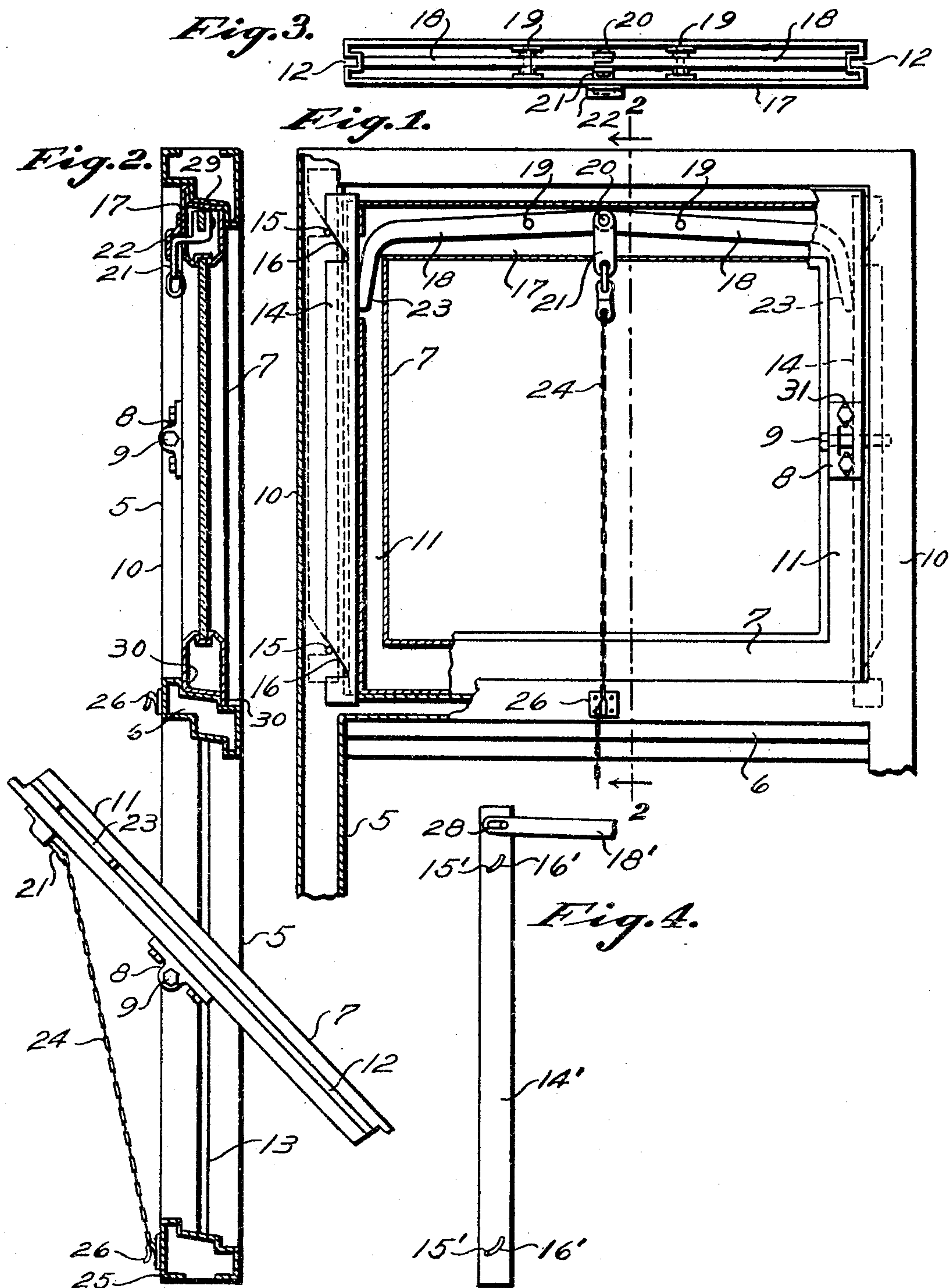


B. J. LESLIE.
WINDOW.

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Witnesses:

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UNITED STATES PATENT OFFICE.

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WINDOW.

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Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, BENJAMIN J. LESLIE, a citizen of the United States of America, and a resident of Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Windows, of which the following is a specification.

This invention relates to window frame and sash construction, and has particular reference to the metal construction which is used in fireproof structures.

The main objects of this invention are to provide in swinging windows improved means for locking the sash in its closed position and at the same time insuring a tight fit between the sash and frame, to provide in a window of this class an improved form of movable tongue seated in registering grooves in the adjacent edges of the frame and sash, and to provide means for shifting such tongue out of its locking position through a pull on the chain, whereby the sash is swung on its pivotal axis and secured in its open position. I accomplish these objects by the device shown in the accompanying drawings, in which—

Figure 1 is a front elevation, partly in section, of a window frame and sash constructed according to my invention. Fig. 2 is a vertical section of the same on the line 2 2 of Fig. 1. Fig. 3 is a top view of the top bar of the sash with the covering-plate removed. Fig. 4 is a side elevation of a modified form of locking-tongue.

In the construction shown in the drawings the frame 5 is substantially rectangular and is subdivided into two parts by a fixed horizontal cross-bar 6. A sash 7 is mounted in each of the parts of the frame. The frame and sashes are each constructed of sheet metal, the sashes being pivotally mounted to swing on horizontal axes in the frame. The hinges consist of members 8, mounted on opposite sides of the sash and pivotally connected to the adjacent side of the frame by bolts 9, which are tapped into suitable reinforcing-plates secured within the interior of the side bars 10 of the frame. Each of the side bars 11 of the sash has a longitudinal groove 12 formed in its outer edge, and the side bars of the frame 10 are provided with corresponding grooves 13, registering with the grooves 12

when the sash is in its closed position. An iron tongue 14 is seated in each of the grooves 13 and is movable both vertically along the grooves and transversely into and out of the registering grooves of the sash. The movement of the tongue 14 is guided by two pins 15, which extend transversely across the interior of the side bars 10 and engage the inclined surfaces 16, which form the upper edges of notches cut into the tongue and which serve as guides for directing the movement of the tongue. The weight of the tongue 14 urges the same downward, and the pins 15, coacting with the surfaces 16, cause the tongues to simultaneously move into engagement with the grooves 12 of the sash when said sash is in its closed position.

The upper bar 17 and the side bars 11 of the sash are hollow, as usual in this type of fireproof construction. A pair of levers 18 are pivotally mounted at 19 upon brackets in the interior of the top bar 17. These levers are connected at their inner ends by a bolt 20 with a link member 21, which extends outwardly through the housing 22 on the inside face of the top bar 17. The outer ends of the levers are bent downwardly to form arms 23, extending into the side bars 11 and bearing against the adjacent edge of the tongues 14. The pivotal axes 19 are so placed that the weight of the levers 18 causes the same to normally assume the position shown by full lines in Fig. 1.

The link members 21 have a chain 24 secured thereto and depending therefrom. The cross-bar 6 and the bottom bar 25 of the frame are each provided with a hook 26 for engaging links of the chain to secure the sash in an open position, as shown in Fig. 3.

The hinge members 8 are so placed that the sash normally tends to assume a closed position. The members 8 are fastened to the side bars of the sash by bolts extending through the vertically-disposed slots 31. These slots permit of a slight adjustment of the pivotal centers with respect to the sash to compensate for any inaccuracy of construction or for unequal racking of the sash and frame due to a slight settling of the walls of the building.

The modified form of tongue which is shown in Fig. 4 is adapted for being mounted

in the sash. In this case the movement of the tongue would be guided by pins 15' and slots 16' and the lever 18 would be pivotally connected directly to the upper end of the tongue 14', the end of the lever being slotted at 28 to permit of the necessary relative movement of said tongue and lever.

The top bar 17 of the sash is preferably made with removable top plate 29, secured in position somewhat as shown in Fig. 3 and adapted to be slid endwise off of the bar to permit of access to the mechanism within the top bar.

The operation of the device shown is as follows: When it is desired to open the window, the operator pulls down on the chain 24. This causes the arms 23 of the levers 18 to force the tongues 14 out of the grooves 12, and a continued pull on the chains causes the window-sash to swing forward. It may now be secured in any desired position by hooking the chain over the prong of the hook 26. As the tongues are forced laterally by the arms 23 the inclined surface 16, coacting with the pins 15, causes the tongues to rise and simultaneously shift laterally to a position parallel to their original position. This insures that both ends of the tongue pass out of the groove 12 at the same time. The tongue is retained in this retracted position through engagement with the side bars 11 of the sash until the sash has again assumed its closed position. When the tension on the chain is released, the weight of the levers withdraws the arms 23 from the grooves 12, the weight of the sash causes the same to close, and as soon as the sash has assumed its closed position the grooves 12 and 13 register with each other, and gravity then causes the tongues to slide downwardly and inwardly into their positions of engagement with the grooves 12. It will be thus seen that the tongues serve as a locking device for securing the sash in its closed position and at the same time serve the purpose of a weather-strip along the vertical edges of the sash. The top and bottom edges of the sash coact with stops 30 to form a tight closure.

In the modified form shown in Fig. 4 the movement of the tongue 14' is directly opposite to that of the tongue 14 and will be readily understood from the drawings without further description.

It will be seen that numerous details of the construction shown may be altered without departing from the spirit of my invention.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. In a device of the class described, the combination of a frame, a sash pivotally mounted in said frame, said sash having a longitudinal groove in one of its edges which is transverse to the pivotal axis, said frame having therein a groove registering with the

groove in said sash when the sash is in its closed position, a movable tongue seated in one of said grooves and adapted when shifted lengthwise of the groove to move into and out of engagement with the other groove, said tongue being normally urged into such engagement, means for shifting the tongue into its retracted position, and a chain or the like for swinging said sash on its hinges, said chain being connected with said means and adapted to cause the retraction of said tongue when the chain is pulled for opening the sash, substantially as described.

2. In a device of the class described, the combination of a frame, a sash pivotally mounted on a horizontal axis in said frame and having hollow top and side bars, each of said side bars and the adjacent parts of said frame having longitudinal grooves in their opposed edges adapted to register when the sash is in its closed position, a movable tongue seated in each of the grooves in said frame and normally urged into engagement with the corresponding grooves in said sash, and a pair of levers fulcrumed within the hollow bars of said sash and each adapted to force one of said tongues out of engagement with the sash to permit the sash to be turned on its pivotal axis, and mechanism connecting said levers to cause their simultaneous operation, substantially as described.

3. In a device of the class described, the combination of a frame, a sash pivotally mounted on a horizontal axis in said frame and having hollow top and side bars, each of said side bars and the adjacent parts of said frame having longitudinal grooves in their opposed edges adapted to register when the sash is in its closed position, a movable tongue seated in each of the grooves in said frame and normally urged into engagement with the corresponding grooves in said sash, and a pair of levers fulcrumed within the hollow bars of said sash and each adapted to force one of said tongues out of engagement with the sash to permit the sash to be turned on its pivotal axis, the inner ends of said levers being connected together, and a chain or the like secured to said inner ends and adapted when pulled to cause said levers to release the sash, substantially as described.

4. In a device of the class described, the combination of a frame, a sash pivotally mounted on a horizontal axis in said frame and having hollow top and side bars, each of said side bars and the adjacent parts of said frame having longitudinal grooves in their opposed edges adapted to register when the sash is in its closed position, a movable tongue seated in each of the grooves in said frame and normally urged into engagement with the corresponding grooves in said sash, and a pair of levers fulcrumed within the hollow bars of said sash and each adapted to

force one of said tongues out of engagement
with the sash to permit the sash to be turned
on its pivotal axis, said levers being nor-
mally urged out of engagement with said
5 tongues, and a chain or the like for control-
ling the pivotal position of said sash, said
chain being connected to each of said levers
and adapted when pulled to cause said le-

vers to release the sash from said tongues,
substantially as described.

Signed at Chicago this 27th day of Janu-
ary, 1905.

BENJAMIN J. LESLIE.

Witnesses:

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