Nov. 12, 1963 A. BRENNER 3,110,486

EXTENSIBLE VENT LINK FOR AWNING WINDOWS

Original Filed April 19, 1960 3 Sheets-Sheet 1

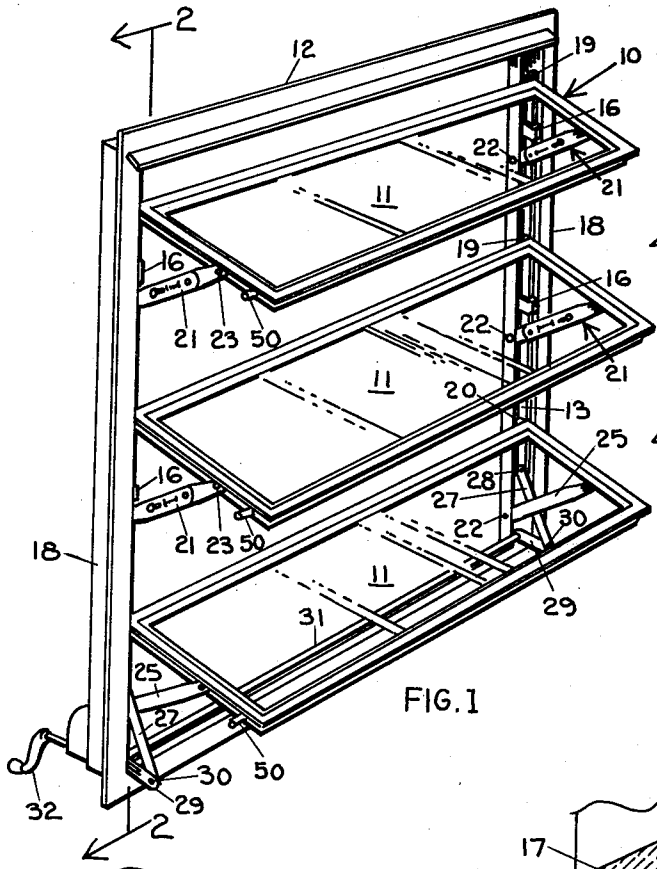


FIG. 1

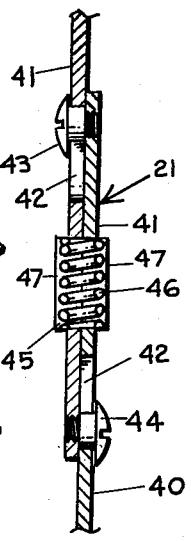


FIG. 9

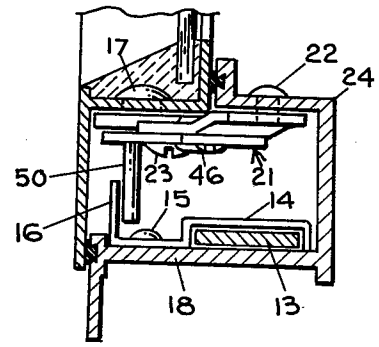


FIG. 5

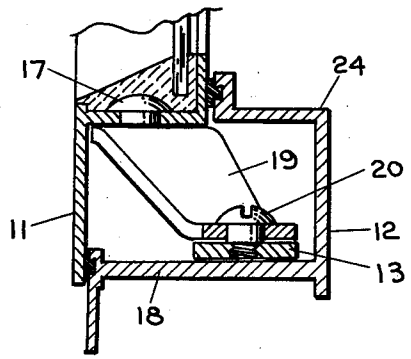


FIG. 6

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EXTENSIBLE VENT LINK FOR AWNING WINDOWS

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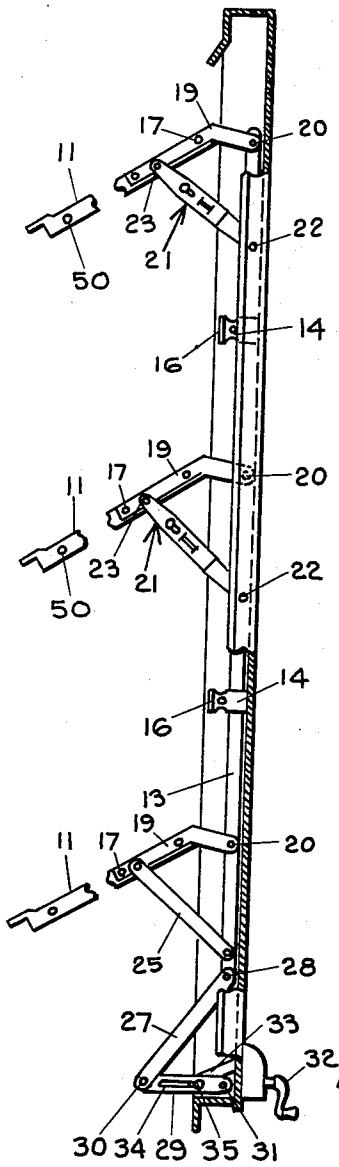


FIG. 2

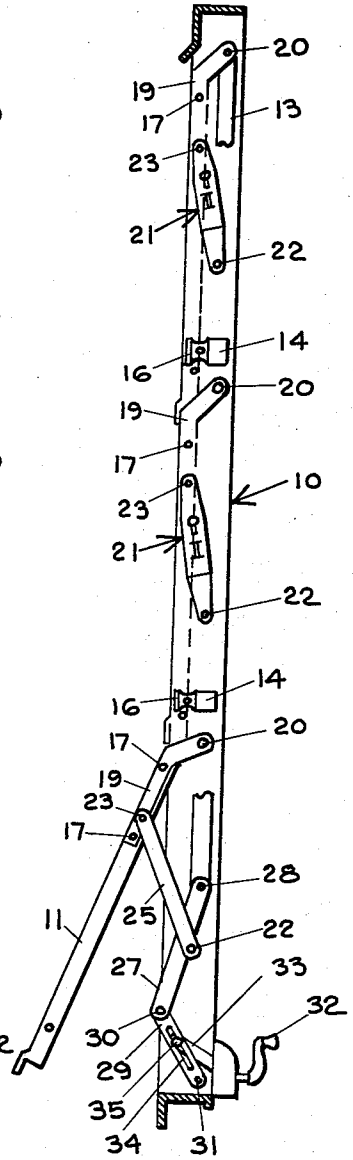


FIG. 3

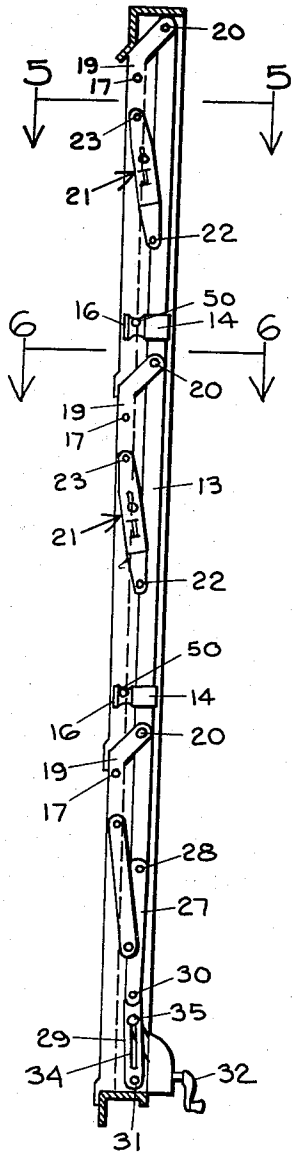


FIG. 4

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EXTENSIBLE VENT LINK FOR AWNING WINDOWS

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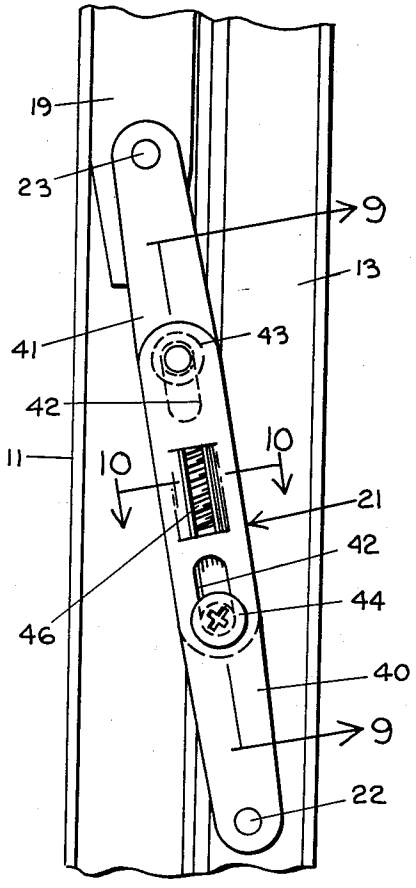


FIG.7

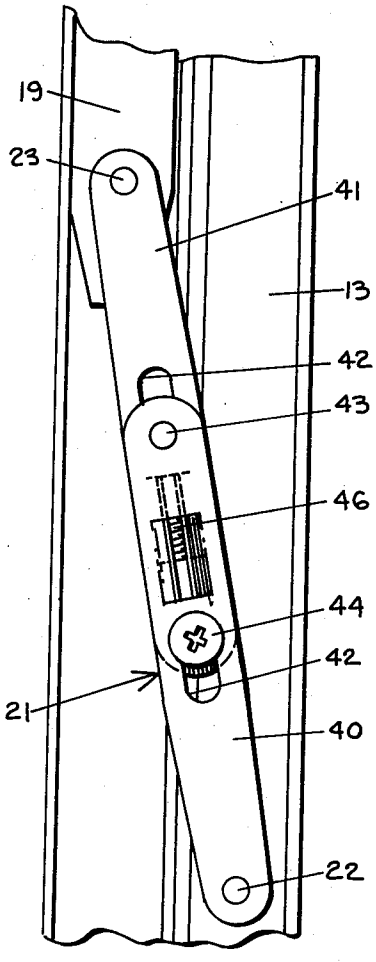


FIG.8

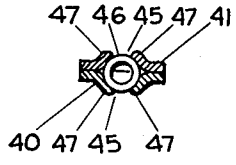


FIG.10

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3,110,486

EXTENSIBLE VENT LINK FOR AWNING WINDOWS

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Continuation of application Ser. No. 23,166, Apr. 19, 1960, now Patent No. 3,070,853, dated Jan. 1, 1963. This application Feb. 5, 1962, Ser. No. 174,341
2 Claims. (Cl. 267—71)

This invention relates to awning windows and is more particularly directed to a vent link for awning window structure which permits the locking of the vents in their closed position and the opening of a portion of the vents prior to the opening of all the vents.

The present application is a continuation of application Serial No. 23,166, filed on April 19, 1960, and now Pat. No. 3,070,853 patented January 1, 1963 and entitled Awning Window.

A principal object of the present invention is to provide an awning window with operating mechanism which causes the automatic locking of the vents when in their closed positions.

Another object of the present invention is to provide an awning window with a plurality of vents, the lowermost one of which is arranged to open slightly while the other vents are still in their closed position.

A still further object of the present invention is to provide an awning window which assures the closing of all vents to their weather-tight position even though the operating mechanism for any of them may be slightly out of adjustment without subjecting any of the operating mechanism to any strain, undue wear or danger of buckling or fracturing of the various parts thereof.

A still another object of the present invention is to provide an awning window with vent links constructed of a pair of extensible members slidably joined together and maintained in a compressed position by a coil spring which yieldingly permits the members to become extended to permit the locking of the vents.

With these and other objects in view, the invention will be best understood from a consideration of the following detailed description taken in connection with the accompanying drawings forming a part of this specification, with the understanding, however, that the invention is not confined to any strict conformity with the showing of the drawings but may be changed or modified so long as such changes or modifications mark no material departure from the salient features of the invention as expressed in the appended claims.

In the drawings:

FIGURE 1 is a perspective view of an awning window constructed in accordance with my invention.

FIGURE 2 is a longitudinal cross sectional view taken along the line 2—2 of FIGURE 1.

FIGURE 3 is a similar view with the upper vents shown in their initially closed position and the lowermost vent slightly opened.

FIGURE 4 is a similar view with all of the vents in their closed and locked positions.

FIGURES 5 and 6 are transverse cross sectional views taken along the lines 5—5 and 6—6 respectively of FIGURE 4.

FIGURES 7 and 8 are enlarged fragmentary views of the vent links as they appear in FIGURES 3 and 4 respectively.

FIGURE 9 is a cross sectional view taken along the line 9—9 of FIGURE 7.

FIGURE 10 is a cross sectional view of my vent link taken along the line 10—10 of FIGURE 7.

Referring to the drawings wherein like numerals are used to designate similar parts throughout the several views, the numeral 10 refers to an awning window which embodies my invention and consisting of a plurality of vertically swinging vents 11 mounted on a frame 12 having stiles 18. Although the awning window 10 is shown having three vents 11 any number of vents 11 may be used as desired determined by the over all height of the window 10.

Along each of the stiles 18 of the frame 12 is a vertically disposed slide bar 13 maintained in a slidable position on the frame 11 by a plurality of brackets 14 which are secured to the inside wall of the stiles 18 by screws 15. At the forward end of the brackets 14 there is provided a flanged portion 16 extending at approximately right angle to the vertical side wall 18 of the frame 12 and whose function is described in detail hereinafter.

Each of the vents 11 are provided with a pair of hinge plates 19 secured at the top portion of each side of the vents 11 as by screws 17 with the ends extending beyond the top edge of the vent and pivotally secured as at 20 to the slide bars 13. At the lower end of each of the hinge plates 19 of all the vents 11 except the bottom vent there is a vent link 21 whose upper end is pivotally mounted as at 23 to the vents 11 and their lower ends extending rearwardly to an inner side wall 24 of the stile 18 where the pivot link 21 is pivoted by a pivot pin 22. The bottom vent 11 is provided with vent links 25 which are pivotally secured by the pivot pin 23 to the hinge plates 19 and at their lower ends to the side wall 24 by the pivot pins 22. It can readily be noted that by means of the above described construction when the slide bars 13 are made to slide downwardly, the upper end of the vent links 21, 25 whose lower ends are pivotally secured to the frame wall 24 will swing outwardly and downwardly as the hinge plates 19 slide downwardly with the slide bars 13. The vents 11 are caused to be brought to their open position as shown by FIGURE 2. To close the vents 11, the slide bars 13 are made to slide upwardly carrying the hinge plates 19 and causing the upper ends of the vent links 21, 25 to swing upwardly and inwardly until the vents 11 arrive at their closed position as shown by FIGURES 3 and 4.

Means are provided for operating the slide bars 13 in unison comprising operating links 27 each of whose upper end is pivoted as at 28 to the lower end of the slide bars 13. The lower ends of the operating links 27 are secured to one end of a power arm 29 by a pivot pin 30, the other end of the power arms 29 being secured to the ends of a cross shaft 31. The extreme ends of the cross shaft 31 are journalled in bearings (not shown) to permit the ready rotation of the cross shaft 31 and the consequent easy manipulation of the operator 32 for opening and closing the vents 11. The operator 32 which is mounted on one side of the frame 12 is of conventional construction and is provided with an operator arm 33 whose free end 35 is slidably positioned in an elongated slot 34 in the power arm 29. As the operator 32 is actuated the operator arm 33 is swung in an arc to cause the power arm 29 to swing and the slide bars 13 in opening and closing the vents 11 as aforementioned.

The structure discussed hereinabove is conventional and well known to the art, but is one which requires a meticulous and constant adjustment so that all of the vents will come to a tightly closed position simultaneously. If the vents 11 did not close properly, then its weather-tight efficiency would be low. Any attempt to bring a vent which is opened to a closed position when one or more of the other vents are closed, will cause the various operating mechanism to become distorted, strained or broken and pivot pins to be sheared or gears

becoming threaded. Also, the vents of a conventionally constructed awning window cannot automatically become locked upon closing.

Means are provided herein to assure the closing of all of the vents **11** whether or not the vents come to a closed position simultaneously and also lock the vents **11** as they arrive at their completely closed position consisting of the vent link **21** which is constructed of a pair of slidably mounted members **40** and **41**. Each of the members **40** and **41** as provided with an elongated slot **42** through which extends a pin **43** and **44**. The pin **43** is secured to the member **40** and extends through the slot **42** in the member **41** while the pin **44** is secured to the member **41** and extends through the slot **42** of the member **40**. Both of the pins **43** and **44** are provided with a head for engaging the members **40** and **41** to compel the parts to remain slidably together. The members **40** and **41** are also provided with opposed openings **45** for receiving a coil spring **46**, which is retained therein by outwardly extending wall portions **47** at the position of the openings **45**.

The lowermost vent **11** is provided with the vent links **25** which are of conventional single member construction. When the operator **32** is actuated to close the vents **11**, the upper vents **11** will arrive at a contact position with the frame **12** while the lowermost vent **11** is still in a slightly opened position as shown by FIGURE 3. This permits a person to open the lowermost vent **11** while maintaining the upper vents **11** in their closed position, which is desirable during the cold or otherwise inclement weather. If it is decided to close all of the vents **11**, a further actuation of the operator **32** will cause the slide bar **13** to slide upwardly carrying the hinge plates **19** and causing the vents **11** to swing inwardly. Since the lowermost vent **11** had not yet arrived at its closed position, it will swing to its closed position. However, since the upper vents **11** were in their closed positions and cannot swing inwardly any further, the continued rotation of the operator **32** causes the upper vents **11** to slide upwardly on the frame **12** by virtue of the vent links **21** which will expand in length against the coil spring pressure **46**. The members **40** and **41** will slide along each other compressing the coil spring **46**. As the vents **11** slide upwardly on the frame **12**, a pin **50** which is mounted on each side of the vents **11**, will slide upwardly to a position behind the flanged member **16** thereby locking the vents **11**.

In opening the vents **11**, as the operator **32** is actuated, the slide bar **13** will immediately commence sliding downwardly. The links **21** which had had their respective coil springs **46** compressed during the locking operation will now permit the coil spring **46** to expand to its normal position causing the vents **11** to slide downwardly and the pin **50** to slide to a position below the flange member **16**. At the same time the lowermost vent **11** having the conventional vent link **25** will swing to a slightly opened position as shown by FIGURE 3. Since its vent link **25** is of solid construction after the springs **46** are back to their expanded condition and the pins **43**, **44** engage the outer edges of the slots **42**, the links **21** then operate in the same manner as the links **25** and cause the vents **11** to swing outwardly to their open position.

What I claim as new and desire to secure by Letters Patent of the United States is:

1. An extensible vent link for an awning window comprising a pair of elongated members positioned substantially overlapping and in contact relation with each other, each of said elongated members having a slot, a pin secured to each of said elongated members and extending into the slot of the other elongated member, means maintaining said elongated members in substantially contact relation, each of said elongated members having a further slot in juxtaposition with each other, spring means mounted in said further slots, and spring retaining means mounted on said elongated members for maintaining said spring means in said slots while said spring means yieldingly urges said elongated members into its non-extended position.

2. An extensible vent link for an awning window comprising a pair of elongated members positioned in substantially overlapping and contact relation with each other, each of said elongated members having a slot, a pin secured to each of said elongated members and extending into the slot of the other elongated member, each of said pins having a head portion engaging the outer surface of said elongated members at said slots for maintaining said elongated members in substantially contact relation, each of said elongated members having a slot in juxtaposition with each other, spring means mounted in said juxtaposed slots for yieldingly maintaining said elongated members in its non-extended position and wall means extending outwardly from side edges of said juxtaposed slots engaging said spring means for maintaining said spring means in said last named slots.

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