C. D. TABOR.
ADJUSTER FOR SASHES AND DOORS.
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To all whom it may concern:

Be it known that I, Clinton D. Tabor, a citizen of the United States, residing at New Dorp, in the county of Richmond and State of New York, have invented and useful improvements in Adapters for Sashes and Doors, of which the following is a specification.

This invention relates to an adjusting device which is more particularly designed for holding the horizontally swinging sashes of casement windows in a more or less open position although the same may also be used for holding doors and the like swinging members of a building in position while opened more or less so that they are not liable to be shifted accidentally or slammed by wind pressure.

It is the object of this invention to provide an adjusting device of this character which can be produced at comparatively low cost, which can be easily applied to various kinds of horizontally swinging sashes, doors and the like, which operates efficiently and without undue wear on the parts and which is neat in appearance and not liable to get out of order.

In the accompanying drawings: Figure 1 is a fragmentary elevation of a casement window equipped with one form of my improved adjusting device. Fig. 2 is a vertical transverse section thereof taken in line 2—2, Fig. 1. Fig. 3 is a fragmentary horizontal section, on an enlarged scale, taken in line 3—3, Fig. 1. Fig. 4 is a detached rear elevation of the adjusting device. Fig. 5 is a vertical transverse section taken in line 5—5, Fig. 3. Fig. 6 is a fragmentary elevation of a casement window equipped with an adjusting device embodying my invention but constructed slightly different from that shown in Figs. 1—5. Fig. 7 is a vertical transverse section taken in line 7—7, Fig. 6. Fig. 8 is a vertical longitudinal section of the adjusting device, on an enlarged scale, taken in line 8—8, Fig. 7. Fig. 9 is a bottom plan view of the adjusting device shown in Fig. 8. Fig. 10 is a vertical transverse section taken in line 10—10, Fig. 8.

Similar characters of reference indicate corresponding parts throughout the several views.

Although my improved adjusting device is applicable to various forms of casement windows, doors and the like the same is shown in the drawings as applied to a casement window which comprises a horizontal sill 1 having an outwardly facing shoulder or rabbit 2, a horizontal upper head 3, two upright stiles 4, 5 connecting corresponding ends of the sill and head and a sash 6 pivotally mounted at one of its vertical edges on one of the frame stiles by means of hinges 7 so that the same can be swung horizontally in line with the frame or into a more or less open position and can also be moved downwardly into engagement with the rabbit or shoulder 2 of the sill for forming a weather tight joint therewith and to be raised above said shoulder or rabbit to permit the sash to be swung horizontally on its hinges into an open position.

The adjusting device shown in Figs. 1—5 and embodying one form of my invention is constructed as follows: 8, 9 represent two adjusting bars which are arranged horizontally and side by side and capable of sliding lengthwise one upon the other with their opposing inner ends while their opposite outer ends or extremities are pivotally connected respectively with the sash and frame of the window. As shown in Figs. 1, 3 and 4, the two adjusting bars are arranged horizontally side by side so that one of the bars is in front and the other in the rear relatively to each other. Upon swinging the sash horizontally into its open or closed position the adjusting bars slide lengthwise upon each other and this movement is resisted by a frictional locking device which also operates to hold these bars yieldingly against lengthwise movement upon each other and thereby retains the sash yieldingly in whatever position the same may be placed. In its preferred form this friction device comprises a yoke which embraces both bars and is pivoted on one of the bars and provided with a pressing member which is held by means of a spring against the other bar. As shown in the drawings, the yoke consists of two side pieces or cleats 10 which are arranged transversely on opposite sides of the edges of the adjusting bar and a cross piece 11 connecting the side pieces in front of the front adjusting bar. The yoke is preferably pivotally connected with the front bar and this pivotal connection is preferably effected by means of a transverse pin 30 connecting one pair of corresponding ends of the side pieces of the yoke and ar-
ranged within a bearing notch or recess 12 formed on the inner or rear side of the front bar facing the inner or front side of the rear bar, whereby the mouth of this notch is closed by the rear bar and a completed bearing is provided for the pivot pin 50 for holding the yoke in place relatively to the adjusting bars but permitting the yoke to swing freely horizontally or transversely relatively to said bars. This means of pivotally connecting the yoke with one of the adjusting bars is very simple and inexpensive and permits of quickly assembling the parts as well as dismembering the same for inspection, adjustment or repairs.

13 represents a pressing or locking member mounted on the yoke and adapted to frictionally engage with the rear adjusting bar. This pressing member preferably consists of a roller engaging with the rear side of the rear adjusting bar and pivoted by means of a vertical pin 14 to the rear parts of the yoke side pieces and at that end of the latter opposite to where these side pieces are pivotally connected to the front adjusting bar by the pin 50. The yoke is constantly pressed yieldingly in a direction for holding the pressing roller against the rear side of the rear bar by a tension device which in its preferred form consists of a spring 15 arranged between the side pieces of the yoke and resting with its rear end in a socket 16 formed in the front side of the front adjusting bar while its front end engages with the rear end of an adjusting screw 17 arranged in a screw threaded opening in the cross piece of the yoke, as best shown in Fig. 3. By means of this adjusting screw the tension of the spring may be regulated as desired to produce the required pressure of the roller against the rear side of the bar. As this screw is on the front side of the fixture where it is conveniently accessible it is possible to readily adjust the tension of the spring for obtaining the necessary pressure of the roller for holding the sash reliably in position after adjustment. Upon opening or closing the sash by swinging the same horizontally on its hinges the pressure roller moves lengthwise along the rear side of the rear adjusting bar and in order to permit of holding the sash firmly in different positions the rear side of the rear bar is provided with a horizontal row of locking notches 18 which are suitably spaced. Each of the notches is preferably of V-shaped form in horizontal section and adapted to be engaged by the roller or locking roller 13 of the yoke. When this locking roller engages with one of the locking notches or recesses the two adjusting bars are held frictionally against movement lengthwise relatively to each other, the tension of the spring being so adjusted that the cooperation of the roller 13 and one of the notches 18 practically forms a lock which holds the sash in an open position. This lock, however, yields when a pressure is applied to the sash sufficiently to overcome the tension of the spring 15 thereby permitting the sash from being closed accidentally under normal conditions but permitting the same to be either opened or closed at will by hand pressure or to yield under excessive wind pressure so as to prevent breaking of the sash but preventing slamming thereof. If desired the yoke and associated parts may serve as the sole means for holding the adjusting bars in place relatively to each other but it is preferable to use in addition thereto a guide loop 19 which is applied to the outer end of the rear bar and the inner end of the front bar, which loop, as shown in Figs. 3 and 4 is preferably constructed of U-shape and secured by means of rivets or otherwise to the rear bar while the front bar slides through the same.

Various means may be employed for pivotally connecting the outer ends or extremities of the adjusting bars with the sash and frame of the window so as to permit the sash to rise and fall freely without cramping the adjusting device or interfering with its adjusting function. The preferred means for this purpose which are shown in Figs. 1, 2, 3 and 4 comprise a bracket 20 secured to the sash adjacent to its hinged edge, a bracket 21 mounted on the frame adjacent to that side opposite to the pivotal connection between the sash and frame and two swivel blocks 22, 23 each of which has a vertical eye or opening 24 and a horizontal eye or opening 25. The vertical eye of one of these swivel blocks receives an upwardly projecting pivot pin or pintle 26 on the upper end of the bracket on the sash and its horizontal eye receives a pivot screw or pin 27 on the adjacent inner end of the rear adjusting bar while the other swivel block 25 rests upon the bracket 21 on the window frame and is pivotally connected therewith by means of a vertical pivot pin or pintle 28 projecting upwardly from the frame bracket through the vertical eye of this swivel block while the horizontal eye of the frame swivel block receives a horizontal pivot screw or pin 29 arranged on the inner end of the front adjusting bar. By this means the inner ends or extremities of the adjusting bars are connected by universal joints or couplings with the sash and frame which permits the sash to rise and fall freely without disturbing the operation of the adjusting bars relatively to each other and the frictional locking or holding device applied to these bars.

This improved adjusting device is applicable not only to casement windows in which the sash is capable of rising and falling as
well as swinging horizontally but it is also applicable to casement windows in which the sash is incapable of being elevated. The same can also be applied to windows in which the sash swings either inwardly or outwardly. Furthermore, this construction of adjusting device can be applied either to the upper parts of the sash and frame where it is shown in Figs. 1 and 2 or the same may be applied to the lower parts of the sash and frame without altering its operation.

In the modified construction of my improved adjusting device shown in Figs. 6-10, the adjusting bars 30, 31 are arranged lengthwise one above the other and the pivot pin 32 of the locking yoke 33 engages with a bearing notch 34 in the underside of the upper bar while the presser or locking roller 35 thereof is held yieldingly in engagement with the underside of the under bar and with one or another of a horizontal row of V-shaped notches 36 in the underside of the last mentioned bar by means of a spring 37 engagement at one end while a recess or socket 38 in the upper side of the upper bar and at its other end with an adjusting screw 39 on the cross piece of the yoke. The inner end of the upper bar is pivotally connected with a bracket 40 on the sash by means of a pivot pin or pintle 41 arranged on this bracket and engaging with an opening 42 in the inner end of the upper bar, this opening being flared toward opposite ends and the pivot pin 41 being tapered or narrowed toward its opposite ends so as to permit the sash to rise and fall and the adjusting bars to tilt in following the movement of the sash without interfering with the operation of the adjusting device so as to become cramped. The opposite or inner end of the lower adjusting bar is in like manner connected with a bracket 43 on the frame by means of a pin or pintle 44 projecting upwardly therefrom into an opening 45 in the inner end of the lower bar, said opening flaring toward its opposite ends and the pin or pintle tapering toward its opposite ends so as to permit the lower bar to rock vertically relatively to said bracket without cramping the pivotal connection between the same upon raising or lowering the sash.

The various parts of this sash adjuster are of simple construction which can be produced at comparatively low cost, the same can be easily assembled or dismembered for inspection or repairs, it can be readily installed on a variety of horizontally swinging sashes, doors or the like and the same is very compact and neat in appearance so that it is not objectionable in finelv finished rooms.

I claim as my invention:\n
1. An adjuster for pivoted sashes or doors comprising two adjusting bars capable of sliding lengthwise relatively to each other, one of said bars adapted to be pivotally connected with the sash or door and the other with the frame, and frictional means for yieldingly holding said bars against movement on each other comprising a yoke pivoted at one end on one of said bars and having a part at its opposite end engaging with the other bar.

2. An adjuster for pivoted sashes or doors comprising two adjusting bars capable of sliding lengthwise relatively to each other, one of said bars adapted to be pivotally connected with the sash or door and the other with the frame, and frictional means for yieldingly holding said bars against movement on each other comprising a yoke embracing both of said bars and pivoted at one end to one of the same and provided with a pressing member at its opposite end engaging with the other bar, and a spring interposed between the bar to which the yoke is pivoted and the adjacent part of said yoke.

3. An adjuster for pivoted sashes or doors comprising two adjusting bars capable of sliding lengthwise relatively to each other, one of said bars adapted to be pivotally connected with the sash or door and the other with the frame, and frictional means for yieldingly holding said bars against movement on each other comprising a yoke embracing both of said bars and pivoted at one end to one of the same and provided with a roller at its opposite end engaging with the other bar, and a spring interposed between the bar to which the yoke is pivoted and the adjacent part of said yoke.

4. An adjuster for pivoted sashes or doors comprising two adjusting bars capable of sliding lengthwise relatively to each other, one of said bars adapted to be pivotally connected with the sash or door and the other with the frame, and frictional means for yieldingly holding said bars against movement on each other, comprising a yoke embracing said bars and having a pivot pin engaging with a notch on the inner side of one of said bars and provided with a pressing member engaging with the outer side of the other bar.

5. An adjuster for pivoted sashes or doors comprising two adjusting bars capable of sliding lengthwise relatively to each other, one of said bars adapted to be pivotally connected with the sash or door and the other with the frame, and frictional means for yieldingly holding said bars against movement on each other comprising a yoke embracing said bars and having a pivot pin engaging with a notch on the inner side of one of said bars and provided with a pressing member engaging with the outer side of the other bar.
comprising two adjusting bars capable of sliding lengthwise relatively to each other, one of said bars adapted to be pivotally connected with the sash or door and the other with the frame, and frictional means for yieldingly holding said bars against movement on each other comprising a yoke pivotally connected on one of said bars and having a pressing member engaging with the outer side of the other bar, and a spring operating to turn the yoke in the direction for holding said pressing member against the companion bar and bearing at one end against said yoke and seated at its other end in a recess in the outer side of the bar to which the yoke is pivoted.

7. An adjuster for pivoted sashes or doors comprising two adjusting bars capable of sliding lengthwise relatively to each other, one of said bars adapted to be pivotally connected with the sash or door and the other with the frame, and frictional means for yieldingly holding said bars against movement on each other, comprising a yoke pivoted on one of said bars and having a pressing member engaging with the outer side of the other bar, and a spring operating to turn the yoke in the direction for holding said pressing member against the companion bar and seated at one end in a recess in the outer side of the bar to which the yoke is pivoted, and an adjusting screw mounted on the yoke and engaging with the other end of said spring.

8. An adjuster for pivoted sashes or doors comprising two adjusting bars capable of sliding lengthwise relatively to each other, one of said bars adapted to be pivotally connected with the sash or door and the other with the frame, and frictional means for yieldingly holding said bars against movement on each other, comprising a yoke having two side pieces extending across the joint between said bars at opposite edges thereof and pivotally connected with one of said bars, a cross piece connecting one pair of corresponding edges of the side pieces and arranged opposite the outer side of the bar to which the side pieces are pivoted, a presser roller mounted on the opposite edges of the side pieces and engaging with the outer side of the other bar, and a spring interposed between the cross piece of the yoke and the bar to which the side pieces are pivoted.

9. An adjuster for pivoted sashes or doors comprising two adjusting bars capable of sliding lengthwise relatively to each other, one of said bars adapted to be pivotally connected with the sash or door and the other with the frame, and frictional means for yieldingly holding said bars against movement on each other, comprising a spring operated yoke pivoted at one end on one of said bars and provided at its opposite end with a pressing member adapted to engage with one or another of a row of notches in the other bar.

Witness my hand this 25th day of March, 1913.

CLINTON D. TABOR.

Witnesses:

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Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."