

Aug. 28, 1928.

1,682,205

W. WASSENER
CASEMENT ADJUSTER

Filed Feb. 2, 1926

2 Sheets-Sheet 1

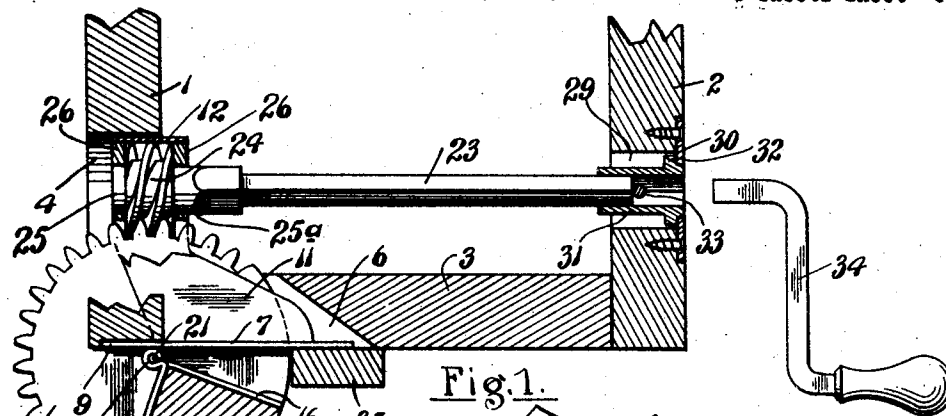


Fig. 1.

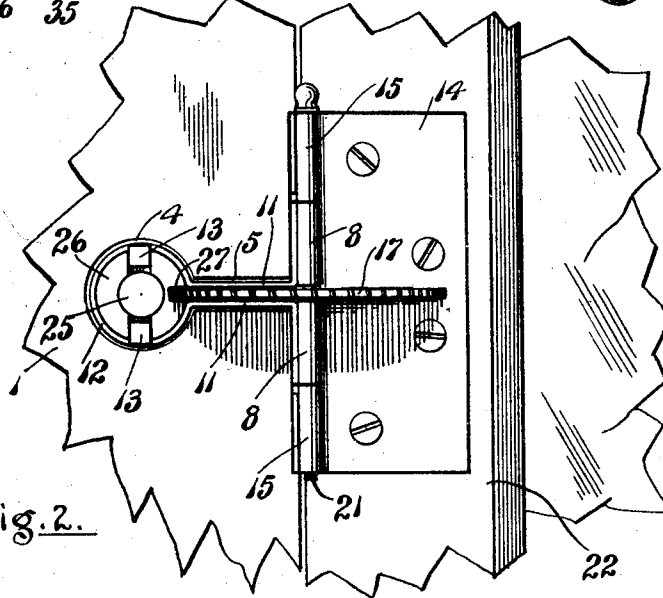


Fig. 2.

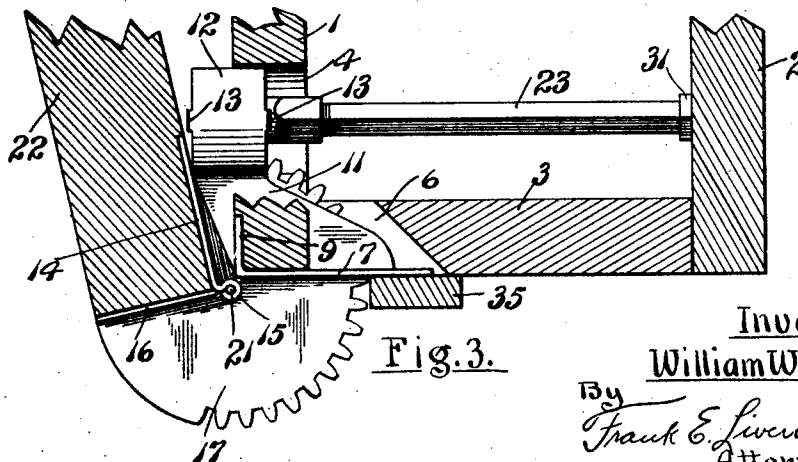


Fig. 3.

Inventor
William Wassener
By Frank E. Liverance, Jr.
Attorney.

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2 Sheets-Sheet 2

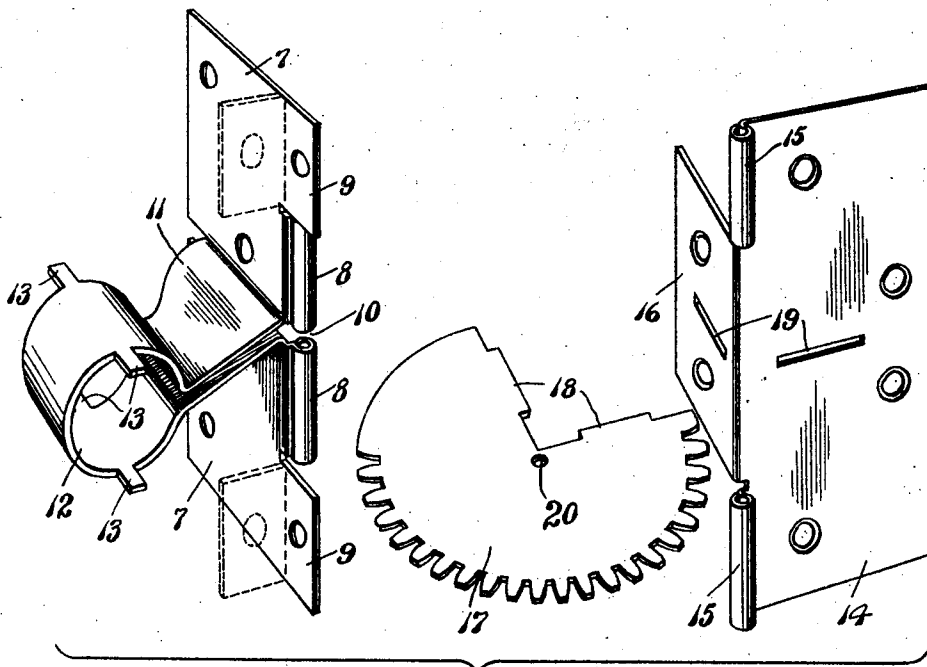


Fig. 4.

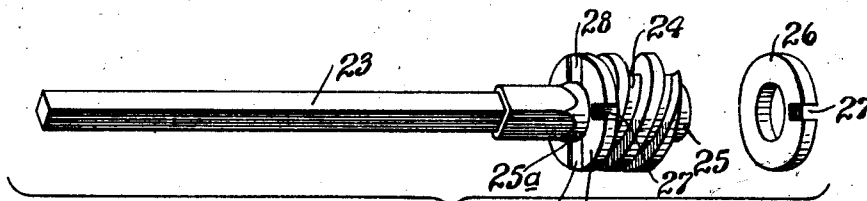


Fig. 5. ²⁸/₂₆

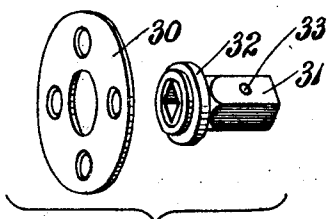


Fig. 6.

Inventor
William Wassener
By Frank E. Liverance, Jr.
Attorney.

UNITED STATES PATENT OFFICE.

WILLIAM WASSENER, OF GRAND RAPIDS, MICHIGAN.

CASEMENT ADJUSTER.

Application filed February 2, 1926. Serial No. 85,457.

This invention relates to a casement window adjusting device and is primarily concerned with a simple and novel means whereby a casement window may be opened to any desired extent and be automatically held in any position to which it is moved. It is a primary object and purpose of the present invention to construct a casement window adjusting mechanism which is of simple character and can be manufactured at low cost, and which is very easily installed and is particularly durable and efficient in service.

To these ends, as well as others which will appear as the description of the invention progresses, I have made the invention illustrated in the accompanying drawings, in which,

Fig. 1 is a fragmentary horizontal section showing the method of hingedly mounting a casement window, the apparatus for adjusting and moving the same to different positions being shown in plan with certain parts in section.

Fig. 2 is a fragmentary elevation of the construction shown in Fig. 1.

Fig. 3 is a view similar to Fig. 1, illustrating the window mounted flush with the outer side of the casement, the construction in Fig. 1 showing the window set a short distance within the outer plane of the casement.

Fig. 4 is a perspective view of the hinge elements disassembled which are used with my invention.

Fig. 5 is a perspective view of the operating rod and associated parts, the turning of which serves to adjust the window to different positions, and

Fig. 6 is a perspective view of certain details of construction for mounting one end of said operating rod.

Like reference characters refer to like parts in the several figures of the drawings.

The casement frame for the window may be of any conventional structure, having an outer side 1 and inner side 2 and a vertical side 3 which bounds one side of the opening in which the window is mounted. A cylindrical opening 4 is bored through the outer side 1 near its inner edge from which a horizontal slot 5 extends to its inner edge, as best shown in Fig. 2. The adjacent portion of the member 3 is likewise provided with a horizontal slot 6, it being evident that in the process of installation of the window mountings, the hole 4 may be bored with a bit or auger and

the slots 5 and 6 cut simultaneously with a saw.

A hinge member combined with which is a housing for the operating member of the casement window, is secured to the side 3, said hinge member comprising upper and lower plates 7 each of which is formed with a pintle receiving roll 8 at its outer edge; and said plates 7 above the upper pintle 8 and below the lower pintle 8, are extended outwardly making the extensions 9, as best shown in Fig. 4. The adjacent ends of the pintles 8 and adjacent edges of the hinge plates 7, are separated a short distance thus providing a slot 10 between them. Sections 11 integral with the plates 7 are extended horizontally from the lower edge of the upper plate and the upper edge of the lower plate 7, paralleling each other and being joined by the integral cylindrical housing member 12 from each end of which upper and lower ears 13 extend. This is best shown in Fig. 4. It is evident that the two hinge plates 7 with the horizontal sections 11 and the housing member 12, are made from a single piece of metal. This member may be applied to the casement frame, the housing member 12 passing into the opening 4, the sections 11 lying in the slots 5 and 6, while the hinge plate 7 lie against the outer side of the member 3 of the casement frame, being secured thereto by screws or other suitable fastenings. Where the window is to be set in a short distance from the outer side of the casement frame, as shown in Fig. 1, the projections 9 lie in the same plane with the hinge plates 7 and are secured to the edge of the front side 1, but where the window is to be set flush with the outer side of the casement frame, these members 9 are turned at right angles, as shown in Fig. 3, lying against the outer side of the casement member 1 and being secured thereto.

The hinge member which is associated with the hinge member just described, comprises a plate 14 having upper and lower spaced apart pintle receiving rolls 15 at one edge between which the metal is turned at right angles making a side 16, as shown in Fig. 4. A gear segment 17 in the form of a circular plate having teeth cut around the same, but with a section cut from one side equalling nearly a quadrant, is attached to the second hinge member, bosses 18 projecting from the edges of the segment 17 where the metal is removed so as to pass through slots 19 cut-

ting the plate 14 and its angular extension 16. These bosses are headed over at their ends so as to permanently secure the segment 17 to the second hinge member.

5 This second hinge member may be pivotally connected to the first hinge member, the segment 17 passing into the slot 10 and between the upper and lower horizontal sections 11 previously described, while the pintle rolls 15 come above and below the pintle rolls 8 on the hinge plates 7. The gear segment 17 is provided with an opening 20 there-through so that when the hinge members are thus placed together a pintle pin 20 may be
10 passed downwardly through the rolls 15 and 8 and through said opening 20. This second hinge member is adapted to be attached to the window 22, the plate 14 lying against the outer side of the window while the extension
15 20 16 lies against an edge thereof, both being permanently secured to the window by means of screws or like suitable fastenings.

To operate the window to change its position, a square rod 23 is equipped at one end
25 with a worm 24 which is adapted to be housed within the housing 12 and engage with the teeth of the gear segment 17, it being apparent that rotation of the rod will cause a change in position of the window 22. The
30 worm 24 is provided at each end with cylindrical projections 25 and 25^a of reduced diameter, over each of which a collar 26 is placed there being one of said collars in each end of the housing 12. Each of these collars
35 at one edge is formed with a slot 27 for the passage of the toothed edge of the segment 17 in order to permit its engagement with the worm 24, and each at its outer side is also formed with surface grooves 28 into which
40 the ears 13 at the end of the housing 12, may be bent so as to secure the same in place.

The rod 23 extends between the sides 1 and 2 of the casement frame and said rod at its inner end passes into an opening 29 bored
45 through the inner side 2 of the casement frame. Around said opening and projecting partly in the same at the inner side of the member 2, is a disc 30 with a central opening through it. A square sleeve 31 formed near
50 one end with a projecting annular collar 32 is located in the opening 29, the collar lying against the inner side of the disc 30 and the end of the square rod 23 being received in the inner end of the sleeve. A pin 33 is secured across the sleeve at the end of rod 23,
55 as shown.

It is apparent that with this construction on rotating the sleeve 31, the worm 24 will be rotated and the angular position of the window 22 changed. The rotation of the sleeve is accomplished by means of a crank 34 having a squared end to fit the sleeve 31. The pin 33 holds sleeve 31 from any inward movement over the rod 23 and maintains said
65 sleeve 31 in proper position with respect to

the disc 31. After the installation is complete the customary window stop 35 is applied to the member 3 of the casement frame and this stop will cover a portion of the slot 6 and the edge of the hinge plates 7. It is not
70 necessary that the hinge plates 7 be made wider than the thickness of the casement sash and when made narrower they will not extend under the stop 35.

The construction described is economical
75 to produce, easy to install and is very durable and efficient in service. With it a casement window may be easily adjusted to any desired position and by reason of the locking effect produced by the worm 24 engaging the
80 gear segment 17 the window will positively remain in any position to which adjusted. The invention is defined in the appended claims and is to be considered comprehensive of all forms of structure coming within their
85 scope.

I claim:

1. In a construction of the class described, a casement frame, a combined hinge and housing member attached to the casement frame
90 including upper and lower hinge parts having lateral extensions at their lower and upper edges respectively, integrally joined together by a cylindrical housing, a window, a
95 second hinge member attached to the window and pivotally connected to the first hinge member, a gear segment rigidly secured to the second hinge member and passing between the upper and lower parts of said combined hinge and housing member and said
100 lateral extensions thereto and into said housing, a worm in engagement with said gear segment mounted in said housing, and a rod connected to the worm adapted to be turned to thereby swing the window with respect to the
105 frame therefor.

2. In a construction of the class described, a casement frame formed at one corner with a horizontal slot and at its outer side with a cylindrical opening in conjunction with said
110 slot, a hinge member attached to said casement frame including upper and lower parts lying against the frame, said parts having lateral extensions at their lower and upper
115 edges, respectively, extending horizontally through said slot and integrally joined by a cylindrical housing located in said cylindrical opening, a window, a second hinge member secured to said window, said hinged member
120 being pivotally connected together, a gear segment secured to said second hinge member and extending between the upper and lower parts of the first hinge member into said housing, a worm housed within said housing in engagement with the gear segment, and means to
125 turn the worm so as to swing the window with respect to its frame.

3. In a construction of the class described, a window frame, a hinge member attached to the window frame, a window, a
130

second hinge member attached to the window, means pivotally connecting said hinge members, a gear segment connected with the second hinge member, a worm in engagement with said gear, means for holding said worm against longitudinal movement, a rod extending from the gear to an inner side of the casement frame, said inner side of the frame having an opening therethrough, a disc having an opening therethrough secured at one end of the said opening in the casement frame, a sleeve fitting over the end of the rod and provided with an annular collar to bear against the inner side of said disc, the end of said sleeve passing through the opening in the disc, and a pin passing through the sleeve so as to contact with the end of the rod, substantially as described.

4. A construction of the class described comprising, a casement frame, a hinge member attached to said casement frame, including upper and lower vertical plates spaced apart at their adjacent edges and having lateral portions turned at right angles from said adjacent edges, said lateral portions being connected by an integral cylindrical housing and said housing having ears extending from each end thereof, a window, a second hinge member secured to the window, means pivotally connecting the hinge members together, a gear segment secured to the second hinge member and extending into said housing, a worm located in said housing, collars, one at each side of the worm located in the adjacent ends of the housing and held therein by said ears, and means to turn said worm so as to swing the window with respect to its frame, substantially as described.

5. The combination with a casement adjuster having a gear with a socket, a shaft adapted to have one end removably inserted in said socket, a sleeve having a socket adapted to removably receive the end of the shaft op-

posite said gear and a bearing member rotatably supporting said sleeve and bearing against a surface thereof opposite said gear to hold the sleeve on the shaft.

6. The combination with a casement adjuster having a gear with a socket, a shaft adapted to have one end inserted in said gear socket, a sleeve having a socket adapted to removably receive the end of the shaft opposite said gear, a bearing member rotatably supporting said sleeve and engaging a surface of said sleeve opposite said gear, said bearing member being removable from said sleeve by moving it in a direction away from said gear and said sleeve being removable from said shaft by moving it in a direction away from said gear.

7. A casement adjuster including an integrally formed hinge member and gear housing comprising upper and lower hinge parts arranged in the same plane and having lateral extensions at their respective adjacent edges, said lateral extensions being spaced apart and integrally joined at their outer ends by a cylindrical housing.

8. A casement adjuster including an integrally formed hinge member and gear housing comprising upper and lower hinge parts arranged in the same plane and having lateral extensions, at their respective adjacent edges, said lateral extensions being spaced apart and integrally joined at their outer ends by a cylindrical housing, closures for the respective ends of said cylindrical housing, said closures being held from outward movement by ears formed integral with said housing and engaging the outer surfaces of said closures and a gear located within the housing between the closures and bearing against the inner surfaces thereof.

In testimony whereof I affix my signature.

WILLIAM WASSENER.