

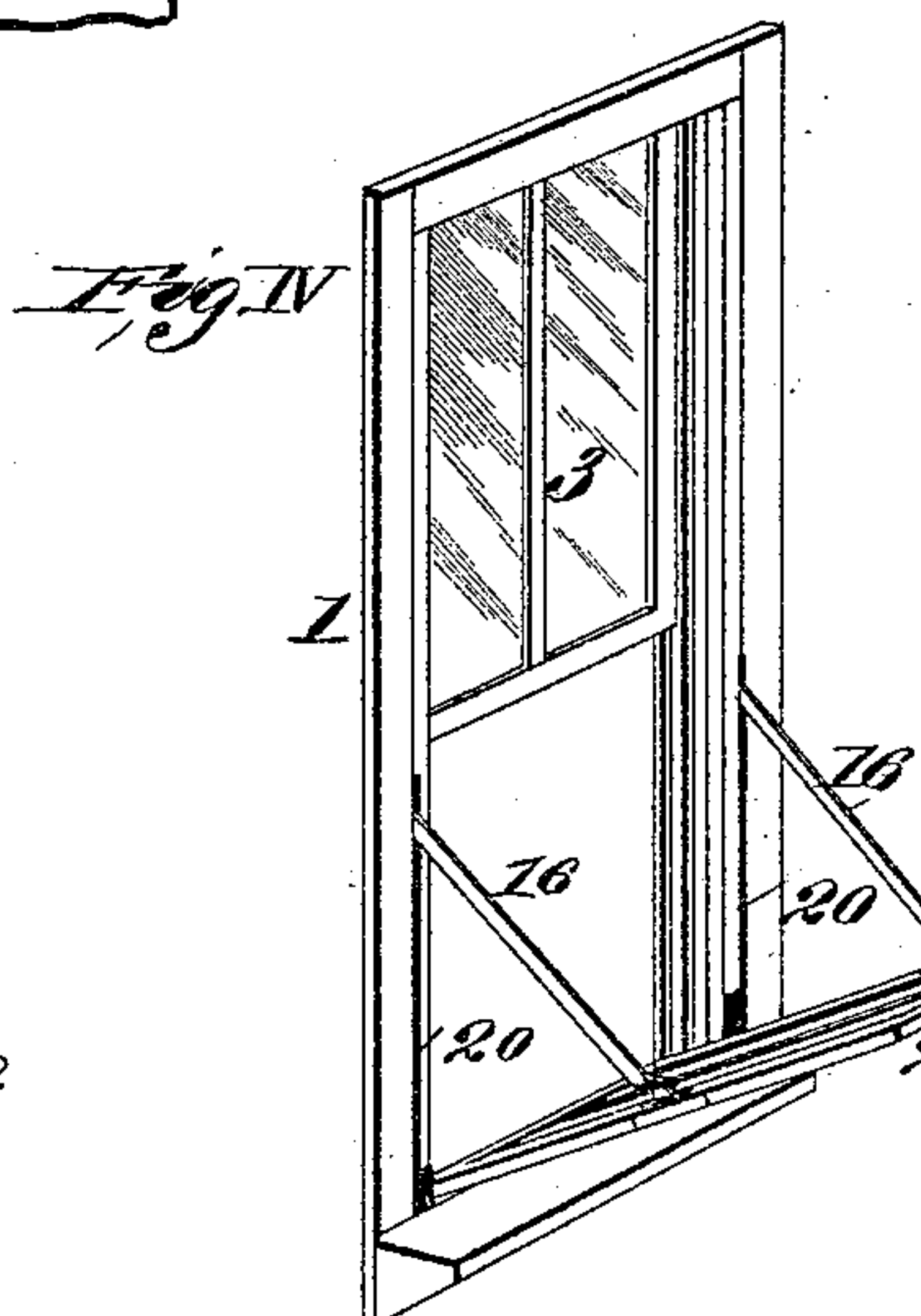
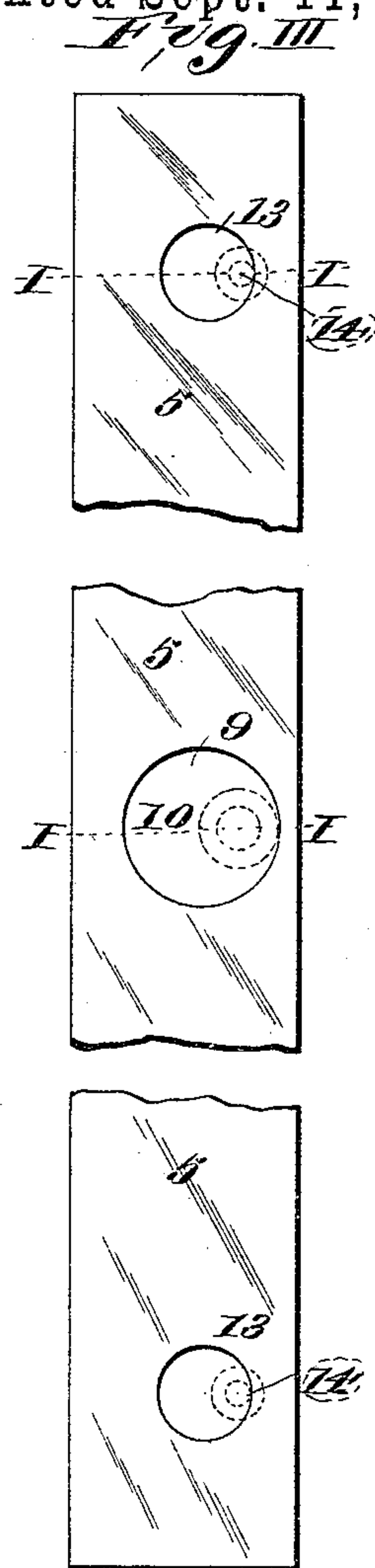
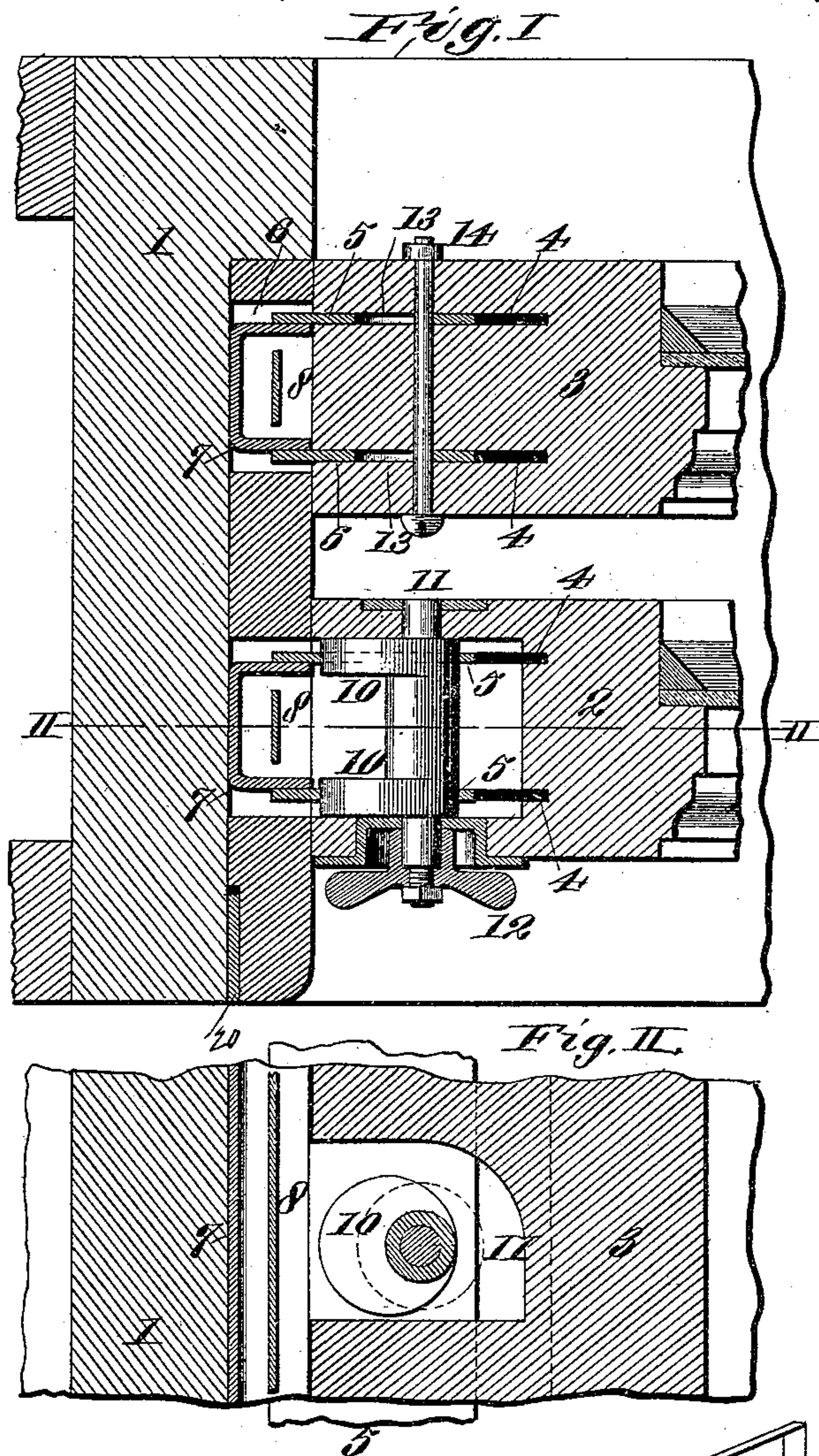
(No Model.)

2 Sheets—Sheet 1.

J. LEHNBEUTER.
REMOVABLE WINDOW SASH.

No. 525,987.

Patented Sept. 11, 1894.



Attest:
Chas. Edwards
A. M. Ebersole

Inventor:
Jos Lehnbeuter.
By Wright Bros

(No Model.)

2 Sheets—Sheet 2.

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Fig. VII.

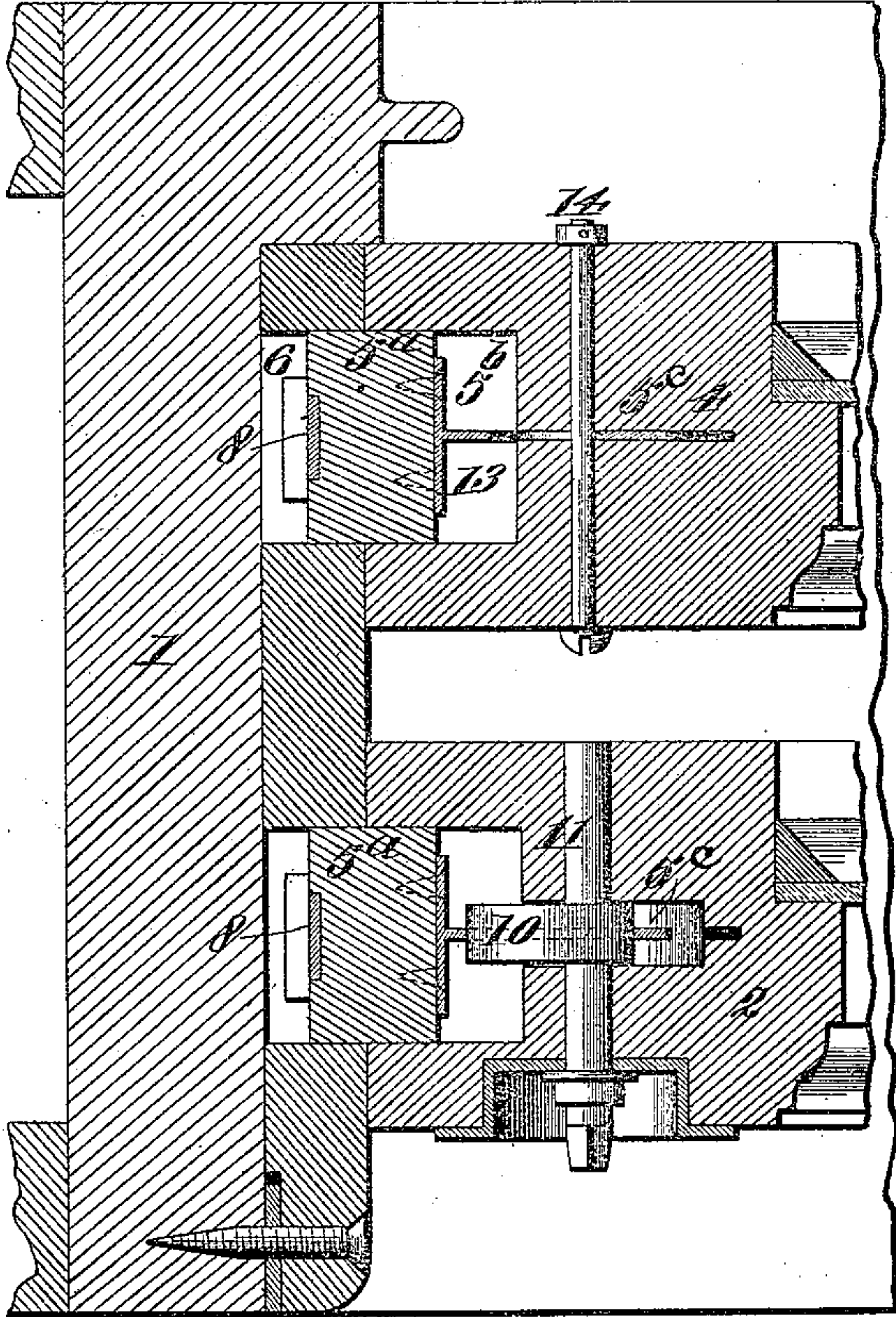


Fig. VIII.

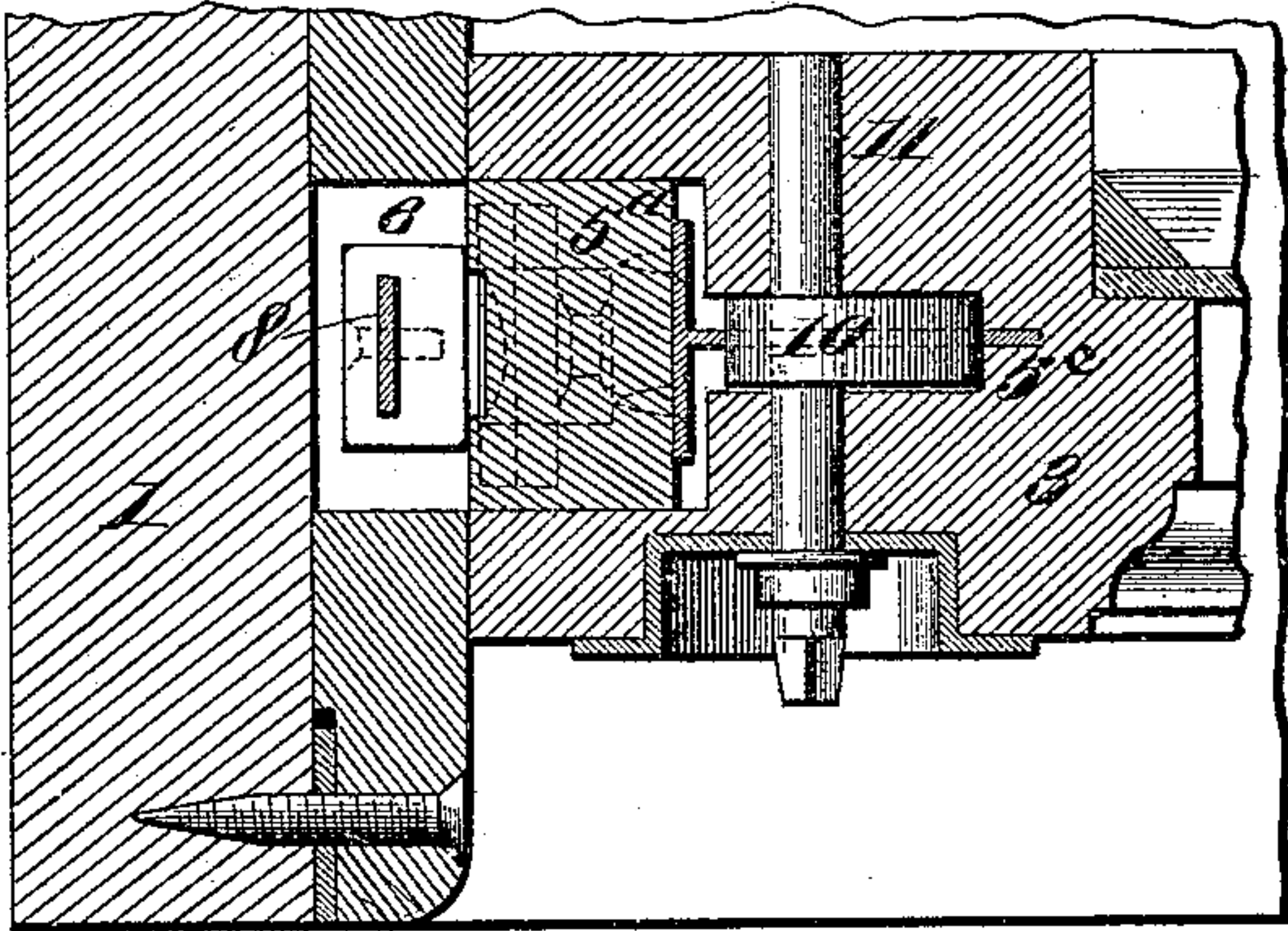


Fig. IX.

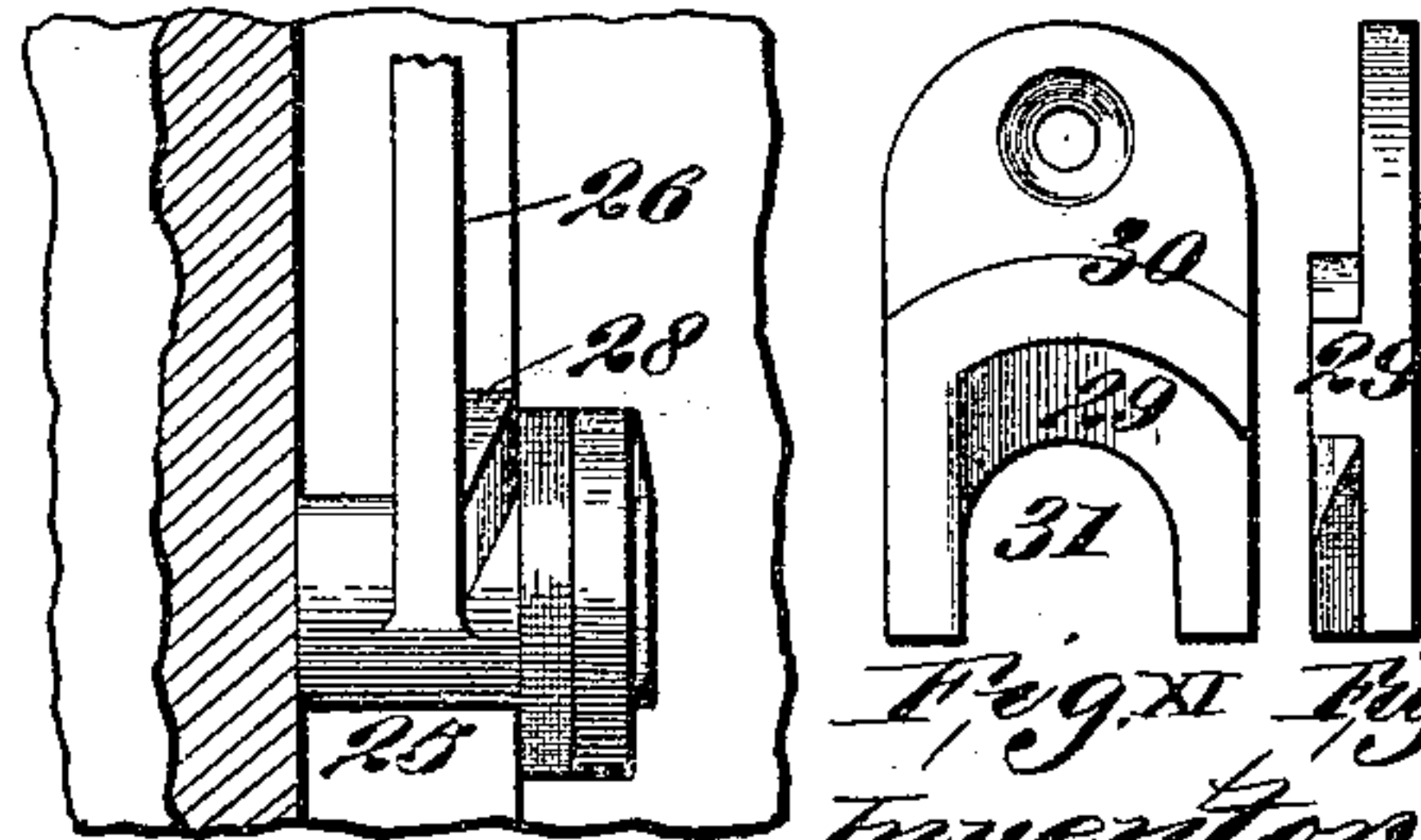
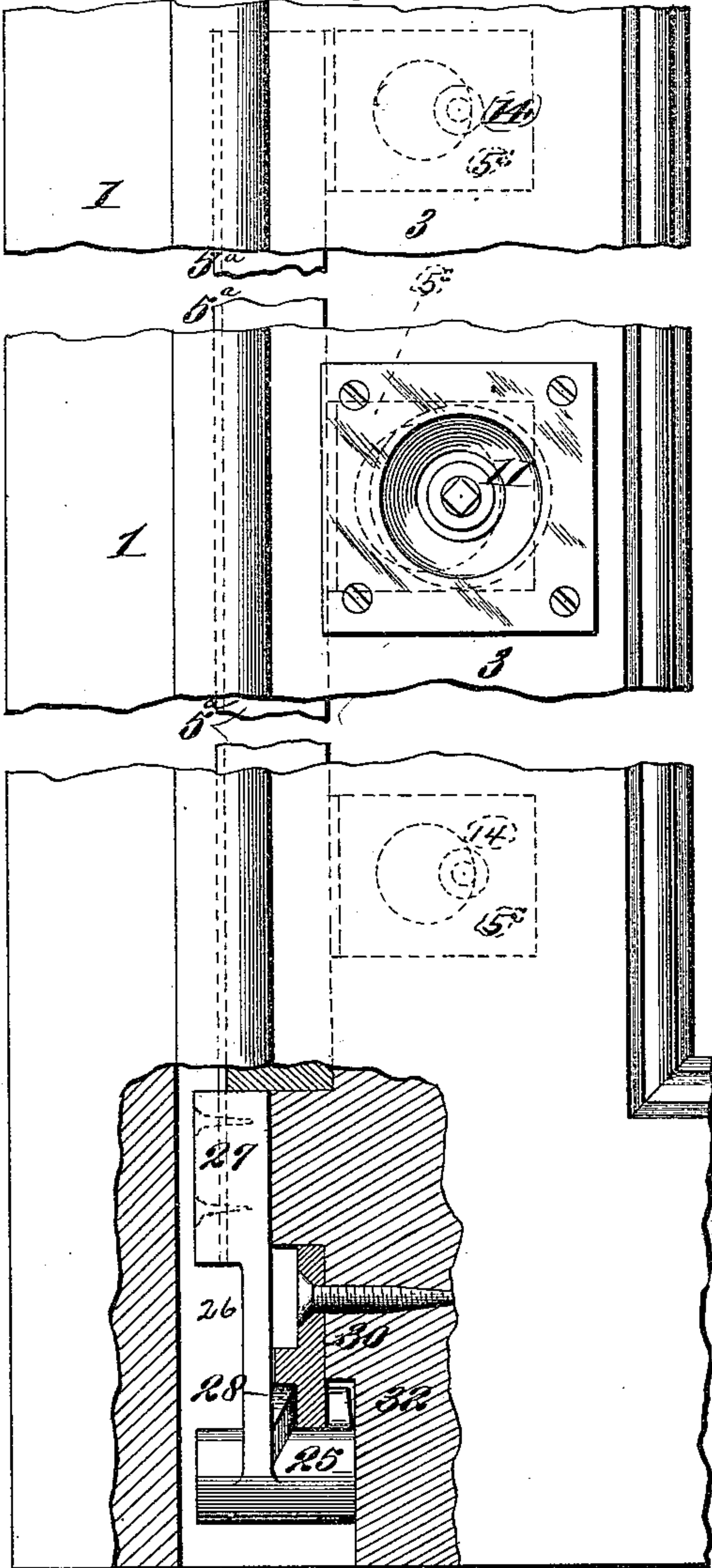


Fig. XI.

Inventor

Jos Lehnbeuter.

By Wright & Bond

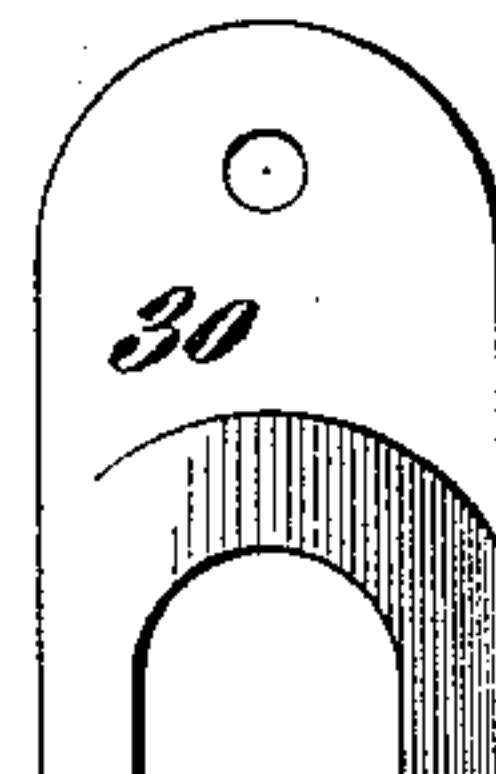


Fig. XIII.

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UNITED STATES PATENT OFFICE.

JOSEPH LEHNBEUTER, OF ST. LOUIS, MISSOURI.

REMOVABLE WINDOW-SASH.

SPECIFICATION forming part of Letters Patent No. 525,987, dated September 11, 1894.

Application filed April 2, 1894. Serial No. 505,982. (No model.)

To all whom it may concern:

Be it known that I, JOSEPH LEHNBEUTER, of the city of St. Louis, in the State of Missouri, have invented a certain new and useful

5 Improvement in Removable Window-Sashes, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming part of this specification.

10 My present invention relates to that class of window sashes, which are removable from the frame for the purpose of cleaning the glass; and the object of my present invention is to provide a simple and effective means for

15 holding the sash in the frame, and which, when it is desired to clean the glass, can be easily adjusted or moved so as to permit the sash to be swung out of the frame; and consists in features of novelty hereinafter fully

20 described and pointed out in the claims.

Figure I is a detail, horizontal section, illustrative of my invention; the upper part of the figure being a section on the upper section line I—I, Fig. III, and the lower part of the

25 figure being a section on the lower section line I—I, Fig. III. Fig. II is a vertical section, taken on line II—II, Fig. I. Fig. III is a side view, of the plate within which the eccentric works. Fig. IV is a perspective view,

30 showing the lower sash in its cleaning position. Fig. V is an enlarged, detail view, showing the manner of connecting the supporting bars to the sash when the window is to be cleaned. Fig. VI is a detail, top view, showing

35 part of the sash. Fig. VII is a view similar to Fig. I, but showing a slight modification. Fig. VIII is a view, corresponding to the lower part of Fig. VII, but showing the adjustable strip in its outer position. Fig. IX

40 is a detail, side view, part in section, and part broken away. Fig. X is an edge view of the cam bracket, for moving the pivot pin. Fig. XI is an outside face view of same. Fig. XII

45 is a side view, showing the pivot pin in its working position. Fig. XIII is an inner face view of the bracket.

Referring to the drawings, 1 represents part of a window frame; 2, represents the lower sash, and 3 the upper sash.

50 In the form of my invention shown in Figs. I to VI inclusive, each sash is provided with

a pair of vertical slots 4, in each of which fits a strip 5.

Moving within openings 6 in the frame 1 are channel bars 7, which form the bearings 55 for the strips 5, when in their outer positions, as shown in Fig. I. The bars 7 are preferably not so wide as the openings 6, so that the strips 5 fit outside of the bars, while the space within the channel bars is utilized to receive 60 the sash-weight cords or straps 8.

Each strip 5, preferably about mid-way of its length, is provided with an opening 9, (see Fig. III,) to receive an eccentric 10 on a shaft 11, which may be turned by means of a but- 65 ton 12, as shown in Fig. I, or may be formed to receive a key, as shown in Fig. VII. Near its ends, each bar is provided with an opening or hole 13, to receive a rod or wire 14, that passes through the sash, as shown in the up- 70 per part of Fig. I, and in the upper and lower part of Fig. III. When the sash is in position in the window, the strips 5 bearing against the channel bars 7, serve to hold the sash in the frame, and guide it in its vertical 75 movement.

When the sash is to be cleaned, the eccentrics 10 are turned by means of the button 12, or other device applied to the shaft 11, and the strips 5 are moved inwardly in the slots 80 4, so as to be free of the channel bars 7, and the sash can then be swung outwardly from the frame, for the purpose of cleaning the glass. When the glass has been cleaned, the sash is swung back again into its vertical po- 85 sition, and the eccentrics turned back to their normal position, when the strips 5 will again engage with the channel bars 7.

By the use of eccentrics for moving the strips 5, a forcible pressure is obtained, as 90 well as a uniform, gradual movement of the strips, and the device is easily applied, and is cheap.

It will be understood that the eccentrics will impart a circular movement to the strips, 95 and for the purpose of guiding the strips at top and bottom, when they are moved at the center by means of the eccentric, I employ the pins 14 fitting in the openings 13 in the strips. The openings 13 being circular, and 100 the movement imparted to the strips by the eccentric being in the arc of a circle, the sur-

face of the openings 13 will bear constantly against the pins 14 as the strips are moved. The use of the eccentrics also provides for a simple means of guiding the strips at top and bottom; that is to say, inasmuch as the eccentrics impart a circular movement to the plates, the guide is formed by simply making a round hole 13 in each strip, and driving a pin through the sash, so as to fit in the openings in the strips.

When the sash is swung out to be cleaned, it may be either supported by the sash-weight cords, or it may be supported by means of hooks 16, hinged at their upper ends to the window frame, and the free ends of which are adapted to fit in openings 17 formed in brackets 18 secured to the sash, the brackets having pins 19 to receive the hooks. (See Figs. V and VI.) When the hooks are disengaged from the sash, they drop back into grooves or openings 20, formed in the window frame.

In Figs. VII to IX inclusive, I have shown a slight modification, wherein each sash has a strip 5^a, fitting in a groove 5^b in the sash, and adapted to be moved into the groove or space 6 in the window frame. In this construction, instead of the strip 5 three short sections 5^c are employed, as shown by dotted lines, Fig. IX, secured to the strip 5^a, and in this construction, as in the others, the plates 5^c are moved by the eccentrics 10, and are guided by the pins 14 fitting in the openings 13. These plates 5^c also serve to guide the strip 5^a and hold it from twisting when moved to its outer position, or when it is in engagement with the window frame.

In Figs. IX to XIII inclusive, I have shown a pivot pin, which carries the sash, and which is automatically moved into engagement with the frame as the sash is swung out of a vertical position. There is a pin at each side of the sash, and each pin 25 has an arm 26, to which the sash weight cord or strap is se-

cured, as shown at 27, Fig. IX. Each pin has a cam face 28, which is engaged by a similar face 29 on a bracket 30 secured to the sash. The bracket 30 has an opening 31, to receive the pin 25, and back of the bracket the pin has a lug 32, which bears against the inner face of the bracket, the inner face of the bracket having a recess or cut-away portion 33, so that as the pin is forced outwardly by the cams 28 and 29, the projection moving in the cut-away portion 33 does not interfere with the movement of the pin. The pins 25 are thus forced against the frame as the sash is swung out and serve to hold the bottom of the sash from movement.

My invention, in either one of its forms, may be used in a file or book case, and the invention is capable, also of being applied to any kind of sliding doors.

I claim as my invention—

1. In a removable window sash the combination of a strip fitting in the sash, and adapted to be moved into an opening in the window frame, separate plates secured to the strip and fitting in grooves back of the strip, and means for moving the plates, substantially as and for the purpose set forth.

2. In a removable window sash, an adjustable pivot device, consisting of a pin 25, having an arm 26, a cam face 28, a bracket 30 having a cam face 29, and a lug 32 on the pin 25, inside of the bracket; substantially as and for the purpose set forth.

3. In a removable window sash, the combination of a strip 5^a, and separate plates 5 connected to the strip 5^a, eccentric 10, means for moving the eccentric, and rods 14 fitting in perforations in the end plates 5; substantially as set forth.

JOSEPH LEHNBEUTER.

In presence of—

C. G. EDWARDS,
A. M. EBERSOLE.