 12^a , a short distance apart, two notches are cut, these notches permitting

105 a looped member r on a bracket-plate 12^d to loosely embrace the pintle-rod at each notch, thus affording a hinged connection for two similar bracket-plates with the pintle-rod.

110 Upon the normal lower side of each bracket-plate 12^d a leaf-spring 12^e is secured by one end and thence is curved downward forward and ends in an upturned hook member 12^f , that is located between adjacent bristles 12^c

115 and may rest upon the free edges of the clamping-leaves 12. The length of the brush-head is so proportioned that the brush proper will in length equal that of the width of the lower sash between its side members, and thus be

120 adapted to have contact with the glazing of the sashes throughout their width when the brush is in position for service. The bracket-plates 12^d are secured upon the lower edge of the lower cross-rail on the upper sash D by

125 means of screws passed through perforations in said plates, and the length of the brush-head, together with that of the brush material, is such that the brush will have contact with the glass in the lower sash when the latter is raised

130 from the window-sill.

It will be seen that the brush-head and brush proper from their position close the space between the lower rail of the upper sash and the glass in the lower sash, so that insects will be

excluded at any point of upward movement given to the lower sash. As indicated by dotted lines in Fig. 6, when the lower sash, that may have been elevated, is lowered for its closure upon the window-sill, the brush will yield against stress of the springs 12^e to permit the meeting-rails of the sashes D E to have lateral contact, as usual.

Having thus described our invention, we claim as new and desire to secure by Letters Patent—

1. The combination with a window-casement having a slot in its sill, and a lower window-sash slidable in the casement, of a rectangularly-framed window-screen, slidable in the slot and in the casement, two bracket-plates secured on the side edges of the screen-frame and projecting above said frame, the upper portions of said plates each having a perforation, latch-bolts held to slide in the lower sash-rail, and spring-pressed toward the bracket-plates to enter the holes therein when the sash is closed, and means for retracting the latch-bolts.

2. The combination with a window-casement having a slot in its sill, a lower sash slidable in the slot and in the casement and having a longitudinal perforation in its lower rail, and latch-bolts slidable in the perforation, of springs adapted to press the latch-bolts outward, and means for retracting said latch-bolts.

3. The combination with a window-casement having a slot in its sill, a lower sash slidable in the slot and in the casement and having a longitudinal perforation through the lower rail thereof, and a guide-tube fitted in the longitudinal perforation, of spring-pressed

latch-bolts slidable in the guide-tube, arms on the latch-bolts, working in the slots in the guide-tube, and means engaging the arms and by manipulation adapted to retract the latch-bolts.

4. In a device of the character described, the bolt-retracting means, comprising a guide-tube held bedded in the lower sash-rail and having slots therein, bolts held to slide in the guide-tube, springs pressing the bolts outward, pusher-arms carried by the bolts and passing through the slots in the guide-tube, a face-plate secured on the lower sash-rail over a recess therein, a knob having a shank and held to rock in an opening in the face-plate, and a slotted yoke-plate carried by the knob-shank, said plate receiving the pusher-arms in its slot.

5. In combination with a screen, detachably connected with the lower edge of a lower window-sash, and working through a slot in the window-casement, the insect-excluder adapted to prevent insects from passing between two window-sashes, comprising a brush-head held to rock on the lower cross-rail of the upper window-sash, brush material carried by said head and normally contacting with the glazing of the lower sash, and a spring pressing upon the brush-head for its projection toward said glazing.

In testimony whereof we have signed our names to this specification in the presence of two subscribing witnesses.

GEORGE F. MONNIN.

ANDREW J. C. MECCHI.

Witnesses:

J. P. MONNIN,

J. H. HILLEBRANDT.