J. B. CLERMONT.

OPERATING MEANS FOR SASHES HAVING SLIDING AND PIVOTAL MOVEMENTS.

APPLICATION FILED DEC. 4, 1914.

1,150,175.

Patented Aug. 17, 1915.

3 SHEETS—SHEET 1.

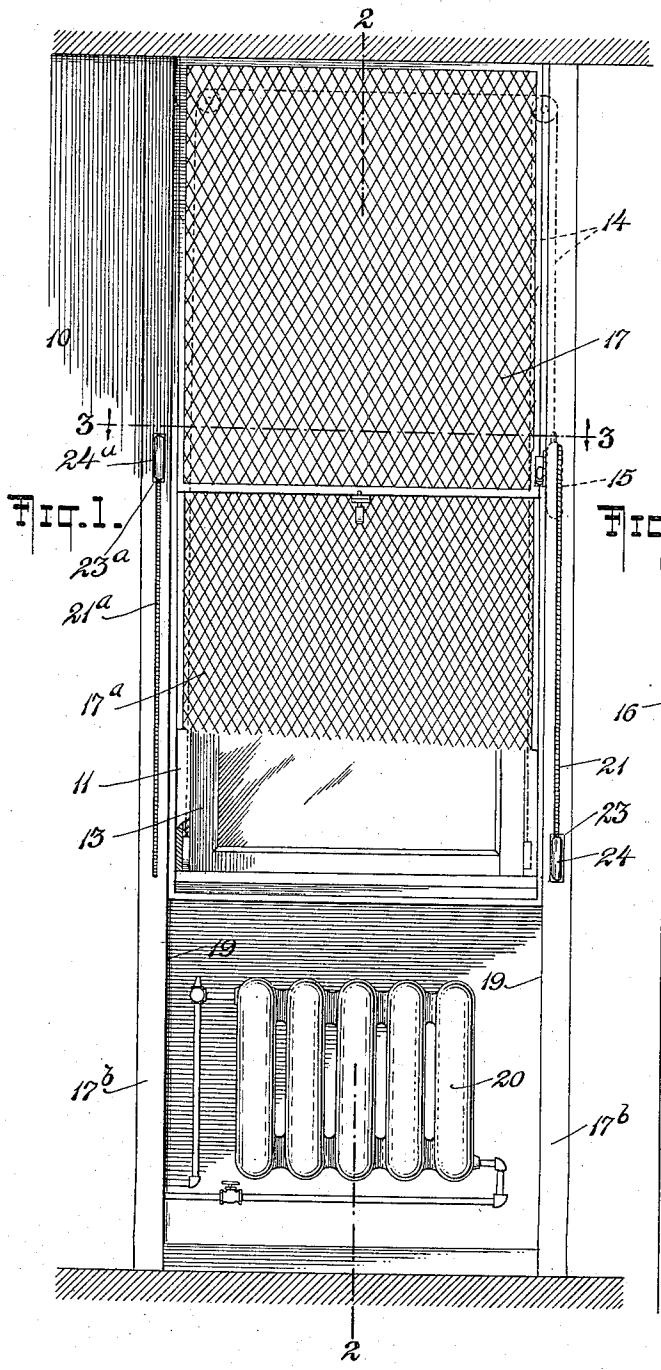


FIG. 1.

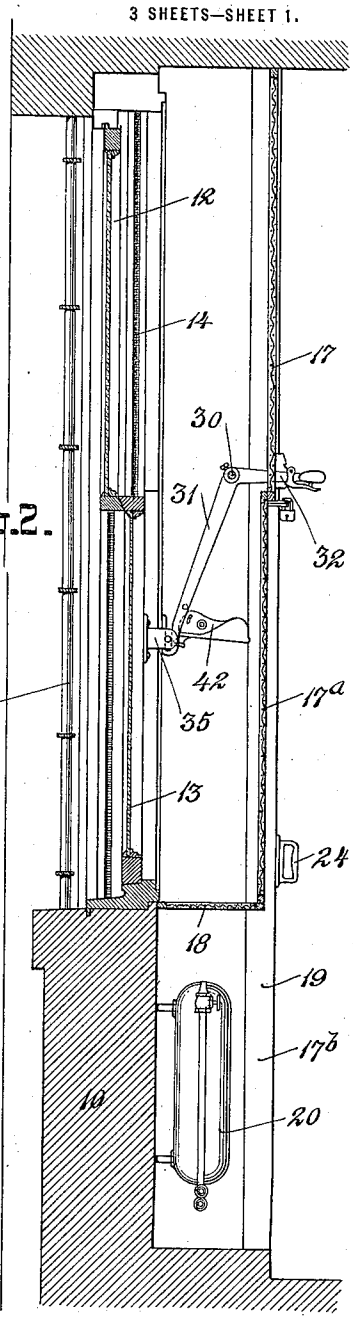


FIG. 2.

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3 SHEETS—SHEET 2.

Fig. 3.

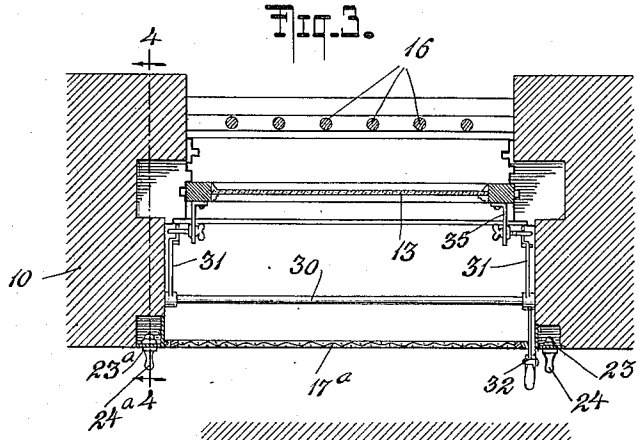


Fig. 4.

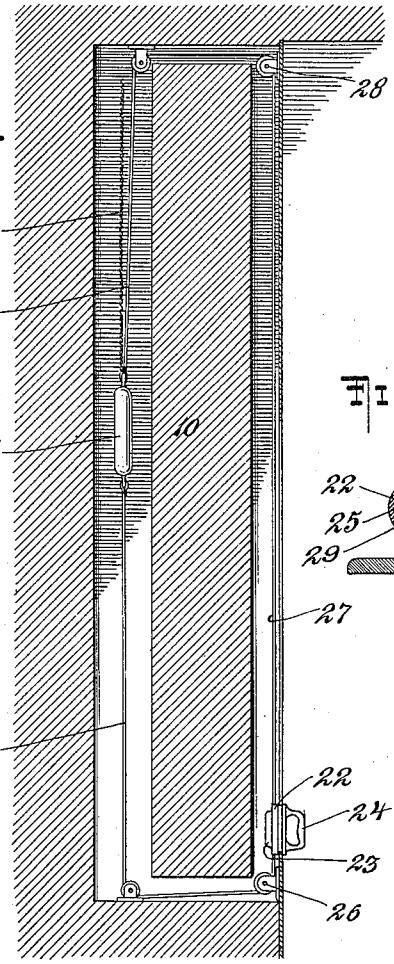


Fig. 5.

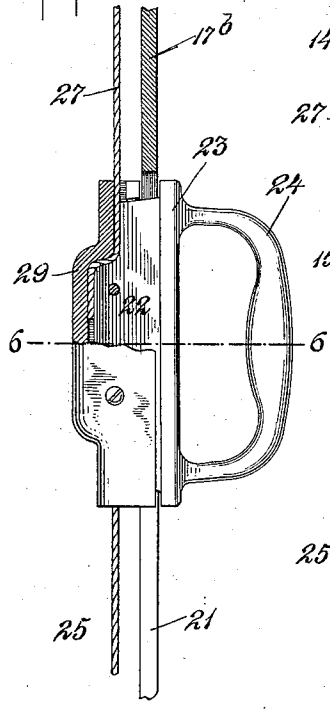
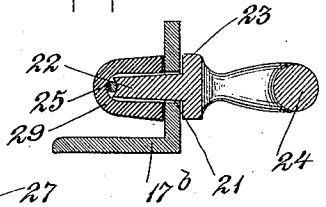


Fig. 6.



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3 SHEETS—SHEET 3.

Fig. 7.

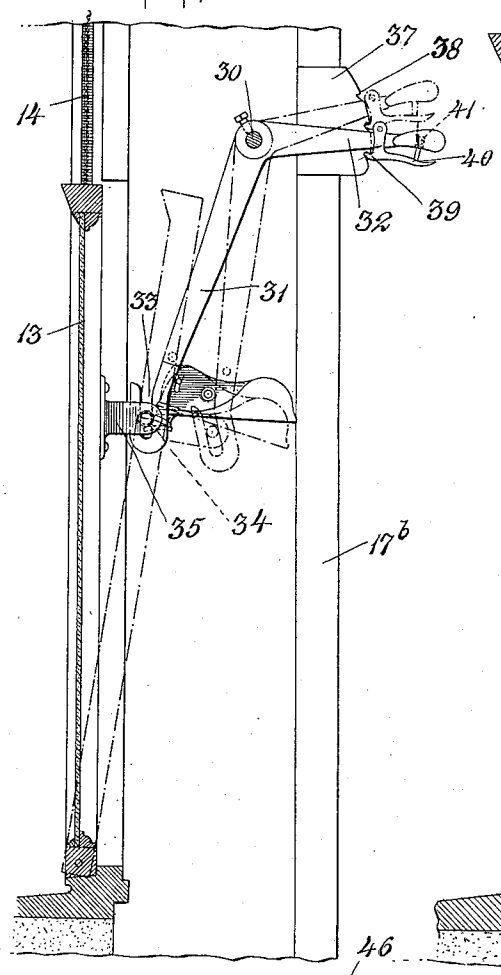
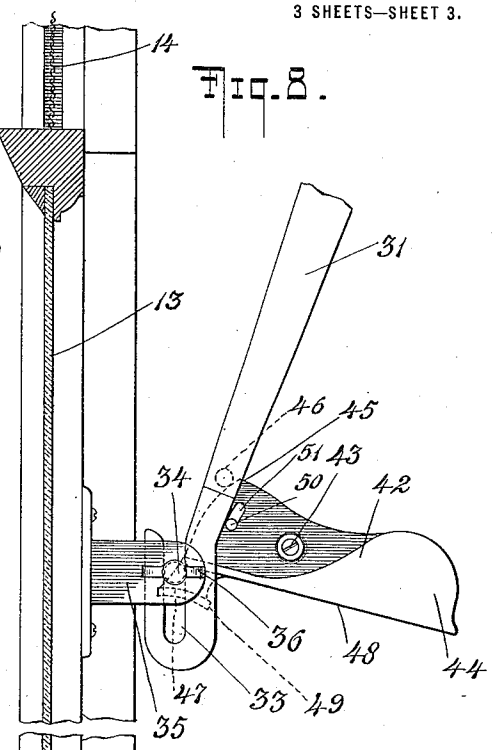


Fig. 8.



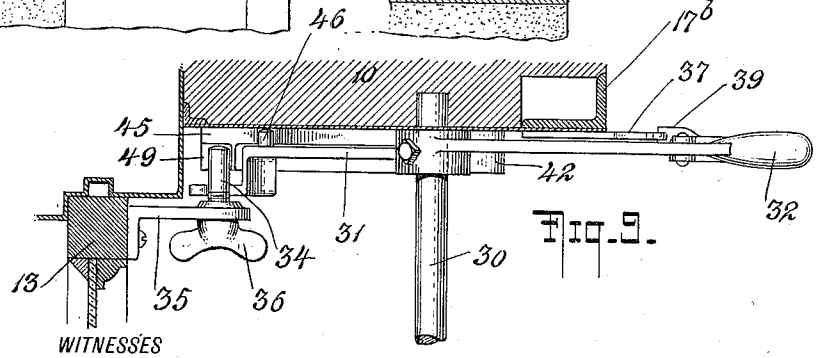


Fig. 9.

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UNITED STATES PATENT OFFICE.

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OPERATING MEANS FOR SASHES HAVING SLIDING AND PIVOTAL MOVEMENTS.

1,150,175. Specification of Letters Patent. Patented Aug. 17, 1915.

Application filed December 4, 1914. Serial No. 875,426.

To all whom it may concern:

Be it known that I, JOHN B. CLERMONT, a citizen of the United States, and resident of the borough and county of the Bronx, city and State of New York, have invented certain new and useful Improvements in Operating Means for Sashes Having Sliding and Pivotal Movements, of which the following is a specification.

My invention relates to windows and has for its object to provide a means for readily operating windows which by reason of their position are not easily accessible or conveniently operated or which, owing to their surroundings, are purposely protected or made inaccessible.

A further object of my improvement is to include a means whereby windows located as above set forth and which in addition to their vertical sliding movements have the sashes arranged so as to be capable of pivotal movements relatively to the window casing for ventilating and other purposes, may be readily manipulated in the desired manner without necessitating the removal of the obstructing or protecting means or the use of ladders and the like to bring the operator within reach of said sashes.

A still further object of my invention is to construct my improved mechanisms in such a manner that the same are proof against intentional or unintentional disarrangement through an unintended actuation thereof.

Other objects of my invention will appear from the description hereinafter and the features of novelty will be pointed out in the appended claims.

Reference is to be had to the accompanying drawings which illustrate an example of my improvement and in which—

Figure 1 is a front elevation of a window made inaccessible or protected by a screen; Fig. 2 is a longitudinal section thereof on the line 2—2 of Fig. 1; Fig. 3 is a horizontal section on the line 3—3 of Fig. 1; Fig. 4 is a vertical section on the line 4—4 of Fig. 3; Fig. 5 is a detail view partly in section of a sash operating means; Fig. 6 is a sectional view on the line 6—6 of Fig. 5; and Figs. 7, 8 and 9 are detail views of various parts of my improved construction.

For the sake of simplicity and description I have illustrated and will hereinafter describe my improvements in connection with a window, the lower sash of which at least is capable of a pivotal movement relatively to the window casing in addition to its vertical sliding movements it being understood that this is only an example and that said improvements, either entirely or in part, are capable of use in connection with windows of ordinary and other types.

In the drawings 10 represents the wall of a building having an opening in which a window casing 11 is located, said casing accommodating the upper sash 12 and lower sash 13 in the usual manner so that said sashes are capable of a vertical sliding movement therein.

In the illustrated arrangement sash cords, chains or the like 14 are connected at one end with each sash 12 and 13 and pass in pairs to opposite sides of the casing and have their opposite ends each connected with a single weight or with twin weights 15 whereby each sash is counterbalanced respectively by one or more sash weights located at one side of the casing and movable in suitable chambers therein and an arrangement commonly known as a double hung window is secured.

In the illustration the window is protected on the outside by means of guards or bars 16 and on the inside by means of a grating or screen 17 the latter being located at a distance from said window and extending from the ceiling to the floor of the room or terminating at the level of the window sill, the space between the lower end of the screen 17 and the window sill in the latter case being closed in any suitable manner as by means of a horizontal screen 18.

The vertical screen 17 may extend between vertical portions 19 of the building wall located adjacent to opposite vertical edges of the window if the construction permits this or the spaces between the vertical edges of said screen and said window may be closed by additional vertical transverse screens or the like. Similarly, if the screen 17 does not extend to the ceiling the space between the top thereof and the window may be covered in any desired manner as by means of another horizontal screen or the like. If the screen 17 terminates at the level of the window sill the space below the same may be utilized to accommodate a radiator or other heating device 20 which may either rest on the floor or be secured to the wall 10

as shown. With this arrangement the window is completely protected and ordinarily is inaccessible, it being understood that the lower portion 17ª or any other part of the screen 17 may be hinged or otherwise supported so as to be movable when access to the window by authorized persons is desired, said movable portion of the screen being normally locked against operation in any desired manner. In any case vertical angle irons 17ᵇ extend along the opposite edges of the screen 17 preferably from the ceiling to the floor and are provided in their front members respectively with vertical slots 21 and 21ª in which the webs 22 formed integrally with or secured to slides 23 and 23ª, respectively, are vertically movable, the slides 23 and 23ª being arranged to travel along the faces of the members 17ᵇ, and being preferably provided with operating handles 24 and 24ª respectively.

A chain, wire cable or cord 25 has its one end secured to the lower portion of the weight or weights 15 which counterbalance the lower sash 12 and passes over suitable pulleys 26 suitably located below the window, a similar cable 27 having its one end attached to the upper portion of the weight or weights 15 passing over suitable pulleys 28 suitably located above the said window. The opposite ends of the chains, wire cables or cords 25 and 27 are suitably secured to the web 22 of the slide 23 for instance by means of a clamping plate 29 so that an endless connection is formed in which the weight or weights 15 and the slide 23 is located. Similar chains, wire cables or cords 25 and 27 pass over similar pulleys 26 and 28 and have their opposite ends similarly connected respectively with the weight or weights 15 of the upper sash 13 and the web 22 of the slide 23ª.

When the window is fully closed, it will be seen that the slide 23ª is located at the upper end of the slot 21ª while the slide 23 is positioned at the lower end of the slot 21. If it is now desired to lower the upper sash 12 a downward pull is exerted on the handle 24ª to cause said slide 23ª to descend in the slot 21ª and thus exert a pull on the cable or cord 27 which pull will be communicated to the weight or weights 15 and thus lift the same. Owing to the fact that the upper sash 12 is in this manner relieved of the restraining influence of said weight or weights 15 the said sash 12 will descend by gravity until the actuation of the slide 23 is discontinued or the lower end of the slot 21 is reached. The chain, cord or wire cable 25 during this movement simply follows or is drawn along and in no way interferes with this operation as will be readily apparent. To again raise the upper sash 12 the slide 23 is lifted in the slot 21 through the medium of the handle 24 thus causing a pull to be exerted on the chain, cord or wire cable 25 which is transmitted to the weight or weights 15 and lowers the same and in consequence again raises the sash 12, the chain, wire cable or cord 25 meanwhile being simply drawn over its pulleys to permit this. If it is desired to raise the lower sash 13 the handle 24 is lifted to raise the slide 23 in the slot 21 and cause the chain, wire cable or cord 25ª to draw the weight or weights 15 downwardly and thus raise said lower sash 13, the handle 24 being drawn downward again to cause the chain, cord or wire cable 27 to return or raise the said weight or weights 15 and permit the sash 13 to descend. It will be seen that in none of the operations described above is it necessary to touch either sash, the manipulation of which as described is accomplished entirely by means of the handles 24 and 24ª.

It will further be seen that with my improved arrangement the movement of the respective handles is at all times coincidentally in the same direction in which it is intended to move the particular sash thus doing away with the necessity for any special thought being given to the operation of the mechanism when any particular actuation of a given sash is desired. In other words the operation is the same as if each sash were itself taken hold of in the usual way and operated, the raising and lowering of the lower sash 13 being accomplished by corresponding movements of the handle 24 while the lowering and raising of the upper sash 12 is effective by similar movements of the handle 24ª. Furthermore the location of the handles 24 and 24ª in the slots 21 and 21ª at all times clearly indicate the position occupied by either sash, that is, if the same is fully closed or fully open or if it occupies an intermediate position, so that said sashes are capable of being accurately manipulated in any desired manner. The above arrangements make it possible to locate the protecting screen or the like 17 at any desired distance away from the window and necessitates no removal of said protecting screen or any part thereof when an actuation of either or both sashes is desired, thus doing away with the possibility of leaving the window unintentionally unprotected.

Instead of utilizing my improved arrangement as described above the same may be used for actuating bulky windows or windows which are located beyond ordinary reach, and which are protected as described or unprotected, the slots, slides and handles being in this case located, for instance, at opposite sides of the window-casing or the adjacent wall as the case may be and the cooperating chains, wire cables or cords being correspondingly located.

It will be obvious that my improvements as so far described may be used in connection

with any type of window in which the sashes are vertically slidable. In addition to this I have found it advantageous under many conditions to employ my improvement in connection with windows which are made inaccessible for any reason and in which the sashes in addition to their vertical movements are capable of a pivotal movement relatively to the casing particularly for ventilating purposes. In the illustrations I have shown such a window in which the sash cords or chains 14, counterbalanced as described, have their one end pivotally connected preferably with the lower portions of the sashes 12 and 13 respectively. With this arrangement as carried out by way of example in the drawings the upper sash 12 is pivotally movable and reversible in the casing under certain conditions mainly for the purpose of cleaning and as this specific idea forms no part of the present invention it is not believed necessary to describe the same more fully herein. The lower sash 13 is, however, provided with any suitable type of automatic ventilating device for instance of the kind forming the subject matter of my co-pending application Serial No. 864,230 for limiting its swinging movement under normal conditions so that said sash 13 may be adjusted for instance for ventilating purposes when desired.

With windows protected or made inaccessible as described it would ordinarily be impossible to swing the sash as described without first disturbing the protecting means or first otherwise rendering the window accessible and thus liable to unauthorized interference. To avoid these contingencies and to provide for the ready manipulation of said sash 13, I have provided the means shown best by way of example in Figs. 7–8–9 it being understood that, in protected windows of the swinging type as herein shown, the usual movable stop beads or locking strips for normally locking the lower sash against a pivotal swinging movement are omitted. As illustrated my improved operating means comprises a rock shaft 30 supported in suitable journals between the window and the screen 17 and carrying depending arms or levers 31 one of which may be continued to form an operating handle 32 projecting in any desired manner exteriorly of the screen 17 within reach of a person in the room of which the window forms a part, it being understood that both arms 31 may be provided with operating handles or that the handle may be otherwise operatively connected with the shaft 30, if desired. In the example illustrated the said arms 31 at their lower ends are provided with upwardly open recesses 33 adapted to receive and accommodate pins 34 which are preferably removably secured as by screw-threading in brackets 35 secured to the lower sash 13 at intermediate points of its vertical side members and extending forwardly therefrom, said pins being preferably formed in the nature of thumb-screws with operating heads 36 to facilitate their attachment with and removal from said brackets. Instead of detachably connecting the pins 34 with the brackets 35 by screw-threads, other means such as for instance a bayonet fastening may be employed for this purpose.

In the normal position of the parts the recesses 33 are located in the vertical path traversed by the pins 34 as the sash 13 is raised and lowered and being upwardly open permit said sash to be thus actuated through the mechanism hereinbefore described without interference, it being understood that, when said sash 13 is in its lowered position, the pins 34 are positioned in said recesses 33 near the lower end thereof. It will of course be readily apparent that instead of providing the levers 31 with the upwardly open recesses and the brackets 35 with the coöperating pins 34, the said brackets 35 may be formed with downwardly open recesses and the coöperating pins 34 located on the levers 31 if this should be desired. In other words the arrangement of pins and slots as shown may be reversed relatively to the brackets and levers without in any way changing the operation of the parts. In this lowered position, the sash 13 owing to the absence of the usual stop beads or locking strips is at all times capable of being swung inwardly on its pivots, this inward movement being normally arrested by the automatic ventilating device above mentioned or by any other suitable arrangement adapted to maintain said sash in an inwardly inclined position for ventilating purposes. To actuate or swing the said sash as mentioned above the handle 32 is moved upwardly thus bringing about a rocking movement of the shaft 30 and causing both arms or levers 31 to swing in a direction away from said window. The actuation of the arms or levers 31 will exert a pressure in the same direction on the pins 34 and in consequence will swing said sash 13 on its pivots so that the said sash will incline inwardly at the termination of the said operation and its upper portion will be spaced from the lower edge of the upper sash to form a space through which air may enter into the room.

To return the sash to its normal position the handle 32 is moved downwardly to bring about a reverse operation of the parts, it being understood that the upper sash may be freely moved in a vertical path without interference during the above described swinging of the lower sash. Any suitable means may be provided for preventing the said lower sash from accidentally or unintentionally swinging on its pivots, a contingency which otherwise might be occasioned

by wind pressure or other causes owing to the absence of the customary locking strips. In the illustration this means is shown in the nature of a segment 37 rigidly secured in position adjacent to the handle 32 for instance on one of the angle irons 17[b] and provided along its free edge with teeth 38 adapted to coöperate with a pawl 39 carried by said handle 32. The pawl 39 is provided with an operating lever 40 and is maintained in operative position by means of a spring 41 it being understood that the teeth 38 and pawl 39 coöperate to prevent an upward movement of said handle 32, the teeth 38 and pawl 39 being shaped so as to permit the latter to readily ride or slide over said teeth during a downward movement of said handle. When the sash 13 is in its normal position in the sash 11 the pawl 39 is in locking engagement with a lower tooth 38 so that an actuation of the handle 32 in an upward direction is impossible and an unintentional inward swinging movement of the said sash is prevented because of the connection between the pins 34 and recesses 33. By engaging the said pawl 39 with any one of the other teeth 38 the said sash may be locked in any intermediate inwardly inclined position against a similar unintentional movement, it being apparent that this construction in some cases may permit the omission of the automatic ventilating device hereinbefore referred to. When it is desired to intentionally swing the sash 13 on its pivots the pawl 39 is first disengaged from the particular tooth 38 by exerting a pressure on the lever 40 against the tension of the spring 41 after which the handle 32 is free to be moved upwardly as described above. In the absence of any provision against the same it would be possible for a person to first raise the sash 13 in the casing 11 to remove the pins 34 from the recesses 33 and then swing the levers 31 away from the window through an actuation of the handle 32 thereby moving the recesses 33 out of the path of said pins 34 and thus completely disarrange the mechanism. To guard against such a contingency I have provided a dog 42 pivoted at 43 upon a stationary element of the construction in close proximity to the lower end of one of said levers or arms 31 and weighted at one end as indicated at 44, the end 45 of said dog being arranged to coöperate with a projection or pin 46 carried by a lever 31 as will hereinafter more fully appear. The said dog 42 is provided at the end 45 with a member 47 extending below the lower edge 48 and terminating in a horizontal flange 49 arranged to project alongside of one of the recesses 33 and into the path of one of the pins 34. The pivotal movement of said dog is preferably limited by any suitable means as for instance through the medium of a stationary pin 50 extending into a slot 51 formed in said dog at any desired point to secure the intended results.

With the parts in proper coöperative relation and the sash 13 in its lowered position the pin 34 will rest upon and depress said flange 49 so as to remove the end 45 of the dog 42 out of the path of the projection or pin 46. In this condition the levers or arms 31 are free to be swung away from the window to swing the sash 13 on its pivots, the projection 46 meanwhile riding along the upper edge of the said dog 42 and the pin 34 moving along the lower edge 48 thereof during this movement which is at no time sufficient to cause said projection 46 or pin 34 to move beyond the weighted end 44. During the opposite movement of said arms to return the sash 13 to normal position in the casing 11 the said projection 46 will move along the upper edge of dog 42 and will finally pass beyond the end 45 thereof, the pin 34 meanwhile traveling along the lower edge 48 and reaching the flange 49 before said projection 46 moves beyond the said end 45. The proper operative relation between the parts is thus absolutely maintained during these operations and a disarrangement thereof is impossible. This arrangement also prevents the lower end of the sash 13, after the latter has been swung inwardly on its pivots from being raised in the casing 11 to any marked extent or sufficiently to destroy the coöperative relation between the elements of the mechanism. If the sash 13, while in its normal position in the casing 11, is moved upwardly therein the pin 34 will be raised away from the flange 49 which is thus released and permits the weighted end 44 to swing the dog 42 on its pivot 43 within the limits of the pin and slot 50 and 51. This movement of the dog 42 is sufficient to bring the end 45 thereof into the path of the projection 46 which as a result is prevented from moving any appreciable distance and consequently prevents the arms 31 from being actuated by the handle to remove the recesses 33 from the paths traversed by the pins 34. Any attempt either intentional or otherwise, to disarrange the mechanism will thus fail and the parts will at all times be maintained in perfect coöperative relation one with the other.

It will, of course, be apparent that the dog 42 and its coöperating parts may be duplicated to obtain the described coöperation with both arms 31 instead of with only one if this should be desirable for any reason. If desired the parts described may be entirely inclosed in a protecting casing suitably constructed to permit the intended operations.

My improvements are particularly adapted for use in connection with windows of prisons, reformatories, insane asylums and

other institutions in which the inmates are intended to be confined and permits the use of any type of window, swinging or otherwise with perfect safety and without danger that the same will be misused or the operating mechanism disarranged or its utility destroyed. Access to the windows by authorized persons for cleaning or other purposes may be provided for in any desired way.

By connecting the weights 15 with the slides 23 and 23ª as described the latter with their operating handles 24 and 24ª may be located at any distance from the sashes and at the same time the raising and lowering of said sashes is accomplished with a minimum of effort and in a maximumly effective manner. In the case of pivotally mounted sashes when counterbalanced as described, the single or twin weights connected with both chains of each sash will afford an effective compensating means whereby, in reversing the sash for cleaning purposes, the normally lower edge of said sash will travel upwardly in the casing in an even and level manner no matter at what point of the sash the force necessary to bring about such a reversal is exerted. During such reversing operation the handles 24 and 24ª may further be utilized to retard the speed with which said lower edges travel upwardly in the casing thus making it absolutely certain that the reversing operation may be accomplished in safety and in a maximumly convenient manner. It will of course be evident that instead of providing the dog 42 with a weighted end 44, the same may be controlled in other ways as by means of a spring exerting a tension tending to move the end 45 at all times into the path of the projection or pin 46.

Various changes in the specific forms shown and described may be made within the scope of the claims without departing from the spirit of my invention.

I claim:—

1. In a window, the combination of a casing, a sash vertically slidable therein and pivotally movable relatively thereto, means arranged to pivotally move said sash and a connection between said means and said sash whereby the latter is free to slide in a vertical direction in said casing relatively to said means.

2. In a window, the combination of a casing, a sash vertically slidable therein and pivotally movable relatively thereto, a pivoted lever for pivotally moving said sash, a connection between said lever and said sash whereby the latter is free to slide in a vertical direction in said casing and an operating handle connected with said lever and located at a distance from said casing.

3. In a window, the combination of a casing, a sash vertically slidable therein and pivotally movable relatively thereto, a pivoted lever for pivotally moving said sash, a connection between said lever and said sash whereby the latter is free to slide in a vertical direction in said casing, an operating handle connected with said lever and located at a distance from said casing and releasable means for locking said handle against operation and said sash against unintentional pivotal movement.

4. In a window, the combination of a casing, a sash vertically slidable therein and pivotally movable relatively thereto, a pivoted lever for pivotally moving said sash, a connection between said lever and said sash whereby the latter is free to slide in a vertical direction in said casing, an operating handle connected with said lever, and a device for preventing an actuation of said lever when said sash is raised and not in operative connection therewith.

5. In a window, the combination of a casing, a sash vertically slidable therein and pivotally movable relatively thereto, a pivoted lever for pivotally moving said sash, a connection between said lever and said sash whereby the latter is free to slide in a vertical direction in said casing, an operating handle connected with said lever, a device for preventing an actuation of said lever when said sash is not in operative connection therewith and means for preventing access to said device.

6. In a window, the combination of a casing, a sash vertically slidable therein and pivotally movable relatively thereto, a pivoted lever for pivotally moving said sash, a connection between said lever and said sash whereby the latter is free to slide in a vertical direction in said casing, an operating handle connected with said lever and located at a distance from said casing, releasable means for locking said handle against operation and said sash against unintentional pivotal movement and a device for preventing an actuation of said lever when said sash is raised and not in operative connection therewith.

7. In a window the combination of a casing, a sash vertically slidable therein and pivotally movable relatively thereto, a bracket carried by said sash, a movable lever for pivotally moving said sash, said bracket and movable lever being provided with a recess having an open end, and a pin arranged to enter and move out of said recess whereby said sash is connected with and disconnected from said lever and means for actuating said lever.

8. In a window the combination of a casing, a sash vertically slidable therein and pivotally movable relatively thereto, a pivoted lever arranged to pivotally move said sash and provided with an upwardly open recess, a projection on said sash adapted to be moved into and out of said recess where-

by said sash is connected with and disconnected from said lever and means for actuating the latter.

9. In a window the combination of a casing, a sash vertically slidable therein and pivotally movable relatively thereto, a pivoted lever arranged to pivotally move said sash and provided with an upwardly open recess, a projection on said sash adapted to be moved into and out of said recess whereby said sash is connected with and disconnected from said lever, means for actuating the latter and a device controlled by said sash whereby an actuation of said lever is prevented when said projection is out of connection with said hook.

10. In a window the combination of a casing, a sash vertically slidable therein and pivotally movable relatively thereto, a pivoted lever arranged to pivotally move said sash and provided with an upwardly open recess, a projection on said sash adapted to be moved into and out of said recess whereby said sash is connected with and disconnected from said lever, means for actuating the latter, a pin on said lever, and a pivoted dog adapted to be moved into and out of the path of said pin as said projection is moved into and out of said recess whereby actuation of said lever is prevented when said projection is out of connection with said recess.

11. In a window the combination of a casing, a sash vertically slidable therein and pivotally movable relatively thereto, a pivoted lever arranged to pivotally move said sash and provided with an upwardly open recess, a projection on said sash adapted to be moved into and out of said recess whereby said sash is connected with and disconnected from said lever, means for actuating the latter, a pin on said lever, a pivoted dog arranged to project into the path of said pin to prevent an actuation of said lever, a flange on said dog extending into the path of said projection and adapted to be engaged thereby whereby said dog is moved out of the path of said pin when said projection is in said recess, and means for moving said dog into the path of said pin when said projection is moved out of engagement with said flange.

12. In a window the combination of a casing, a sash vertically slidable therein and pivotally movable relatively thereto, a pivoted lever arranged to pivotally move said sash and provided with an upwardly open recess, a projection on said sash adapted to be moved into and out of said recess whereby said sash is connected with and disconnected from said lever, means for actuating the latter, a pin on said lever, a pivoted dog arranged to project into the path of said pin to prevent an actuation of said lever, a flange on said dog extending into the path of said projection and adapted to be engaged thereby whereby said dog is moved out of the path of said pin when said projection is in said recess, a surface on said dog adapted to be engaged by said pin during an actuation of said lever whereby said dog is prevented from being moved out of coöperative relation therewith and means for moving said dog into the path of said pin when said projection is moved out of engagement with said flange.

13. In a window the combination of a casing, a sash vertically slidable therein and pivotally movable relatively thereto, a rock shaft, levers carried by said rock shaft and arranged to pivotally move said sash, said levers being provided with upwardly open recesses, projections on said sash movable into and out of said recesses as said sash is moved vertically whereby said sash is connected with and disconnected from said levers, a handle for rocking said shaft to actuate said levers, a toothed element rigidly supported adjacent to said handle, a releasable locking means carried by said handle and arranged to coöperate with said toothed element to lock said handle against operation, a pin on one of said levers, a pivoted dog controlled by one of said projections and adapted to be moved thereby out of the path of said pin when said projections are in operative connection with said recesses and means for moving said dog into the path of said pin when said projections are out of said recesses whereby an actuation of said levers is prevented when said sash is raised.

14. In a window, the combination of a casing, a sash vertically slidable therein and pivotally movable relatively thereto, a pivoted lever for pivotally moving said sash, a connection between said lever and said sash whereby the latter is free to slide in a vertical direction, an operating handle connected with said lever, a toothed element rigidly supported adjacent to said handle and a releasable locking means carried by said handle and arranged to coöperate with said toothed element to lock said handle against operation and to prevent an unintentional pivotal movement of said sash.

15. In a window, the combination of a casing, a sash vertically slidable therein and pivotally movable relatively thereto, a protecting means arranged at a distance from said casing for preventing access to said window, an operating means accessible from the exterior of said protecting means, a connection between said operating means and said sash whereby the latter may be raised and lowered, actuating means on the inside of said protecting means arranged to pivotally move said sash, a connection between said actuating means and said sash whereby the latter is free to be moved in a vertical

direction and an operating handle connected with said actuating means and extending exteriorly of said protecting means.

16. In a window, the combination of a casing, a sash vertically slidable therein and pivotally movable relatively thereto, a protecting means arranged at a distance from said casing for preventing access to said window, an operating means accessible from the exterior of said protecting means, a connection between said operating means and said sash whereby the latter may be raised and lowered, actuating means on the inside of said protecting means arranged to pivotally move said sash, a connection between said actuating means and said sash whereby the latter is free to be moved in a vertical direction, an operating handle connected with said actuating means and extending exteriorly of said protecting means and a device located inside of said protecting means and controlled by said sash whereby an operation of said actuating means is prevented when said sash is not in operative connection therewith.

17. In a window, the combination of a casing, a sash, sash chains or the like pivotally connected with said sash whereby the latter is pivotally movable relatively to said casing and reversible therein, a single counterbalancing means common to said chains and connected therewith whereby an uneven movement of said sash during reversal thereof will be automatically compensated by said counterbalancing means and slidable means connected with said counterbalancing means for raising and lowering said sash and arranged to control the speed of reversal of said sash.

In testimony whereof I have hereunto set my hand in the presence of two subscribing witnesses.

JOHN B. CLERMONT.

Witnesses:
JOHN A. KEHLENBECK.
FRED A. KLEIN.

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