

J. L. WILGIS.

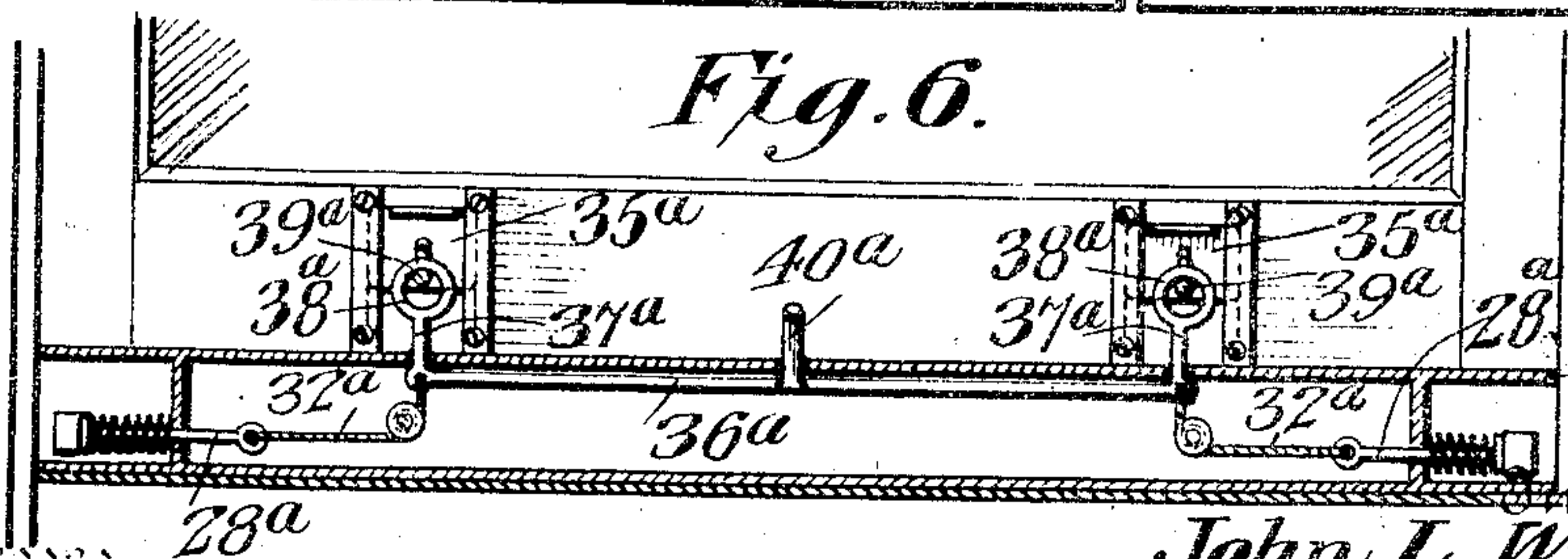
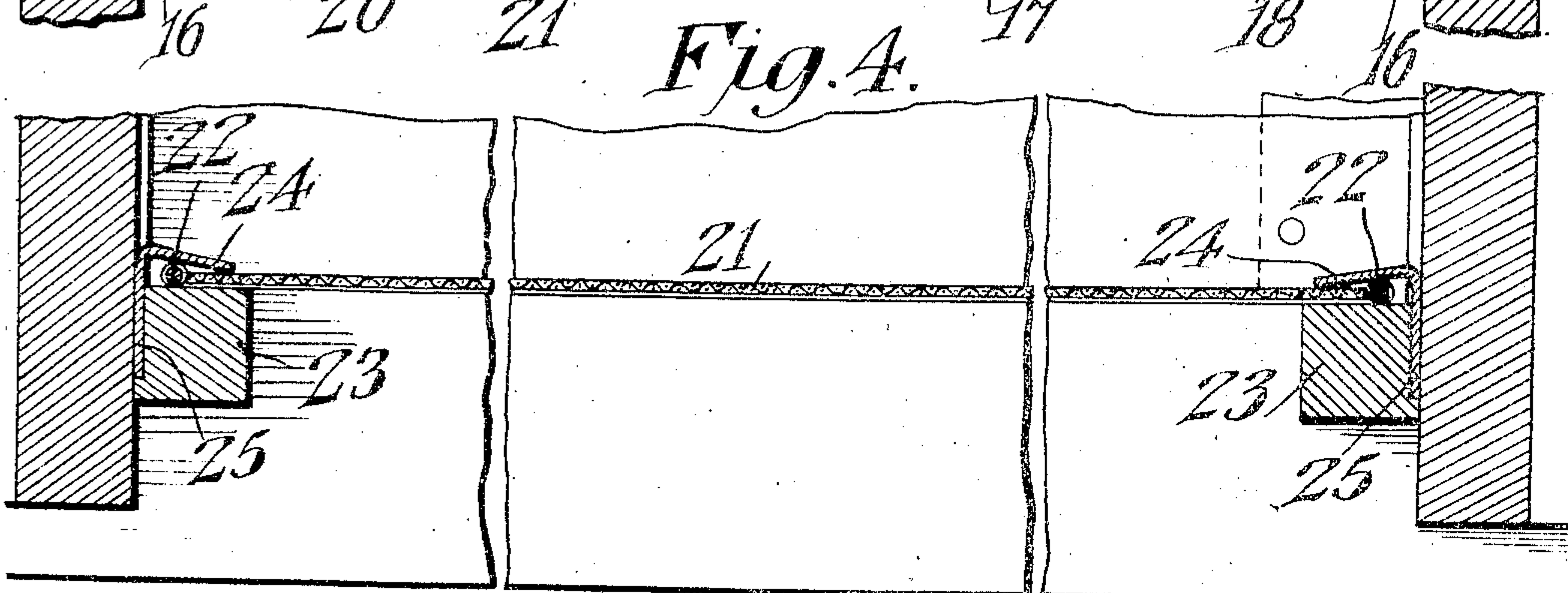
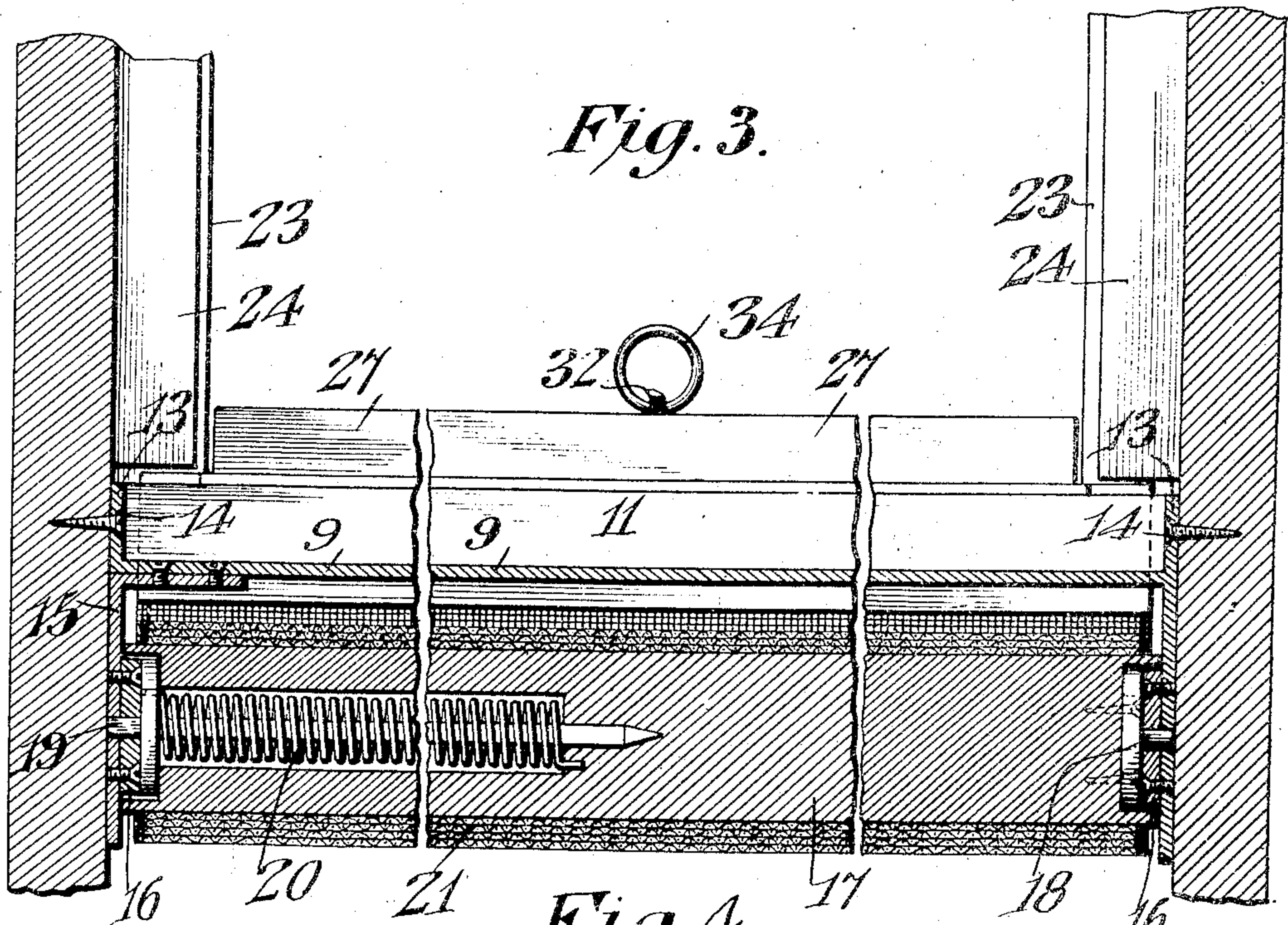
WINDOW SCREEN.

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940,569.

Patented Nov. 16, 1909.

2 SHEETS—SHEET 2.



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WINDOW-SCREEN.

940,569.

Specification of Letters Patent.

Patented Nov. 16, 1909.

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To all whom it may concern:

Be it known that I, JOHN L. WILGIS, a citizen of the United States, residing at Upland, in the county of Delaware and State of Pennsylvania, have invented a new and useful Window-Screen, of which the following is a specification.

This invention relates to window screens of the type that wrap upon a roller when not in use, and one of the primary objects is to provide a novel and simple structure that can be readily applied to a window frame and connected to the sash thereof, the screen and roller moreover when not in use being completely housed, thus being thoroughly protected from the elements.

A further and very important object is to provide a structure in which the screen can be locked at any position desired and to employ means which will not only constitute connections between the sash and screen, but will also act in the nature of automatic actuating mechanism for the locking means when the sash is raised.

In the accompanying drawings, Figure 1 is a front elevation of a portion of a window frame and sash illustrating the screen connected to the latter. Fig. 2 is a vertical sectional view through the same with the sash in its lowered position. Fig. 3 is a sectional view at right angles to Fig. 2. Fig. 4 is a cross sectional view on the line 4-4 of Fig. 1. Fig. 5 is a detail sectional view through one of the locking bolts. Fig. 6 is a sectional view through a slightly modified form of construction.

Similar reference numerals designate corresponding parts in all the figures of the drawings.

The present structure can be applied to the top or bottom of the window, but in the preferred arrangement, as disclosed in the drawings, the window frame includes a sill that is composed of an inner section 7 and an outer section 8, these sections being spaced apart. A plate 9, overlapping the section 8, extends over the space 10 between the sections, but terminates short of the inner section 7, and has an upstanding flange 11 disposed adjacent but in spaced relation to the outer edge of said section 7. The outer edge of the plate 9 is provided with a downturned lip 12, which is preferably embedded in the upper side of the section 8, and said

plate furthermore has end flanges 13, which are secured to the sides of the frame by screws 14 or other suitable fasteners. Ears 15 depend from the plate 9, into the space 10 between the sill sections, and are secured to the inner sides of said ears, are reinforcing disks 16.

A roller 17, has at one end a circular gudgeon 19 journaled in one of the reinforcing disks 16, and the ear 15 to which it is secured, while the other end of said roller has an angular gudgeon 19 that engages in an angular socket formed in the opposite ear and reinforcing disk. The roller is provided with the usual coiled spring 20. This roller may either be of wood or sheet metal, the former being illustrated in the present embodiment. A screen 21 wraps upon said roller, and extends upwardly between the flange 11 of the plate and the inner section 7 of the sill. Said screen preferably has thickened or reinforced side edges 22. The said side edges travel in guideways formed by the inner beads 23 of the frame, and guide strips 24, which as illustrated in Fig. 4, are formed by the outstanding flanges of angle strips 25 secured between said beads 23 and the sides of the frame.

The free end of the screen is clamped between plates 26 secured to the under side of a casing 27 that extends the width of the window, said clamping plates 26 fitting snugly between the flange 11 and the inner section 7 of the sill. Slidably mounted on the end portions of the casing 27, are locking bolts comprising longitudinally disposed reciprocating stems 28 carrying rubber or other yielding heads 29 that frictionally engage the window frame. Springs 30, coiled about the stems, urge the heads outwardly into such engagement. The said stems 28 have terminal eyes 31, at their inner ends and connected to said eyes, are cords or cables 32 which pass over pulleys 33 arranged in the central portion of the casing 27. The cables have their inner ends connected to a ring 34 located upon the central portion of the casing. A lifting device for the sash is employed that comprises a plate 35 slidably mounted in guides 36 secured to the lower rail of said sash and the ring is detachably connected with the lifting device so that the latter will exert a pull on the cables to disengage the

heads 29 from the window casing during the sliding movement of the device when an effort is made to raise the sash by the lifting device. It will thus be seen that the lifting device constitutes means for releasing the locking bolts of the screen from the window casing, so that the screen can be readily opened or closed with the opening and closing of the sash. This plate 35 has an outstanding finger engaging lip 37 and an outstanding pin 38 located below the lip 37. The ring 34 is adapted to engage over the pin when it is desired to open the window and unwind the screen at the same time. The screen can be manipulated independently of the sash, if desired, and the ring 34 operates as a lifting device and means for releasing the spring-pressed locking bolts. This manner of connecting the lifting devices of the sash and screen together affords ready detachment of the screen from the sash, so that the latter can be opened independently of the screen, as when the window panes are to be cleaned. Also in winter time, when the screen is not required, it can be conveniently detached from the window sash.

Where wide windows are employed, two of these slidable lifting devices may be employed, as shown at 35^a in Fig. 6, in which case, the cables 32^a, which are connected to the locking bolts 28^a, are secured to the ends of a bar 36^a located longitudinally within the casing. This bar has upstanding terminals 37^a, which are provided with rings 38^a adapted to be engaged over the holding pins 39^a of the locking devices. A central actuating stem 40^a, secured to the bar 36^a and projecting from the casing, constitutes means for turning the bar in order to engage the rings or disengage them from the pins.

The operation of both structures is substantially the same. If the screen is not in use, the casing is left in its lowered position and the window sash may be raised or lowered as desired. When lowered, it abuts against the plate 9 in advance of the flange 11. It will thus be evident that said plate constitutes an effective covering for the roller and screen and the flange prevents water driving beneath the sash and passing into the space 10 in which the roller and screen are housed. When it is desired to screen the window, the ring 34 of the structure disclosed in Figs. 1-5 inclusive, or the rings 38^a of the modification illustrated in Fig. 6, are engaged with the pin 36 or the pins 39^a as the case may be, and the sash is elevated by means of the locking devices. It will be evident that inasmuch as these devices have a limited movement with respect to the sash, the first action is to draw the bolts inwardly, but when the sash begins to move upwardly, the screen will move with it. As soon as the window has been raised and

the lifting devices released, the springs 28 will react to force the bolts outwardly and thus lock the screen and relieve the sash of the strain thereof. In lowering the sash, the lifting devices are held in their uppermost position by the fingers, while the sash is pushed downwardly.

From the foregoing, it is thought that the construction, operation and many advantages of the herein described invention will be apparent to those skilled in the art, without further description, and it will be understood that various changes in the size, shape, proportion and minor details of construction, may be resorted to without departing from the spirit or sacrificing any of the advantages of the invention.

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

1. The combination with a window frame including an end wall comprising spaced inner and outer sections, of a plate overlapping the outer wall section and extending over the space between said sections, said plate having an outstanding flange along its inner edge that is disposed adjacent but in spaced relation to the outer edge of the inner wall section, a window-sash movable in the frame and abutted against the plate outside the flange at the limit of its movement, a roller journaled in the space between the wall sections, a screen that wraps upon the roller and moves between the flange and the inner wall section, and means for connecting the screen to the sash.

2. The combination with a window frame including an end wall comprising spaced inner and outer sections, of a plate overlapping the outer wall section and extending over the space between said sections, said plate having an outstanding flange along its inner edge that is disposed adjacent but in spaced relation to the outer edge of the inner wall section, a window sash movably mounted in the frame and abutting against the plate outside the flange at the limit of its movement, ears carried by the plate and projecting into the space between the wall sections, a roller journaled in the ears, a screen that wraps upon the roller and moves between the flange and the inner wall section, and means for connecting the screen to the sash.

3. The combination with a window frame having a chamber provided with a slot, of a roller journaled in the chamber, a screen that wraps upon the roller, a sash operating in the frame, a casing having depending plates arranged to enter and fill the slot when the screen is in closed position that are clamped upon the free end of the screen, oppositely movable holding bolts located in the ends of the casing and projecting therefrom, means for independently holding the

bolts in locking position and means carried by the casing for detachably connecting the same and thereby the screen to the sash.

4. The combination of a window frame, a sash slidably mounted therein, a self-winding screen mounted on the window frame, means on the screen for frictionally engaging the window frame to hold the screen open at different positions, a lifting device attached to the screen and operatively connected with the said means for disengaging the same from the window frame, a movable lifting device for the sash slidably mounted on the latter, and means for directly detachably connecting the lifting devices together to open or close the sash and screen simultaneously or permit independent movement of either.

5. The combination of a window frame, a sash mounted therein, a self-winding screen, elements on the screen for frictionally engaging the window frame to hold the screen open to different positions, a device operatively connected with the elements for releasing the same, a lifting device mounted on the sash and arranged to have a limited movement independently of the latter, and means for operatively connecting the said devices together whereby the last-mentioned device operates through the first-mentioned device to release the elements and hold the same released during the movement of the sash and winding or unwinding of the screen.

6. The combination of a window frame having a slot, a window sash mounted thereon, a self-winding screen mounted on the frame and movable through the said slot, a member connected with the free end of the screen to form a closure for the slot when the screen is completely closed, elements carried by the member to frictionally engage the window frame to hold the screen in different open positions, an actuating device for the sash movably mounted thereon, an actuating device for the elements and for the screen, means for connecting the two devices together whereby the former operates through the latter for releasing the said elements and thereafter to move the sash and screen together to open or closed position.

7. The combination of a window frame, a sash thereon, a self-winding screen mounted on the frame, an actuating device movably mounted on the sash, means carried by the screen for releasably gripping the window frame to hold the screen in different open

positions; and operative connections between the said means and actuating device whereby the same must have an initial movement independently of the sash to release the said means prior to the raising or lowering of the sash.

8. The combination of a window frame, a sash mounted thereon, a self-winding screen on the window frame, a plate slidably mounted on the sash, a gripping member carried by the plate, spring-pressed bolts on the screen for engaging the window frame to hold the screen in different open positions, a device connected with the bolts to release the same, and a detachable connection between the device and said plate.

9. The combination with a window frame including a sill, of a spring roller located therein, a screen that wraps upon the roller, a casing connected to the screen and having oppositely movable bolts that engage the window frame to hold said screen, springs for urging the bolts into engagement with the frame, a vertically slidable sash, a lifting device for the sash slidably mounted thereon and having a projecting pin, flexible elements connected with the bolts and a ring connected to the elements and adapted to engage with the pin of the lifting device.

10. In a device of the class described, the combination of a movable member, a pull device mounted thereon to move in the direction of movement of the member, guides for the device and limiting the independent movement thereof, a self-winding flexible element, a self-actuated locking device carried by the element for holding the same in different positions, and means connecting the last-mentioned device to the pull device for releasing the locking device when pressure is applied to the former to move the said member.

11. The combination of a window frame, a sash mounted thereon, a self-winding screen, spring-pressed bolts carried by the screen and adapted to engage the window frame, flexible elements connected with the bolts, a bar connecting the elements, yielding lifting devices on the sash, and means for detachably connecting the bar with the devices.

In testimony, that I claim the foregoing as my own, I have hereto affixed my signature in the presence of two witnesses.

JOHN LESLIE WILGIS.

Witnesses:

MARY F. HUMBERT,
E. A. HOWELL.