

Sept. 6, 1938.

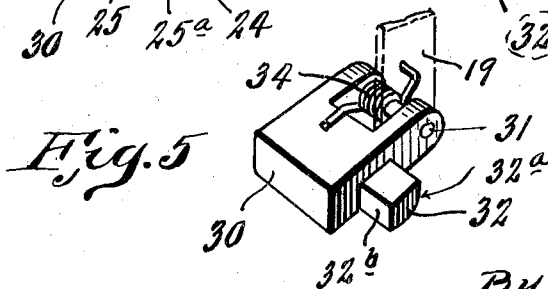
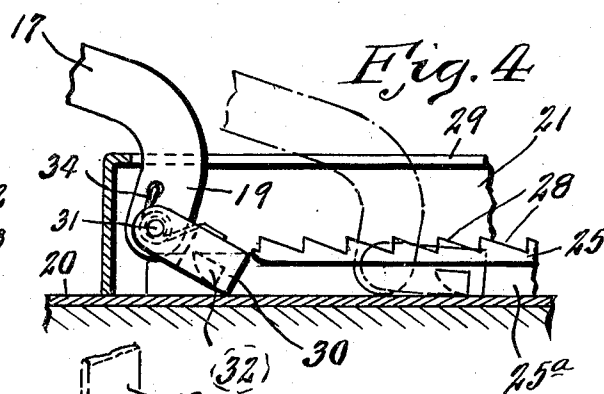
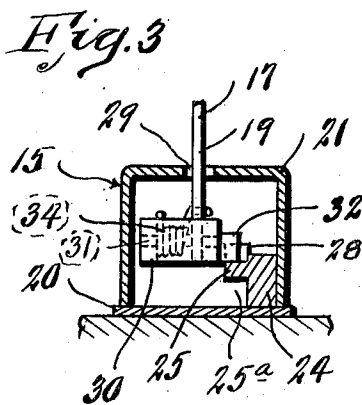
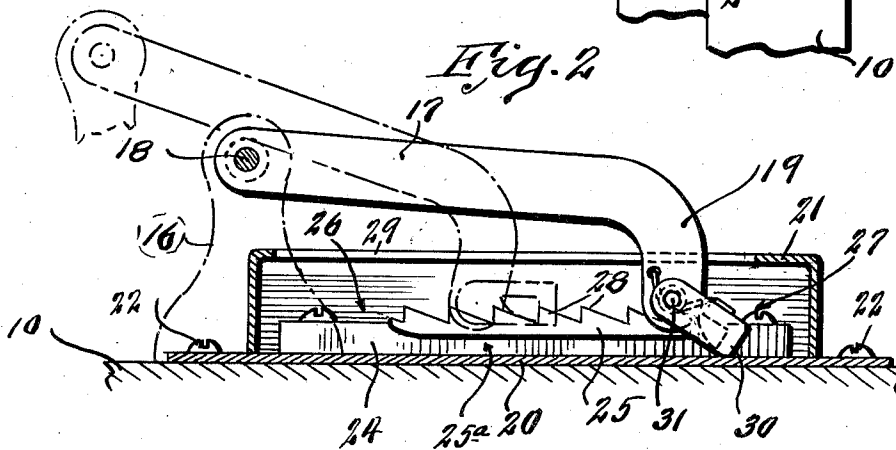
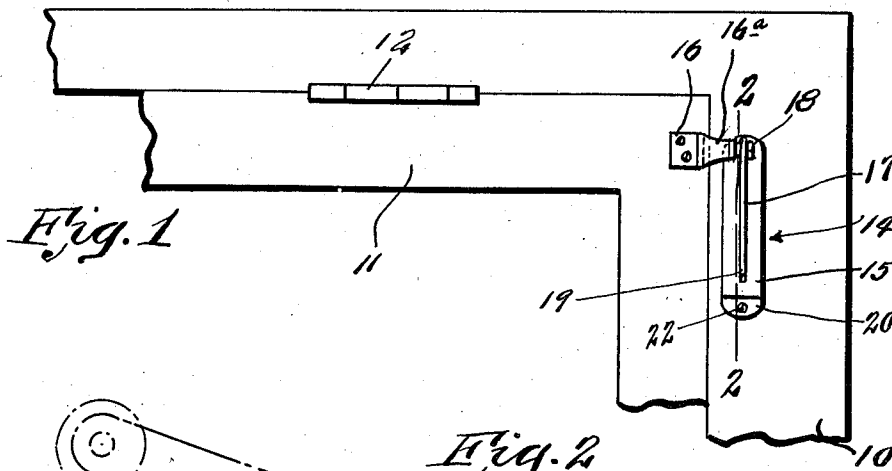
H. H. EDELE

2,129,412

DEVICE FOR HOLDING HINGED CLOSURES IN OPEN POSITIONS

Filed Nov. 8, 1937

2 Sheets-Sheet 1



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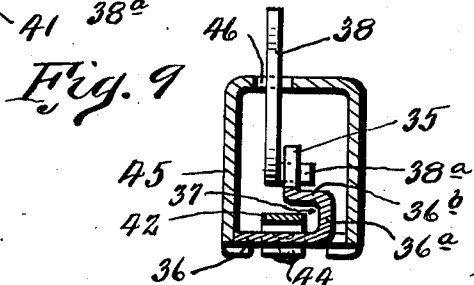
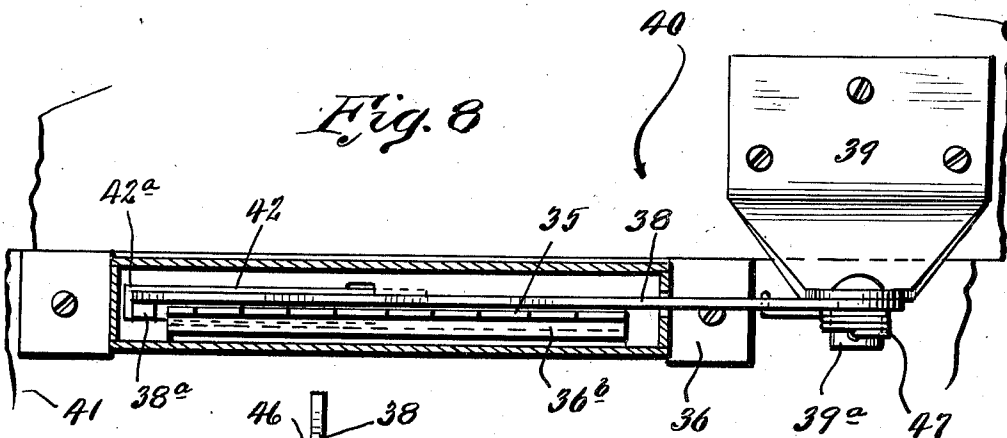
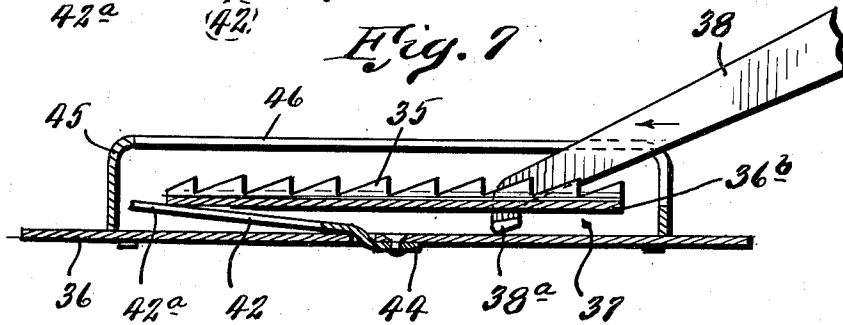
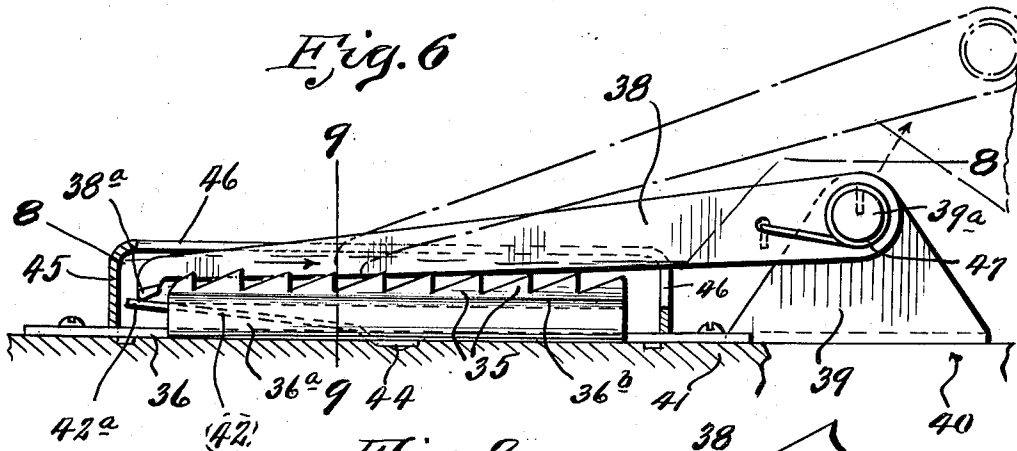
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DEVICE FOR HOLDING HINGED CLOSURES IN OPEN POSITIONS

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2 Sheets-Sheet 2



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UNITED STATES PATENT OFFICE

2,129,412

DEVICE FOR HOLDING HINGED CLOSURES
IN OPEN POSITIONS

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Application November 8, 1937, Serial No. 173,281

6 Claims. (Cl. 292—274)

This invention relates to new and useful improvements in devices for holding hinged closures in open position.

In hinged closures which are hinged at the top and swing on horizontally disposed pivots, such as basement windows, it is necessary to provide means for holding the window open. Generally a hook and eye is used for this purpose. This is unsatisfactory for several reasons as it is necessary to use both hands in opening and closing the window; the hook which is generally attached to the floor joist or ceiling of the basement is unsightly and usually hard to reach; and, furthermore, it is not possible to regulate the extent of the opening of the window.

The object of the present invention is to provide a device which is attached to the window frame and to the window sash and is automatically operated to hold the window in open position and which is neat in appearance.

Another object of the invention is to provide a device of the class described which can be operated to open the closure member to the full extent or to open it only partially in any number of various positions and which is automatically operated by the movement of said closure member.

Additional objects of the invention are to provide a device for basement windows and the like which can be easily attached in position, is of simple but durable construction, and can be economically manufactured.

With these and other objects in view, my invention consists in certain novel features of construction and arrangement of parts, hereinafter more fully described and claimed, and illustrated in the accompanying drawings, in which—

Figure 1 is a front elevational view of my device showing it attached in position.

Figure 2 is an enlarged cross section taken on line 2—2 of Figure 1.

Figure 3 is a transverse cross section taken on line 3—3 of Figure 2.

Figure 4 is a fragmental longitudinal cross section showing the device in position when the window is being closed.

Figure 5 is a perspective detail view of the pawl member.

Figure 6 is a side elevation partly in cross section of a modified form of my invention.

Figure 7 is a longitudinal cross section of my device.

Figure 8 is a cross section taken on line 8—8 of Figure 6.

Figure 9 is a cross section taken on line 9—9

of Figure 6 and showing the pawl in a moved position.

Referring by numerals to the accompanying drawings, 10 indicates one of the stiles of a window frame and 11 a sash window which is hinged at the top to said frame as shown at 12. 14 is a device provided for holding the sash open in any position.

This device includes an elongated housing 15 fixed to the stile 10 longitudinally thereof and 10 near one of the upper corners of sash 11, a bracket 16 fixed to the window sash 11 adjacent to the upper end of said housing, and a link 17 pivotally connected at its upper end to said bracket, as indicated at 18 and having its lower 15 or free end 19 operatively extending into said housing.

The bracket 16 has its shank portion bent or offset as indicated at 16a in order to bring the outer end thereof adjacent to the upper end of link 17. In this manner link 17 is not distorted and the device can be used at either side of the sash simply by transposing the bracket 16.

The housing 15 comprises a base plate 20 and a cover 21. The ends of the plate 20 extend 25 beyond the ends of cover 21 and are apertured to receive screws 22 by means of which said housing is secured to the window frame. The cover 21 is detachable from said plate and is secured thereto in any suitable manner. A longitudinally disposed bar 24 is secured to base 20 to one side of the longitudinal axis of said housing. This bar is formed with a horizontally and longitudinally disposed ledge 25 which is spaced a suitable distance from base 20 to provide a clearance or space 25a. The ends of this ledge terminate short of the ends of cover 21 so as to provide spaces or clearances 26 and 27, respectively. The upper face of this ledge is formed with a plurality of ratchet teeth 28 presented rearwardly 40 or toward the pivot 18.

The outer or lower end 19 of link 17 is disposed angularly to said link and enters said housing 15 through a slot 29 formed longitudinally in cover 21. A block or pawl 30 is pivotally mounted on the extremity of said end 19, as indicated at 31. A tooth 32 extends laterally from said pawl and is adapted to engage the ratchet teeth 28 of bar 24. A spring 34 engages block 30 and presses it downwardly or toward the base 24.

Block 30 occupies a position in housing 15 to one side of the bar 24 and the ratchet teeth portion 25 while the tooth 32 is disposed in the vertical plane of said portion 25. When the window is closed the parts occupy positions shown

in Figures 1 and 2. In this position block 30 is disposed in the forward end of housing 15 with the tooth 32 disposed forwardly of the forward end of the ratchet bar 25. The underside of tooth 32 is curved, as indicated at 32a, and when the window is moved into open position bracket 16 raises the upper end of said link so that the curved underside 32a of tooth 32 moves upwardly over the toothed face of the bar 25. As the tooth 32 passes each tooth 28, the end 32b of said tooth 32 is adapted to engage the straight face of the tooth 28, thereby holding said block 30 against retrograde movement and holding said window in open position, as shown in dot-and-dash lines in Figure 2. Thus each tooth 28 represents a predetermined open position of the window.

When it is desired to close the window it is moved to its extreme upper or open position, whereupon the block 30 will move past the upper or rear end of ledge 25 and will drop against the base plate 20. This will position the tooth 32 below the ledge 25 and as the window is moved into closed position block 30 will travel forwardly with the tooth 32 traversing the space 25a, as shown in dot-and-dash lines in Figure 4. Upon reaching the extreme forward position, i. e., when the window is closed, the parts will assume position shown in full lines in Figure 2.

In the modified form shown in Figures 6 to 9, a ratchet tooth member 35 is formed integrally with the base 36. One side of the latter is formed with an extension which terminates short of the ends of said base and is bent upwardly as indicated at 36a and then horizontally as at 36b and then again upwardly to present the teeth 35 upwardly. The horizontal portion 36b is spaced suitably from the base 36 to provide a longitudinally disposed runway 37 open on one side and at both ends. An elongated pawl 38 is pivotally mounted at one end to a bracket 39 by a pivot 39a. This bracket is fixed to a closure member 40 while the base 36 is fixed to a stationary member 41.

The outer or free end of arm 38 is formed with a laterally projecting tooth 38a which traverses the vertical plane of teeth 35.

A leaf spring 42 is fixed at one end to the underside of base 36 as indicated at 44, and extends through an opening in said base into said runway 37 and forwardly and diagonally thereof with the free end 42a projecting a suitable distance past the forward end of the tooth member 35 and runway 37.

A housing 45 is attached to the base 36 and encloses said tooth member 35 and runway 37 and the free end of arm 38. The top and one end of said housing is slotted as indicated at 46 to allow said arm to operate therethrough.

When the closure member 40 is closed the parts occupy positions shown in full lines in Figure 6, with the pawl or tooth 38a resting upon the free projecting end 42a. When the closure member is moved to open position the arm 38 is moved forwardly and the tooth 38a rides over the teeth of member 35. The reverse movement of the arm 38 is prevented by the engagement of the tooth 38a with the square side of said tooth. Thus the closure member can be supported in any number of positions by the engagement of tooth 38a with the corresponding tooth of ratchet member 35.

To close member 40 the latter is opened to cause the tooth 38a to move past the rear or upper end of member 35, whereupon the free end of

arm 38 drops against base 36 with the tooth 38a disposed below or inwardly of tooth member 35. The member 40 now is free to move into closed position. During this closing movement the teeth 38a traverse the runway 37 in the direction indicated by arrow in Figure 7. Upon reaching the downward or forward end of the travel said tooth 38 rides upon spring 42 and is raised thereby into the position shown in Figure 6.

A coiled spring 47 is arranged on the pivot 39a and connected to arm 38 and tends to hold the tooth 38a against the teeth of member 35 and against the base 36 when cleared of member 35. The tension of this spring 47 is less than that of leaf spring 42 so that the latter is capable of raising the free end of said arm 38 as described.

My device is of simple construction, can be easily applied, and is reliable in operation.

While I have disclosed herein my invention as being applied to a window, it can be equally as well used in connection with bread boxes, trunks, chests and with other hinged closure members. It is obvious that various changes can be made in the construction and arrangement of parts of my device without departing from the spirit of my invention.

I claim:

1. A device of the class described comprising a stationary housing, a ratchet tooth member disposed longitudinally therein, a bracket adapted to be fixed to a hinged closure member, an arm pivotally mounted at one end to said bracket and having its free end extending into said housing a pawl pivotally mounted on said free end for cooperating with said teeth when moved in one direction to hold said closure member in a plurality of open positions, said pawl being displaceable upon the completion of the opening movement of said closure member to move out of locking engagement with said teeth and allow the return movement of said arm and of said closure member.

2. A device of the class described comprising a stationary housing, a ratchet tooth member disposed longitudinally therein and terminating short of the ends thereof, a bracket adapted to be fixed to a hinged closure member, an arm pivotally fixed to said bracket and having one end extending into said housing, a pawl pivotally mounted on said free end of said arm for engaging said ratchet teeth and supporting said closure member in a number of open positions, said pawl being movable by said arm past the ends of said ratchet tooth member whereby upon the completion of the opening movement of said closure member said pawl is moved out of engagement with said ratchet teeth to allow the closing of said closure member.

3. A device of the class described comprising a base, a ratchet tooth member disposed longitudinally thereof in spaced relation therewith to provide a longitudinal runway between said member and said base, a bracket adapted to be fixed to a hinged closure member, an arm pivotally mounted at one end on said bracket and extending longitudinally of said tooth member, a laterally disposed member fixed to the free end of said arm and operating over said ratchet teeth when said closure member is moved into an open position to hold the latter in a plurality of open positions, and means for moving said lateral member upon the completion of the opening movement into said runway out of engagement with said ratchet teeth whereby said closure member can return to closed position.

4. A device of the class described comprising a base, a ratchet tooth member disposed longitudinally thereof in spaced relation therewith to provide a longitudinally disposed runway therebetween, a bracket adapted to be fixed to a hinged closure member, an arm pivotally mounted at one end on said bracket and extending longitudinally of said tooth member, and a spring-pressed pawl pivotally mounted on the free end of said arm and adapted to engage said teeth when said closure member is moved into open position to support the latter in such position, said pawl being movable into said runway out of engagement with said teeth upon the completion of the opening movement so as to allow the closing movement of said closure member.

5. A device of the class described comprising a stationary base, a housing fixed to said base and provided with a longitudinal slot, a ratchet tooth member arranged on said base longitudinally thereof and terminating at both ends short of said housing, said tooth member being spaced from said base to provide a longitudinal runway open on one side and at both ends, a bracket adapted to be fixed to a hinged closure member, an arm pivotally mounted on one end on said bracket and extending longitudinally of said housing and having its free end extending thereinto through said slot, a lateral extension

on the free end of said arm for engaging said ratchet teeth and hold said closure member in a plurality of open positions, said lateral member being movable past one end of said ratchet member upon the completion of the opening movement to enter said runway and permit the return movement of parts associated with said lateral member, and spring means for urging said lateral member in the direction of said teeth and of said runway.

6. In a device of the class described, the combination with a closure member hinged on horizontal pivots and gravity-operated into a closed position, of a bracket fixed to said closure member, a stationary housing fixed adjacent to one side of said closure member, a ratchet tooth member disposed longitudinally in said housing, an arm pivotally mounted at one end to said bracket and having its free end extending into said housing, a pawl fixed on said free end of said arm and adapted to engage any one of said ratchet teeth to support said closure member in a plurality of open positions, and means for displacing said pawl upon the completion of the opening movement of said closure member to disengage said pawl from said teeth and permit the return movement thereof and parts associated therewith.

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