

(No Model.)

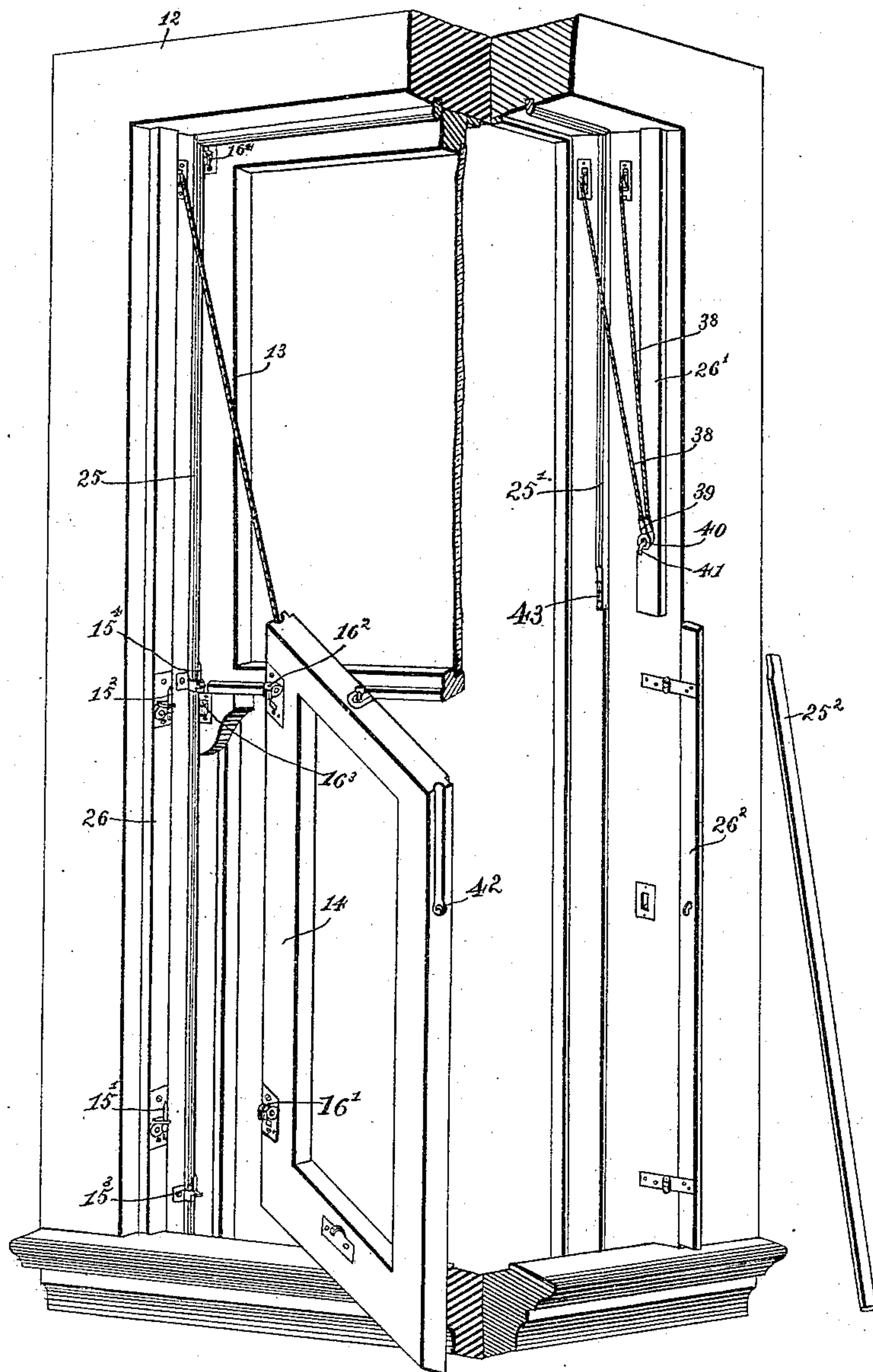
2 Sheets—Sheet 1.

G. D. CROCKER.  
SWINGING WINDOW.

No. 431,202.

Patented July 1, 1890.

*Fig. 1*



Witnesses:

*Amos Cornwall.*  
*Will H. Durrall.*

Inventor:

*George D. Crocker.*

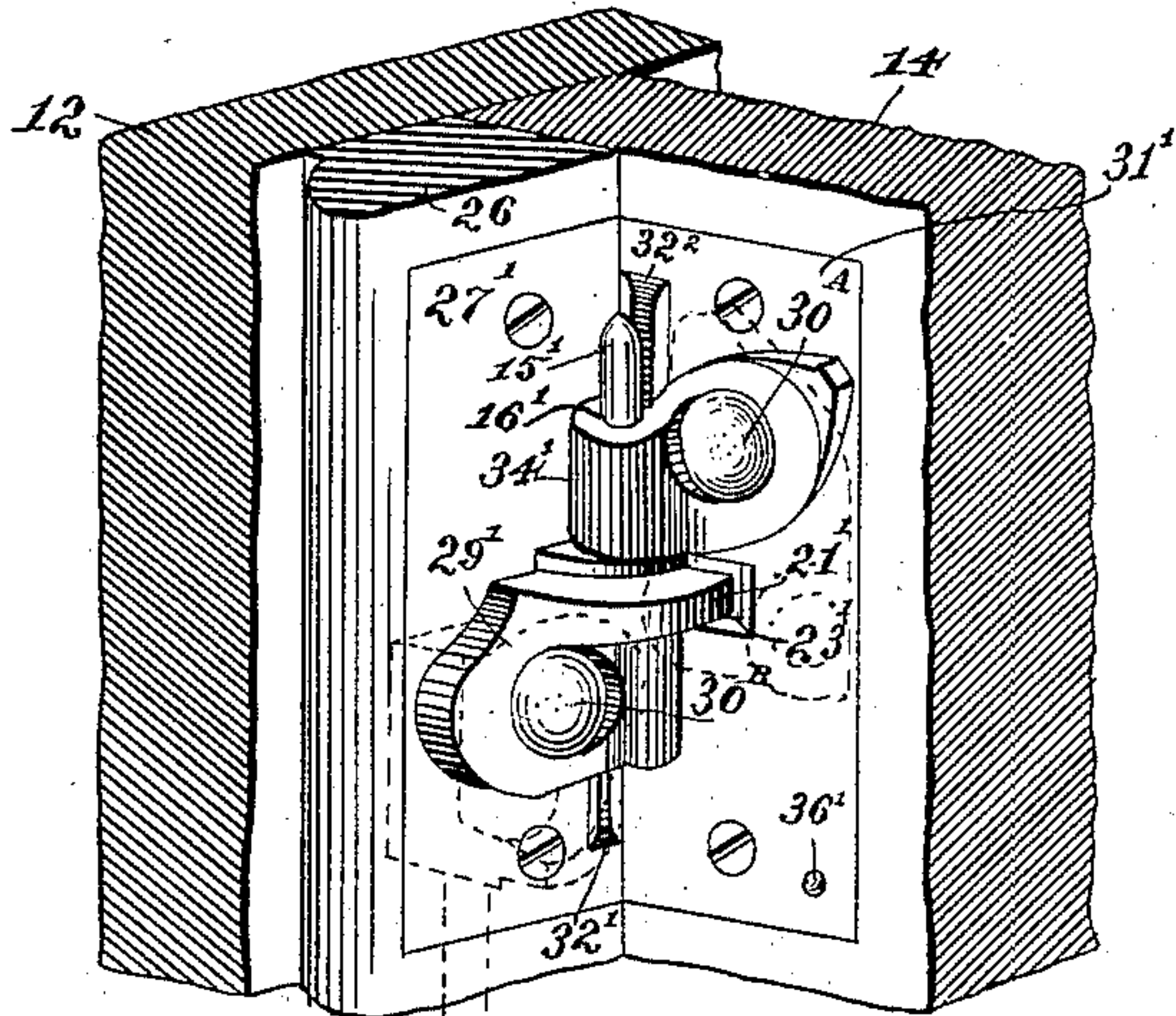
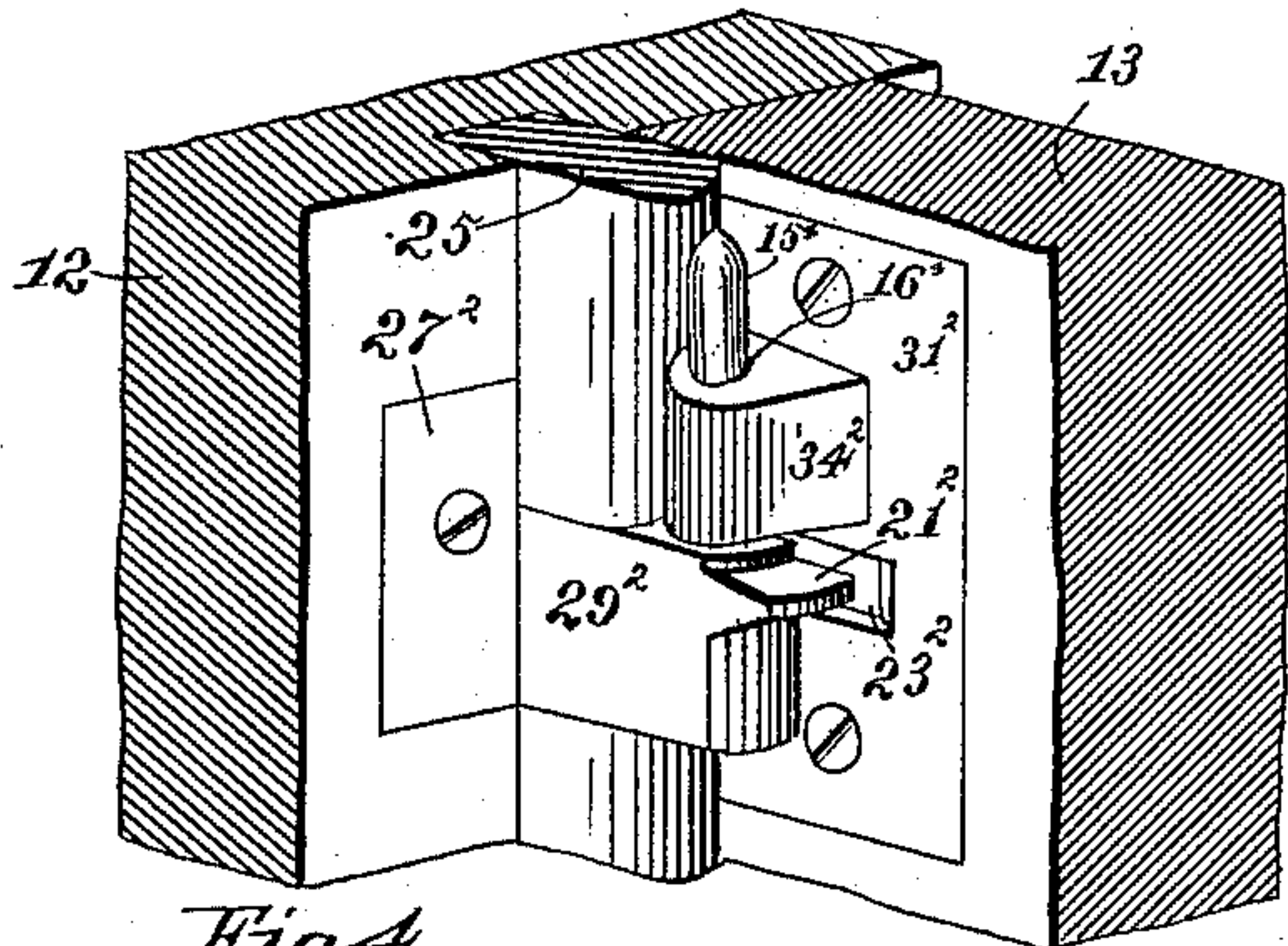
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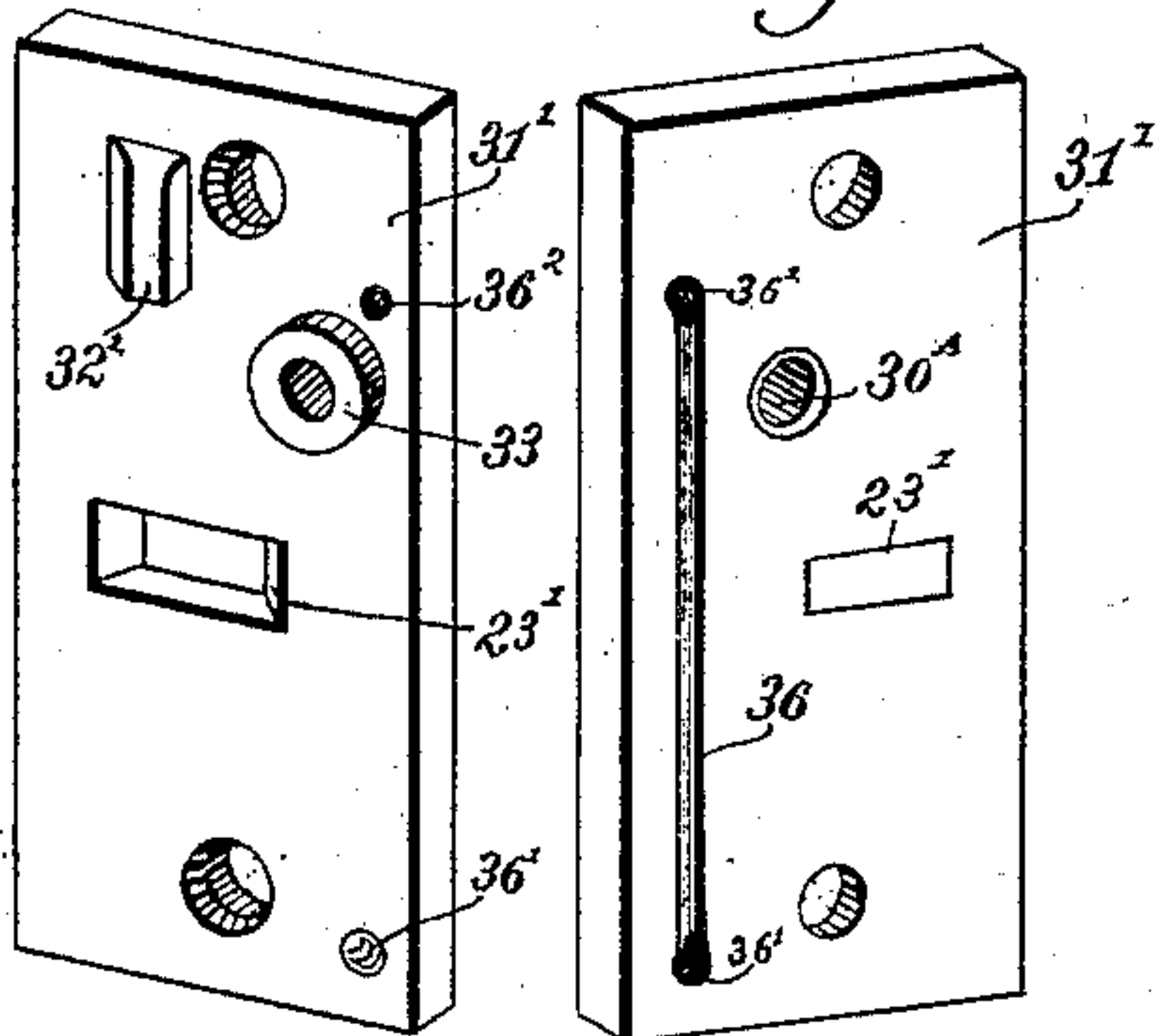
*Fig. 2.*

*Fig. 3.*

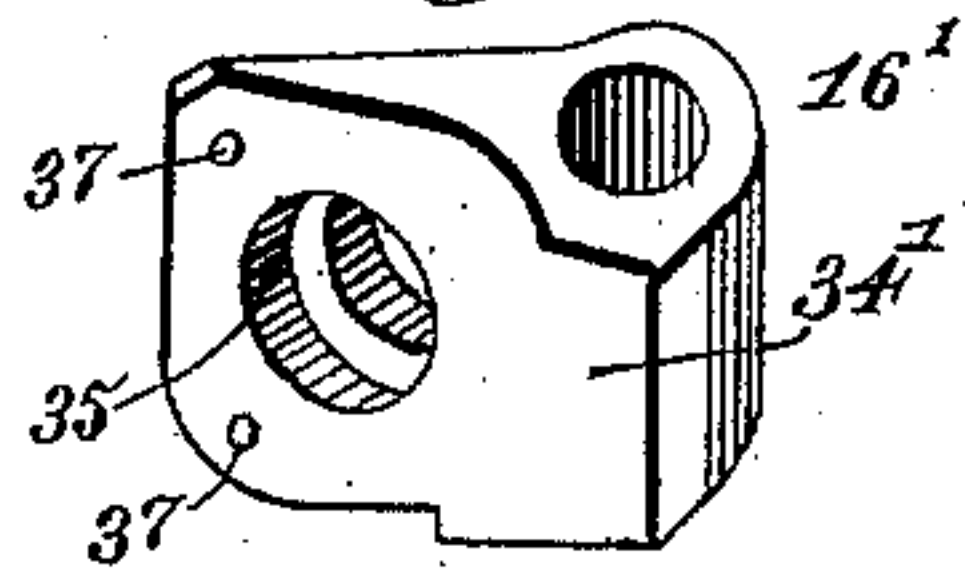


*Fig. 4.*

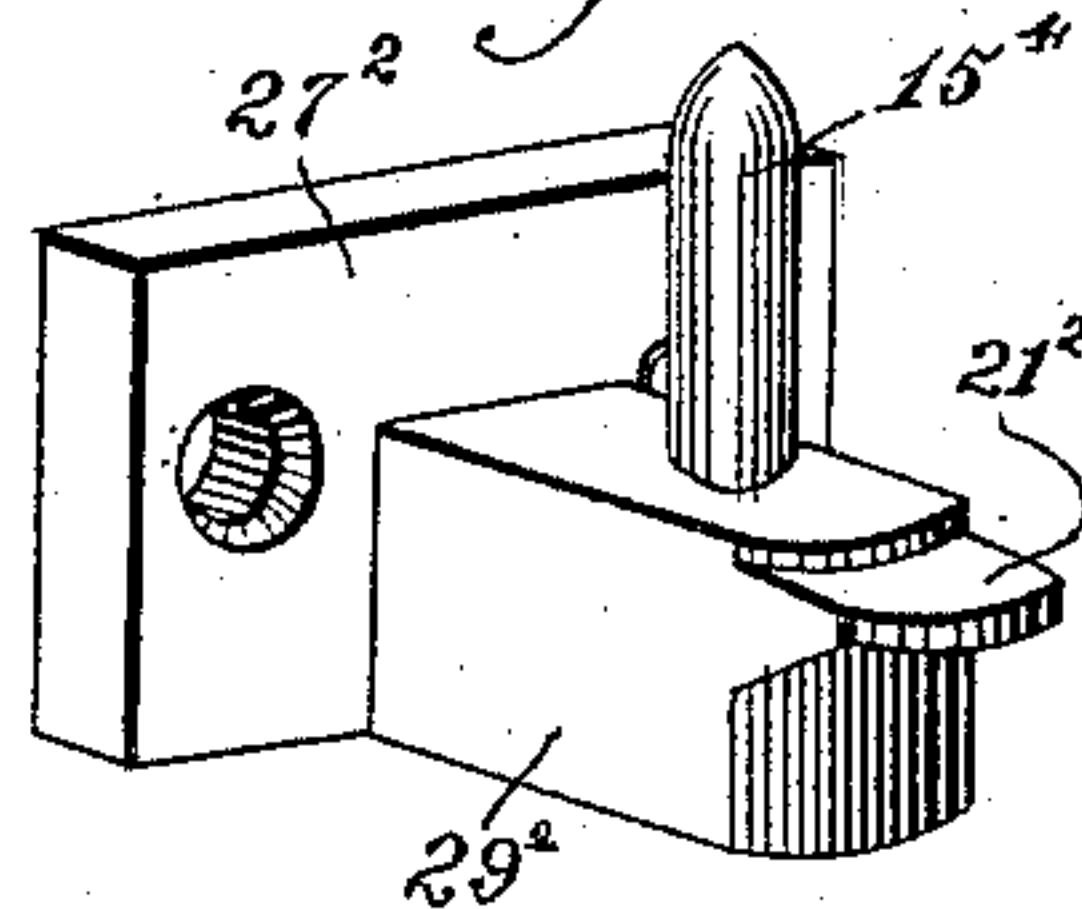
*Fig. 6.*



*Fig. 5.*

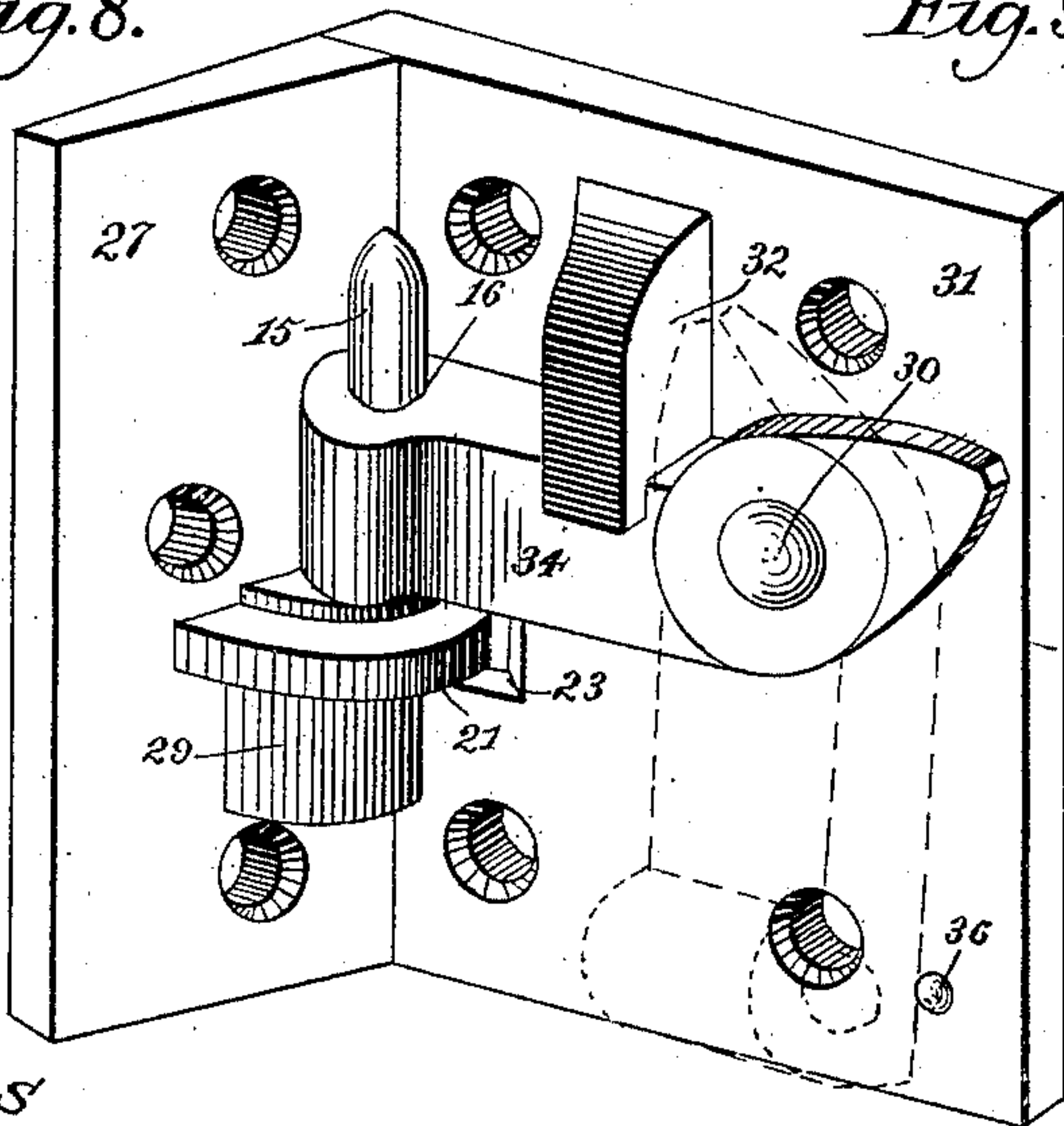


*Fig. 7.*

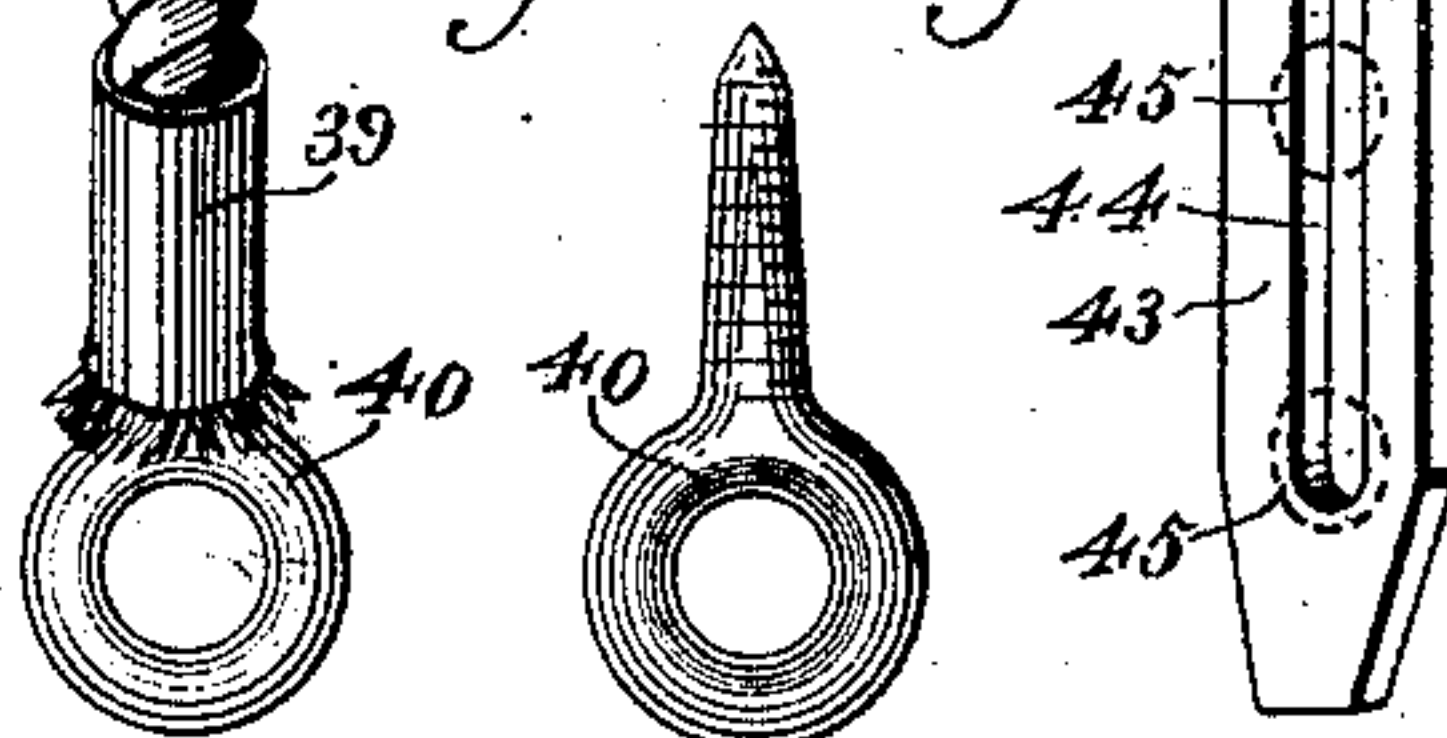


*Fig. 8.*

*Fig. 9.*



*Fig. 10. Fig. 11.*



Witnesses

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# UNITED STATES PATENT OFFICE.

GEORGE D. CROCKER, OF OAKLAND, CALIFORNIA.

## SWINGING WINDOW.

SPECIFICATION forming part of Letters Patent No. 431,202, dated July 1, 1890.

Application filed February 25, 1889. Serial No. 301,143. (No model.)

*To all whom it may concern:*

Be it known that I, GEORGE D. CROCKER, a citizen of the United States, residing at Oakland, in the county of Alameda and State of California, have invented certain new and useful Improvements in Swinging Windows, of which the following is a specification.

The several objects of my improvements are to provide a cheap and simple combination of devices adapted to and so constructed that they can be easily attached to any ordinary window, in which both the lower and upper sashes are counterbalanced by weights and cords, which are made attachable and detachable to one side of the sashes, and at the other side the sashes are made attachable and detachable to the window-frame by hinges, whereby the sashes, while being free to slide up and down in the window-frame, can also, when desired, be swung inward horizontally, thereby providing easy access to the outer sides of the sashes and panes for the purpose of cleaning, painting, and repairing the same, while the operator is standing on the floor inside of the building. These hinges are so constructed that when the sashes are swung into the frame in their normal position certain parts of the hinges can be quickly adjusted in such a manner that the parts of the hinges attached to the sash will slide freely past the parts attached to the window-frame when the sash is slid up and down in its grooves in the frame in the usual manner, but are vertically fixed when swung out of the window-frame.

In the accompanying drawings, forming part of this specification, Figure 1 is a perspective view which represents the inside of a window equipped with my improvements, some parts of the window being shown in section, the frame and upper sash being broken, and the right-hand side of the frame turned back enough to show the jamb and improvements located on this side of the frame, and the lower sash, which is hanging by one of the weight-cords and its lower rail resting on the window-stool, being unshipped from its hinges, swung out and pulled away from the left-hand side of the frame, in order to show the location of all the parts of the two hinges of the upper sash. Fig. 2, Sheet

2, is a sectional perspective view which represents the whole of one of the upper sash-hinges attached to a small section of the sash and frame, the hinge being in its engaged position ready to be swung inwardly, the left-hand or pintle leaf being attached to a small section of the window-frame and the right-hand or socket leaf being attached to a small section of the window-sash. Fig. 3 is a sectional perspective view which represents the whole of one of the lower-sash hinges attached to a small section of the sash and frame, the hinge being in its engaged position ready to be swung inward, the left-hand or pintle leaf being attached to a small section of the front stop and window-frame, and the right-hand or socket leaf being attached to a small section of the window-sash. Fig. 4 is a perspective view representing the socket-leaf of one of the lower-sash hinges with the pivoted socket-block removed, showing the stud on which the socket-block turns. Fig. 5 is a perspective view representing and showing the rear face of the socket-block and the recess in it which receives the stud illustrated in Fig. 4 and on which it turns. Fig. 6 is a perspective view of the rear side of device illustrated in Fig. 4, showing a wire spring, the upper end of which passes through the leaf and presses against the inner face of the socket-block. Fig. 7 is a perspective view representing and showing the whole of the pintle-leaf of the upper-sash hinge, which is illustrated in Fig. 2. Fig. 8 is a perspective view of a hinge which is for attachment to the lower sash and frame of large heavy windows, in which the socket-block only is pivoted so as to turn down, the pintle-block being stationary. Fig. 9 is a sectional perspective view representing one end of one of the weight-cords, showing a screw-eye and ferrule attachment for attaching and detaching the ends of the weight-cords to the sashes. Fig. 10 is a perspective view of one part of the attaching device illustrated in Fig. 9. Fig. 11 is a perspective view representing a sliding latch for attachment to the outer edge of the parting-strip on the opposite side from the hinges, to hold the removable lower portion in place.

The same numerals of reference indicate



the same or corresponding parts in all the figures.

The numeral 12 in Fig. 1 indicates the window frame and casing.

5 Numeral 13 indicates the upper sash, and 14 indicates the lower sash, which are mounted to slide up and down in grooves in the usual way, and also to be swung inward when desired.

10 In order to swing the lower sash inward, it is provided with hinge-leaves having blocks pivoted thereon, which are provided with sockets 16' and 16<sup>2</sup>, and the window-frame is provided with mating hinge-leaves having  
15 blocks pivoted thereon, which are provided with pintles 15' and 15<sup>2</sup>. The pivot or stud on which these blocks turn is on one side of the pintle on one leaf and on the opposite side of the socket on the other leaf, so that  
20 they can be turned away from each other, as shown by the dotted lines in Figs. 5 and 8, and in this non-engaging position they will pass each other when the sash is slid up or down in its grooves in the frame; but when  
25 it is desired to swing the sash inward it is raised a few inches. The pintles and sockets are then turned into line with each other, and then when the sash is drawn down slightly the pintle 15' will enter the socket  
30 16' and the pintle 15<sup>2</sup> will enter the socket 16<sup>2</sup>, thus hinging the lower sash while its lower rail is about one-inch above the window-stool, and then by turning outward the lower portion of the front stop 26<sup>2</sup> on the op-  
35 posite side from the hinges the lower sash can be swung inward on the hinges thus connected.

The hinge-leaves to which the socket-blocks are attached have each a recess 23', (shown  
40 in Figs. 3 and 4, Sheet 2,) which receives a lug 21', which is on the pintle-block, and when the sash is swung inward this lug prevents the sash from lifting and being thrown off its hinges while it is swung in; but when it is  
45 swung back to its normal place in the window-frame it can easily be lifted off the hinges and slid up in the sash-grooves. The socket-block and the pintle-block then being turned away from each other (as shown by dotted  
50 lines in Fig. 3) will allow the sash to slide up and down the same as if there were no hinges on the sash.

In order to swing the upper sash inward, it is provided with two hinge-leaves having sta-  
55 tionary socket-blocks thereon, which are provided with sockets 16<sup>3</sup> and 16<sup>4</sup>, and the window-frame is provided with mating hinge-leaves having stationary pintle-blocks corresponding in thickness with the parting-strip  
60 25. Said pintle-blocks are provided with pintles 15<sup>3</sup> and 15<sup>4</sup>, which are in line with each other and directly in front of the outer edge of the parting-strip, and when the sash is drawn down the pintle 15<sup>3</sup> will enter the sock-  
65 ets 16<sup>3</sup>, and the pintle 15<sup>4</sup> will enter the socket 16<sup>4</sup>, thus hinging the upper sash, while its lower corners are about one inch above the

window-stool, and then by removing the lower portion of the parting-strip 25<sup>2</sup> on the oppo-  
site side from the hinges the upper sash can  
70 be swung inward on the hinges thus connected.

The device shown in Fig. 2 represents one of the upper-sash hinges attached to a small section of the sash and window frame and in its engaged position ready to be swung in-  
75 ward, the details of which are as follows: The numeral 27<sup>2</sup> indicates the pintle-leaf of the hinge provided with a pintle-block 29<sup>2</sup>, having a lug 21<sup>2</sup>, all cast in one piece, and is provided with a steel pintle 15<sup>4</sup>, which is firmly set in  
80 pintle-block 29<sup>2</sup>. (Fig. 7 shows the whole of this leaf of the hinge.) The numeral 31<sup>2</sup> indicates the socket-leaf of this hinge, provided with the recess 23<sup>2</sup> and stationary socket-block 34<sup>2</sup>, all cast in one piece, and is provided with  
85 a socket 16<sup>4</sup>, which receives pintle 15<sup>4</sup> when the sash is drawn down, so that the parts of the hinges come together. The numeral 12 indicates a small section of the window-frame, and 13 indicates a small section of the upper  
90 sash, showing the manner in which the leaves of the hinges are set into and secured to them, so as not to obstruct the sash-grooves, the pintle-block 29<sup>2</sup> being of the same thickness as the parting-strip; and 25 indicates a small  
95 section of the parting-strip, showing the manner in which it is cut and fitted around the hinge-leaf at its top and bottom. The socket-leaves of the upper-sash hinges have each a re-  
100 cess 23<sup>2</sup>, which receives a lug 21<sup>2</sup>, which is on the outer end of the stationary pintle-block 29<sup>2</sup>, and when the sash is swung inward this lug prevents the sash from lifting and being  
thrown off its hinges while it is swung in, (and is similar to the lower-sash hinges in this re-  
105 spect;) but when it is swung back to its place in the window-frame it can be easily lifted off the hinges and slid up in the sash-grooves.

The device shown in Fig. 3 represents one of the lower-sash hinges attached to a small  
110 section of the sash, front stop, and window-frame, and is in its engaged position ready to be swung inward, the details of which are as follows: The numeral 12 indicates a small sec-  
115 tion of the window-frame, and 26 indicates a small section of the front stop, and 14 indicates a small section of the lower sash. 27' indicates the pintle-leaf of the hinge, which is set into the front stop 26 flush with the sur-  
120 face of the hinge-leaf, and is provided with a permanent lug or rest 32', all cast in one piece, and is provided with a pintle-block 29', which is pivoted thereon, and having a steel pintle 15' firmly fixed therein. The pintle-block is  
125 secured to the hinge-leaf by a rivet or screw 30<sup>B</sup>. The numeral 31' indicates the mating or socket leaf of the hinge, which is set into the sash 14 flush with the surface of the hinge-  
leaf, and is provided with a permanent lug or rest 32<sup>2</sup>, and having a recess 23' and a stud  
130 33, (shown in Fig. 4,) all cast in one piece, and is provided with a socket-block 34', which is pivoted thereon and secured by a rivet or screw 30<sup>A</sup>, said socket-block having a socket



16', which receives the pintle 15' when the two parts of the hinge are brought together. These blocks can be journaled to their respective leaves or hinge-plates in a number of ways; but I prefer to make them as shown at Figs. 4 and 5. In this case I make a countersink 35 in the inner face of the socket-block, which fits over a stud 33 on the leaf, and a rivet or screw 30<sup>A</sup> secures it in its place on the leaf. The numeral 36' indicates the riveted end and 36<sup>2</sup> the free end of a spring, which is in or on the rear side of the leaf, as shown in Fig. 6. The free end of this spring 36<sup>2</sup> is arranged to snap into and engage in small indentations 37 37 in the inner face of the socket-block shown in Fig. 5 to retain it in its position when it is turned up for the purpose of engaging with the pintle. It will be noticed that when the socket-block and the pintle-block are in their engaging position, so as to form hinges and support the weight of the sashes, they are supported by permanent lugs or rests 32' and 32<sup>2</sup> on their respective leaves or hinge-plates. These lugs or rests are cast with and form a part of each leaf. The pintle-block is journaled to its leaf in the same manner as the socket-block which is illustrated in Figs. 4 and 5, and it is unnecessary to further illustrate that part of the hinge.

When the window-sash is unusually large and heavy and there is room for a wide hinge, I only use pivoted socket-blocks 34 on the hinges of the lower sash, as shown at Fig. 8. In this case I place the pivotal point far enough from the pintle to allow the socket-block to be turned down and clear the pintle, as shown by dotted lines, and the pintle-block 29 is stationary, being cast on the hinge-leaf 27, and I provide a solid bearing lug or rest 32 to receive the upward pressure of the socket-block when it is supporting the weight of the sash. The particular form of these hinges will of course be regulated according to the dictates of fancy or the requirements of particular cases, and may be made of fancy form and ornamented according to taste or desired economy of construction, and ornamental ones will be made the base-plates or leaves of which will not be intended to be cut into the wood-work, but screwed onto the surface of the sash and frame or front stop. This has reference more especially to the lower-sash hinges.

The sashes 13 and 14 are counterbalanced by weights, being hung by cords in the usual manner, except that the cords are made attachable and detachable from the sashes by the use of a new combination of devices shown at Figs. 9 and 10, wherein the numeral 38 indicates a short piece of one of the cords near the end, which is for attachment to one of the sashes, and 39 indicates a short metal tube or ferrule, which is slipped over the end and fitting snugly to the cord, thereby preventing the cord from unraveling. I then make a small hole with an awl in the end of the cord

thus surrounded by the ferrule and take a screw-eye (shown at Fig. 10 and indicated by the numeral 40) and screw the end into the fibers of the cord into the ferrule or tube, as shown at Fig. 9. This provides an eye at the end of the sash-cords that is proof from being pulled out by any ordinary strain, and is a cheap and simple device, and severe tests have proven it to be all that is necessary.

The sashes 13 and 14 are each provided with countersunk pins or hooks 42 in their free swinging edges opposite to the hinges, onto which the eyes at the end of the cords are hitched when the sashes are swung into the frame; but when the sashes are swung inward they are unhitched from the sashes and hitched to a hook 41 at the side of the window-frame, as shown in Fig. 1.

The removable lower portion of the parting-strip (indicated by the numeral 25<sup>2</sup> in Fig. 1) is shown as removed from its normal place, and leaning up against the side of the window-frame when fitted in its place the lower end sets in a small recess cut in the window-sill, and its upper end is secured by a vertical sliding latch. (Indicated by the numeral 43 in Fig. 1; also at Fig. 11, Sheet 2.) This sliding latch is a plate of metal with its upper end bent outward to form a small thumb-catch, and has a longitudinal slot in it, (indicated by the numeral 44,) through which small round-headed nails 45 45 (shown at Fig. 11) pass to fasten it to the lower end of the stationary part of the parting-strip 25', as shown in Fig. 1. The nails are so placed that the latch-plate can slide lengthwise a limited distance, so that when the latch is raised the lower or removable portion of the parting-strip 25<sup>2</sup> (which is standing at the side of the window-frame) can be pressed into place underneath the stationary part of the parting-strip 25', and the upper end of the removable part is secured by sliding down the latch 43. By reversing this operation the strip is removed, and this will allow the upper sash, when seated on its hinges, to open inward after the lower sash has been swung inward.

When it is desirable to swing the sashes inward for the purpose of cleaning the panes, the operation is as follows: Raise the lower sash 14 a few inches; then turn up the hinge-pintles 15' and 15<sup>2</sup> and turn up the hinge-sockets 16' and 16<sup>2</sup>; then lower the sash slightly and the pintle 15' will enter the socket 16' and the pintle 15<sup>2</sup> will enter the socket 16<sup>2</sup>, thus hinging this sash. Then open the lower portion of the front stop 26<sup>2</sup> on the opposite side from the hinges and pull the sash out slightly and unhitch one of the eyes 40 at the end of the weight-cords 38 from the pin or hook 42 in the edge of the sash and hitch it to a hook 41 at the side of the window-frame. Then the sash can be swung inward and around to the other side of the window-frame. Now pull the upper sash 13 down, and the pintle 15<sup>3</sup> will enter the socket 16<sup>3</sup> and the pintle 15<sup>4</sup> will enter the socket 16<sup>4</sup>, thus hinging this



sash. Then slide up the latch 43 on the lower end of the stationary upper portion of the parting-strip 25' and remove the lower portion 25<sup>2</sup>; then pull the sash out slightly and unhitch the other eye 40 at the end of this weight-cord and hitch it to the same hook 41 at the side of the window-frame. Then this sash can be swung inward, and to close the window again it is only necessary to reverse the operation.

The special advantages of these improvements are that they are cheap of manufacture and can be quickly attached to any window having sliding sashes.

Having thus described my invention, what I claim, and desire to secure by Letters Patent, is—

1. A window-sash hinge having both its pintle-block and socket-block pivoted to the hinge-leaves so as to turn outward in a plane parallel with their respective leaves, substantially as described.

2. A window-sash hinge having both its pintle-block and socket-block pivoted to the hinge-leaves so as to turn outward in a plane parallel with their respective leaves, and having permanent lugs or rests 32' 32<sup>2</sup>, arranged to support the pivot-blocks when they are in engaging position to carry the sash, substantially as described.

3. A window-sash hinge having a stationary pintle-block and pintle on one hinge-leaf and a pivoted socket-block on the opposite leaf arranged to turn out of line with the pintle in a plane parallel with the face of its leaf, substantially as described.

4. A window-sash hinge having a stationary pintle-block and pintle on one hinge-leaf and a pivoted socket-block on the opposite leaf arranged to turn out of line with the pintle in a plane parallel with the face of its leaf, and having a permanent lug or rest 32, arranged to support the pivoted socket-block when in its engaging position, substantially as described.

5. A window-sash hinge having both its pintle-block and socket-block pivoted to the hinge-leaves and the inner face of the socket-block having indentations 37 37, and the hinge-leaf provided with a spring 36, one end of which is adapted to engage either of the indentations, substantially as and for the purposes described.

6. In a sliding and swinging window adapted to have its sashes swung inward on hinges, the upper sash having hinge-leaves with fixed

sockets and the window-frame having hinge-leaves with fixed pintles adapted to enter or engage the sockets when the sash is lowered, and the lower sash provided with hinge-leaves having pivoted socket-blocks which turn outward in a plane parallel with the face of their leaves, and the window-frame provided with hinge-leaves having pivoted pintle-blocks provided with pintles adapted to enter or engage the sockets of the pivoted socket-blocks when both pivoted blocks of each hinge are turned inward to the same vertical plane, but which will slide past each other in the vertical sliding movement of the sash in its grooves in the window-frame when both pivoted blocks of each hinge are turned outward, substantially as described.

7. In a window adapted to have its sashes swung inward on hinges, the upper sash having hinge-leaves with fixed sockets and the window-frame having hinge-leaves with fixed pintles adapted to enter or engage the sockets when the sash is lowered, in combination with the lower sash provided with hinge-leaves having pivoted socket-blocks which turn outward in a plane parallel with their respective leaves, and the window-frame provided with hinge-leaves having fixed pintles adapted to enter or engage the sockets when the pivoted socket-blocks of each hinge are turned inward to the same vertical plane, but which will slide past each other in the vertical sliding movement of the sash in its grooves in the window-frame when the pivoted socket-blocks of each hinge are turned out of line with the fixed pintles on the window-frame, substantially as described.

8. In a window adapted to have its sashes swung inward on hinges which are attached to one side of the sashes and window-frame, the sashes being counterbalanced by weights and cords, the ends of the cords on one side of the sashes opposite to the hinges having a hitching device consisting of a tube or ferrule 39, slipped over the end of the cord, in combination with a screw-eye 40, with its screw end screwed into the end of the cord in its strands and fibers which are inside of the ferrule, substantially as and for the purposes herein shown and described.

In testimony whereof I affix my signature in the presence of two witnesses.

GEORGE D. CROCKER.

Witnesses:

WILL H. BURRALL,  
LUCY A. MILTON.