C. B. JOHNSON.

WINDOW SASH HOLDING DEVICE AND LOCK.

APPLICATION FILED OCT. 22, 1921.

1,434,545. **Patented Nov. 7, 1922.**

Fig. 2.

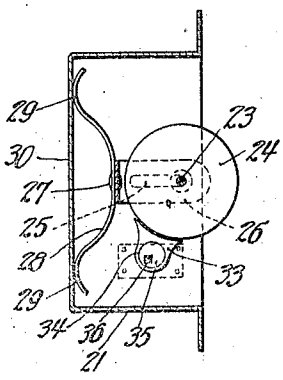


Fig. 3

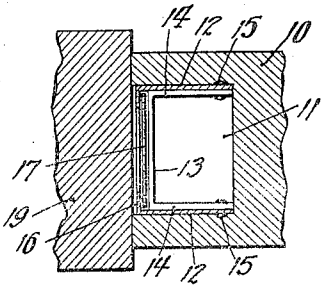


Fig. 1.

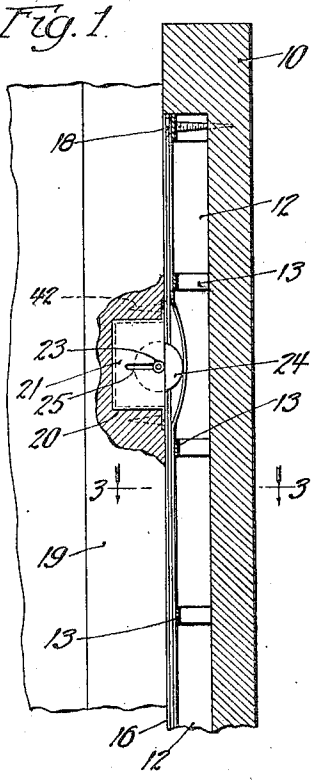


Fig. 4.

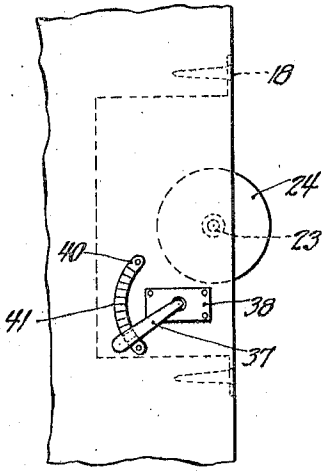


Fig. 5

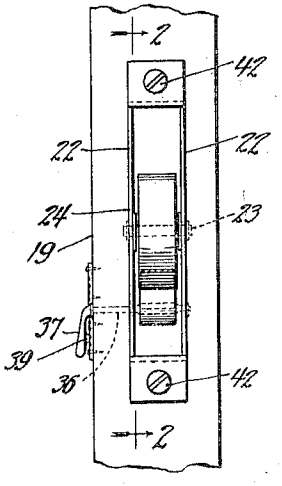
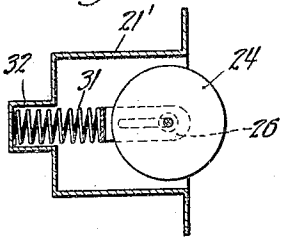


Fig. 6



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UNITED STATES PATENT OFFICE.

CHARLES B. JOHNSON, OF CHICAGO, ILLINOIS.

WINDOW-SASH-HOLDING DEVICE AND LOCK.

Application filed October 22, 1921. Serial No. 509,602.

To all whom it may concern:

Be it known that I, CHARLES B. JOHNSON, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented a certain new and useful Improvement in Window-Sash-Holding Devices and Locks, of which the following is a full, clear, concise, and exact description, reference being had to the accompanying drawings, forming a part of this specification.

This invention relates to window sash holding devices and locks therefor, and more particularly to a window sash holding device which makes it unnecessary to use counterweights in connection with a window.

The present device is used for holding a window in any desired position without the necessity of sash weights for counterbalancing the weight of the window, thus making it unnecessary to provide a pocket in which the weights move, and does away with the pulley for the sash cord and the sash cord itself.

The invention comprises a spring pressed roller suitably mounted in the casing which operates on a resilient strip mounted in the window frame, said strip being mounted in a groove or pocket in the window frame and being provided with supporting braces at spaced intervals. The strip against which the spring pressed roller bears is of such flexibility that the same will be bent out of its normal straight or flat position to a somewhat arcuate position due to the pressure of the roller against the same between adjacent supporting members whereby the window will be held in position, and will be kept from moving downwardly due to its weight because of the bend in the track or strip upon which the roller moves.

It will be obvious that when the roller presses the strip, over which the roller moves, out of its normal position that this will make it necessary to use sufficient force to compress the spring, pressing the roller against the strip when it is desired to move the roller past one of the supports at which point the strip will not be deflected due to its being supported by the supports, and will accordingly act as an obstacle against the free movement of the roller.

It is a purpose of the invention to provide a sash holding device of the above mentioned character which is simple in construction and which will permit of easy operation of the window without permitting the same to move due to its own weight and which will eliminate the sash cord, weights, and pulleys now in use.

It is a further purpose of the invention to provide a lock to be used in connection with said window sash holding device, which comprises a brake which engages with the roller and prevents turning of the same, and also prevents inward movement of the roller, thus preventing the roller from moving past any one of the supports arranged in spaced relation, the brake member in this way effectively preventing the opening of the window beyond a predetermined position.

Other objects and advantages of the invention will appear as the description of the accompanying drawings proceeds. However, I desire to have it distinctly understood that I do not intend to limit myself to the exact details shown or described in the specification, but that I intend to include as part of my invention all such obvious changes and modifications of parts as would occur to a person skilled in this art and as would fall within the scope of the claims.

In the drawings:

Fig. 1 is a view of a portion of the window sash and adjoining window frame, the sash being shown in section partly broken away and the frame being shown in section so as to clearly reveal the improved window sash holding device.

Fig. 2 is a vertical section of the roller member and cooperating parts carried by the window sash, said section being taken on the line 2—2 of Fig. 5;

Fig. 3 is a section taken on the line 3—3 of Fig. 1 showing the construction of the track for the roller mounted in the window frame;

Fig. 4 is a fragmentary side elevational view of the edge portion of the window sash showing the improved holding device in position therein;

Fig. 5 is an edge view of the window sash taken at right angles to Fig. 4; and

Fig. 6 is a view similar to Fig. 2 of a slightly modified roller construction.

Referring in detail to the drawings, in Fig. 1 and Fig. 3 is shown a window frame side member 10 having a longitudinally extending slot or recess 11 therein in which is seated a pair of strips 12 which are secured together at spaced intervals by means of the U-shaped members 13 having the

legs 14 which are secured to the strips in any suitable manner as by means of spot welding, soldering, or by fastening devices, such as shown at 15 in Fig. 3. The members 12 are provided with turned over end portions 16 which extend toward each other to provide stop flanges for holding the resilient strip 17 in position between the members 12. The resilient strip 17, it will be seen from Fig. 3 and from Fig. 1, rests upon the members 13 at spaced intervals, and is positioned in back of the flanges 16 so that the same will be held substantially in fixed position at the points where the supporting members 13 are located. The entire structure comprising the resilient strip, the side members 12 and the supporting members 13 is secured in place in the window frame by means of any suitable fastening devices, such as the screw 18.

Mounted in the window frame 10 is shown a sash 19 which is provided with a pocket or recess at 20 in which is mounted a casing 21 in the side members 22 of which is journaled the axle 23 carrying the roller 24, which roller may project outwardly beyond the casing as shown in the drawings. The axle 23 is mounted in slots 25 in the side members 22, so that the axle and the roller may move inwardly and outwardly in said casing. Mounted on the axle 23 is a U-shaped member 26 having a bight portion 27 to which is riveted the spring 28 which is provided with a bent end portion 29 engaging the rear wall 30 of the casing 21. The spring normally holds the axle 23 in the outer end of the slot 25, so that the roller is projected as shown in the drawings. However, upon pressure being applied to the roller, the same will be moved inwardly and will deflect the spring 28 placing the same under tension. The spring 28 is of such strength that the roller 24 will be forced outwardly with such a force as to deflect or bend the flexible strip 17 as shown in Fig. 1.

It will be seen that if the window is to be either raised or lowered from the position the same occupies in Fig. 1, the roller will have to be forced inwardly when moved toward the brace or strip 13. Accordingly the window will not move downwardly because of the weight thereof, unless it is pulled down by some outside means, thus eliminating the use of sash weights to hold the window in a raised position. If desired, instead of using the leaf spring 28 a coil spring 31 can be used as shown in Fig. 6. In the structure shown in Fig. 6 the casing 21′ is provided with a rearward extension 32 forming a socket to receive the spring, the structure being otherwise the same as in Fig. 2. In order to lock the window in any desired position, a locking device comprising a shoe or brake member 33 is provided which has a circular opening 34 therein in which the eccentric 35 is mounted, said eccentric 35 being mounted on a shaft 36 to turn therewith, the shaft 36 being journaled in the casing 21 and being provided with a handle 37 which extends inwardly of the window sash 19, a plate 30 being provided on the inner face of the window sash through which the handle passes. The handle is provided with a rearward projection 39 which cooperates with a plate 40 having spaced ribs 41 thereon for holding the handle 37 in any desired position. It is, of course, evident that the casing carrying the parts described above can be secured to the sash in any desired manner, as for example by means of the screws 42.

Having thus described my invention, what I desire to claim and secure by U. S. Letters Patent is:

1. The combination with window frame and sash members, of a roller mounted in one of said members, a flexible member mounted in the other of said members, said member being provided with supports for said flexible member at spaced intervals and means for forcing said roller into engagement with said flexible member to deflect said flexible member at the unsupported portions thereof.

2. The combination with window frame and sash members, of a roller mounted in one of said members, a strip of resilient material mounted in the other of said members, said strip being provided at spaced intervals with stiffening means to provide a plurality of flexible and stiffened portions therein and resilient means for holding said roller in engagement with said strip to deflect said strip at the flexible portions thereof.

3. A device of the character described comprising a member adapted to be mounted in a sash, said member comprising a casing, a roller mounted in said casing for movement relative thereto, a strip of flexible material, means for mounting said strip in a window frame opposite said roller, spring means in said casing for holding said roller in engagement with said strip and means in said frame for stiffening said flexible strip at spaced points.

4. A device of the character described comprising a member adapted to be mounted in a sash, said member comprising a casing, a roller mounted in said casing for movement inward and outward relative thereto, a strip of flexible material, means for mounting said strip in a window frame opposite said roller, said means comprising side members having flanges for limiting the outward movement of said strip, spring means in said casing for holding said roller in engagement with said strip and means for stiffening said flexible strip at spaced points.

5. A device of the character described comprising a member adapted to be mounted in a sash, said member comprising a casing,

a roller mounted in said casing for movement inward and outward relative thereto, a strip of flexible material, means for mounting said strip in a window frame opposite said roller, said means comprising side members having flanges for limiting the outward movement of said strip, spring means in said casing for holding said roller in engagement with said strip, and U-shaped members connecting said side members at spaced intervals to hold said strip against inward movement at spaced points.

6. A device of the character described comprising a member adapted to be mounted in a sash, said member comprising a casing, a roller mounted in said casing for movement inward and outward relative thereto, a strip of flexible material, means for mounting said strip in a window frame opposite said roller, spring means in said casing for holding said roller in engagement with said strip, means for stiffening said flexible strip at spaced points, and means engaging said roller to hold the same against turning when desired.

7. A device of the character described comprising a member adapted to be mounted in a sash, said member comprising a casing, a roller mounted in said casing for movement relative thereto, a strip of flexible material, means for mounting said strip in a window frame opposite said roller, spring means in said casing for holding said roller in engagement with said strip, means for stiffening said flexible strip at spaced points, a member mounted in said casing and adapted to engage said roller to lock said roller against movement and a handle for actuating said last mentioned member.

8. A device of the character described comprising a member adapted to be mounted in a sash, said member comprising a casing, a roller mounted in said casing for movement relative thereto, a strip of flexible material, means for mounting said strip in a window frame opposite said roller, spring means in said casing for holding said roller in engagement with said strip, means for stiffening said flexible strip at spaced points, a member mounted in said casing and adapted to engage said roller to lock said roller against movement, a handle for actuating said last mentioned means, and means for holding said handle in locking position.

In witness whereof, I hereunto subscribe my name this 6th day of October, A. D., 1921.

CHARLES B. JOHNSON.