June 9, 1936. B. A. McGUINNESS 2,043,835

WINDOW GRATING

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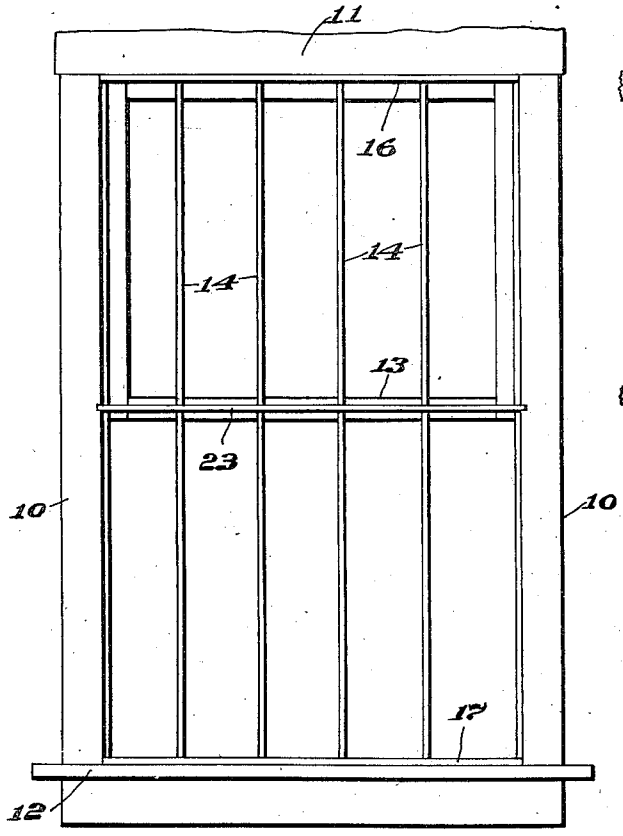


Fig. 1

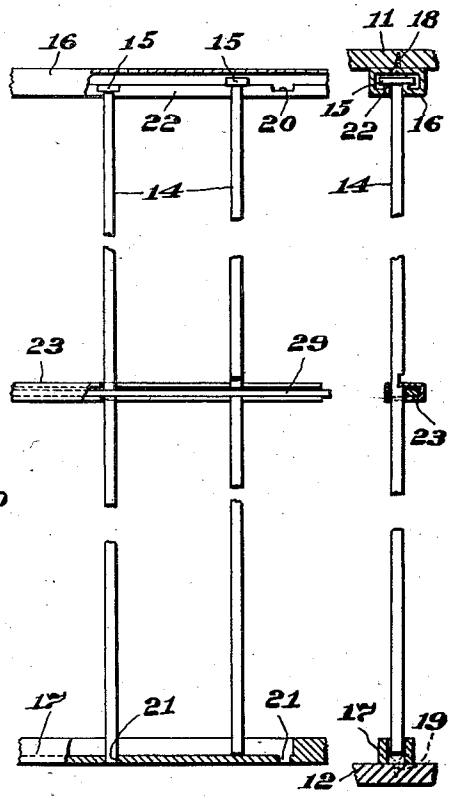


Fig. 2 Fig. 3

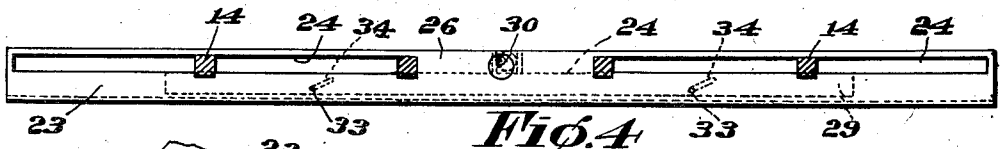


Fig. 4

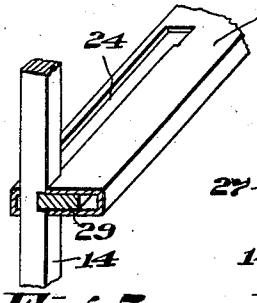


Fig. 5

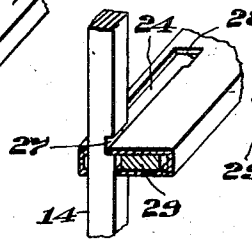


Fig. 6

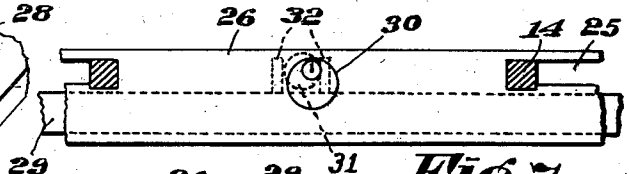


Fig. 7

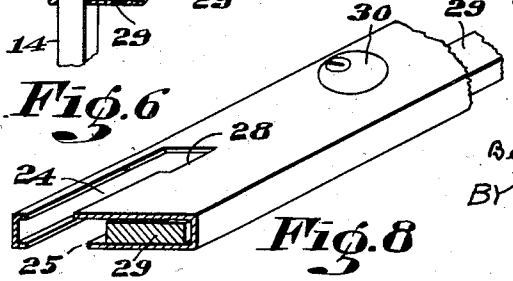


Fig. 8

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WINDOW GRATING

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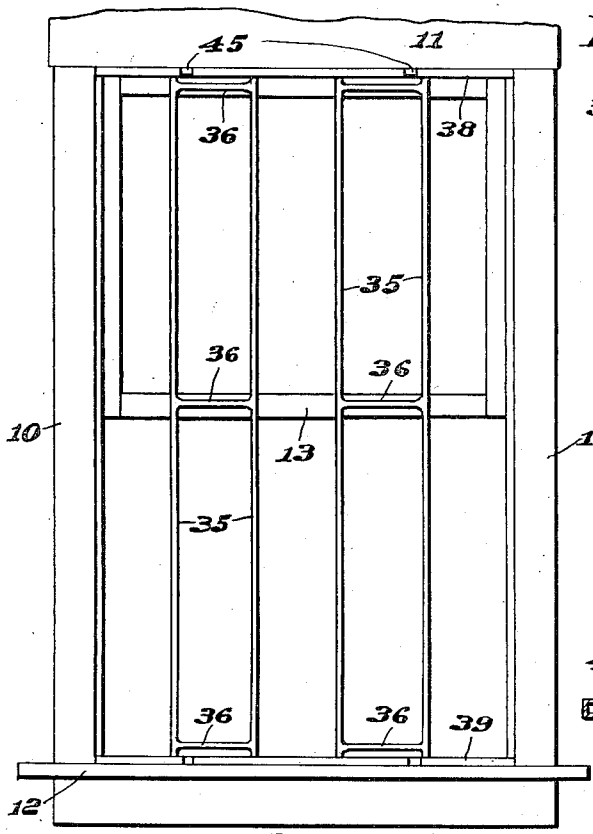


Fig. 9

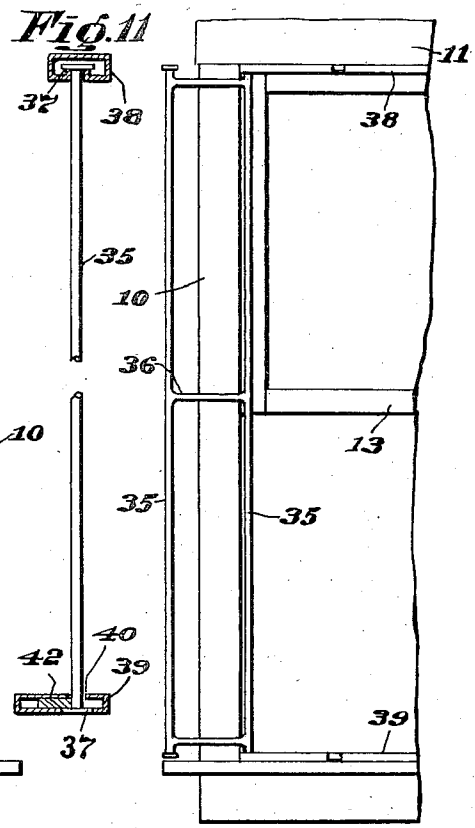


Fig. 10

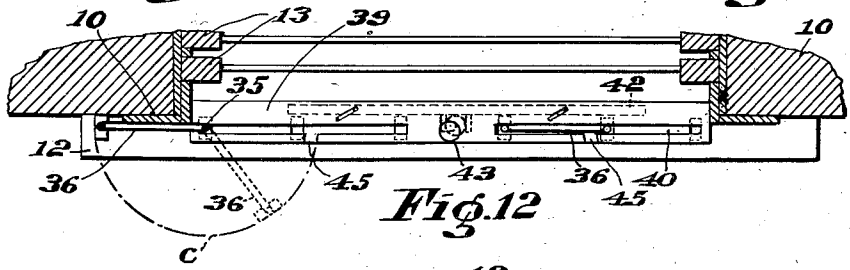


Fig. 12

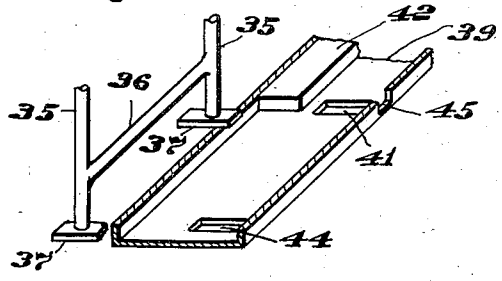


Fig. 13

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UNITED STATES PATENT OFFICE

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WINDOW GRATING

Bernard A. McGuinness, Belmont, Mass.

Application February 20, 1935, Serial No. 7,388

9 Claims. (Cl. 20—71)

This invention relates to window gratings for use upon houses and other buildings to prevent would-be intruders from entering through windows or other openings.

The present invention contemplates a construction whereby the grating bars may be securely locked in the window barring position when their protection is desired, and may be easily and quickly moved to an inactive position adjacent the sides of the window, where they are more or less out of sight, when their protection is not wished.

One feature of the present invention resides in a window grating having guide strips or rails secured to the window frame at the opposite ends of the grating bars to support them for sliding movement to and from the window barring position, and provided with a central guide rail secured across the window to slidably support these bars between their ends, and also having means associated with the central guide rail to lock the grating bars to this rail to prevent the bars from being forced out of place.

A more specific feature of the present invention resides in the construction for locking the grating bars to the central guide rail to thereby retain these bars in the window barring position so that they cannot be sprung apart or moved longitudinally or transversely of the guide rail.

A further feature resides in grating bars connected by braces to operate in sets and to brace one bar from another, and in means for supporting these sets for sliding movement and also for swinging movement about the axis of one bar so that the grating bars can be swung back away from the window adjacent the wall of the building.

Other features of the invention and novel combination of parts in addition to the above will be hereinafter described in connection with the accompanying drawings which illustrate good practical forms of the invention.

In the drawings:

Fig. 1 is a front elevation of a window having the grating bars of the present invention in the window barring position.

Fig. 2 is a longitudinal sectional view through the bar supporting rails of Fig. 1.

Fig. 3 is a transverse sectional view through the rails of Fig. 2.

Fig. 4 is a horizontal sectional view through the grating bars looking down on the central locking rail.

Fig. 5 is a perspective view showing a grating bar locked to the central rail.

Fig. 6 is a similar view showing the parts in the unlocked position.

Fig. 7 is a view similar to Fig. 4 showing the locking strip in the bar releasing position.

Fig. 8 is a perspective view of parts shown in Fig. 7.

Fig. 9 is a view similar to Fig. 1 disclosing a modified form of window grating with the bars in the window barring position.

Fig. 10 is a view similar to Fig. 9 showing the bars in the stored position at one side of the window.

Fig. 11 is a transverse sectional view through the bar supporting rails of Fig. 9.

Fig. 12 is a horizontal sectional view through the window of Fig. 9 looking down upon the lower locking rail; and

Fig. 13 is a perspective sectional view of the lower locking rail.

The window grating of the present invention may be used in windows of the ordinary home or other buildings and may be readily installed in new or old windows where their protection is desired. The window frame which may be of usual construction has the sides **10**, top portion **11** and bottom portion or sill **12**, and in the frame are slidably mounted the upper and lower sashes **13**, both sashes being shown raised in Figs. 1, 9, and 10.

In the embodiment of the invention shown in Figs. 1 to 8, inclusive, the grating bars **14** are independently movable, and when their protection is not desired may be moved to the sides of the window, that is, two to each side of the window, where they are stored one against the other, out of the way and out of view from the outside of the window. The grating bars **14** may or may not be provided with heads at both ends and are shown as provided with heads **15** at the upper ends but none at the lower ends.

These bars **14** are slidably supported at their opposite ends by guide strips or rails **16** and **17** which are channeled in the construction shown to slidably receive the upper heads **15** and lower ends of the bars **14**. The upper rail **16** is shown as secured by screws **18** to the top portion **11** of the window and the lower rail **17** is shown as secured by screws **19** to the window sill **12**. The upper rail **16** is provided with pockets **20** along its length adapted to receive the heads **15** to hold the upper ends of the bars **14** in the window barring position, and the lower rail **17** is provided with the pockets **21** adapted to receive the lower ends of the bars **14** and hold them in the window barring position.

The upper rail 16 is preferably given the housing construction best shown in Fig. 3 so as to embrace and slidably support the heads 15, and is formed with a central slot through which the bars 14 extend. The rail 16 is formed with upwardly extending ribs 22 at each side of said central slot upon which the heads 15 may rest, and the head-receiving pockets 20 are formed by cutting notches in these ribs as shown in Fig. 2. The lower rail 17 is shown as trough or U-shape in cross section and the pockets 21 are formed by providing holes in the bottom of this rail to receive the ends of the bars 14.

If the bars 14 are relatively long it is desirable to provide means for bracing or connecting them between their ends to prevent the bars from being sprung out of place, and this is accomplished in the construction shown in Figs. 1 to 8, inclusive, by providing the central rail 23 adapted to slidably receive the intermediate portion of the bars 14 and lock them in the window barring position. The central rail 23 in the construction shown has the form of a hollow tube rectangular in cross section and has formed in its upper and lower walls the longitudinally extending slots 24 and 25 extending from an unslotted central portion 26 of the rail to near the ends of the rail, and permit the bars 14 to slide along the slots 24 and 25 from a stored position adjacent the sides of the window to the window barring position.

The central rail 23 in the construction shown serves to lock the bars in spaced relation to each other and also to hold the ends of these bars in the pockets 20, 21. The grating bars 14 are shown as square in cross section and as provided at their central portion with a transverse locking slot 27 adapted to slide in the longitudinal upper slot 24 of the rail 23. The lower longitudinal slot 25, it should be noted, is wider than the slot 24 and slidably receives the unslotted portion of the bar 14. As a result of this construction the vertical sliding movement of the bars 14 is limited by the width of the slots 27.

In order to lock the bars against sliding movement along the slots 24 each of these slots is provided with the bar receiving notches 28 positioned to retain the bars in the window barring position. The arrangement is such that when a bar 14 is moved to its window barring position its ends will drop into the pockets 20, 21 and an intermediate unslotted portion of the bar will enter the notch 28 so that if the bars 14 are locked in this lowered position they will be held against movement both longitudinally and transversely. The means shown for locking each bar 14 in the lowered position just mentioned comprises a locking strip 29 slidably mounted in the hollow rail 23 for movement into and out of the notches 27. This strip may be shifted by a key controlled lock 30 to and from the bar locking position. The lock 30 is conveniently mounted in the solid portion 26 of the rail 23 and has a revolving barrel at the inner end of which is secured an eccentric 31 adapted to co-operate with projections 32 on the strip 29 to shift this strip. Pins 33 mounted in the rail 23 and extending through inclined slots 34 in the strip 29 guide this strip along a diagonal path as it is shifted by the lock to move the strip from its bar locking position of Figs. 4 and 5 to its bar releasing position of Figs. 6, 7, and 8.

It will be seen from the foregoing that when the grating bars 14 are moved to the position in which they are shown in Fig. 1 and lowered into the proper pockets 20 and 21, they may be locked in this position by operating the lock 30 to move the strip 29 to the bar locking position.

In the modification shown in Figs. 9 to 13, inclusive, the grating bars 35 are connected by the transverse braces 36 to operate in sets or pairs so that one bar braces another to prevent the bars from being sprung out of place. The bars 35 are provided with heads 37 at their ends adapted to slide in the channeled guide rails 38 and 39. The upper rail 38 may be constructed the same as the upper rail 16 above described and is provided along its length with pockets similar to the pockets 20 adapted to receive the heads 37 to hold the bars in the window barring position.

The lower guide rail 39 has the rectangular shape in cross section best shown in Fig. 11 and in its upper face is formed a longitudinally extending slot 40 in which the bars 35 slide. In the lower wall of the channeled rail 39 are formed the pockets 41 adapted to receive the heads 37 when the bars are moved to the window barring position and dropped in the pockets of the upper and lower rails. The lower rail is shown as having a locking strip 42 and key controlled lock 43 mounted in a central unslotted portion of the rail 39, similar to the strip 29 and lock 30 above described. The arrangement is such that the lock 43 may be operated to move the strip 42 from its inactive position in which it is shown in Figs. 12 and 13 to its locking position of Fig. 11. In Fig. 11 it will be seen that the head 37 lies within the pocket 41 and the strip 42 overlies a portion of the head to lock the bar heads in the pockets in the upper and lower guide rails to secure the bars in the window barring position.

Since the bars 35 are connected to operate in sets or pairs they can not be stored one against the other at the sides of the window as in the construction of Fig. 1. Fig. 12 therefore shows a construction whereby the rigidly connected bars after being moved to the sides of the window may be swung about the axis of one bar outwardly away from the window sashes to a stored position adjacent the inner wall of the room as will be apparent from this view, and may be retained in the stored position shown in full lines at the left hand side of the window of Fig. 12 by lowering the bars so that a head 37 enters the end pocket 44 to thereby hold the set of connected bars 35 in a stored position adjacent the inner wall of the room where it will be out of sight from outside the window.

To permit the above mentioned swing movement of the bars through the arc c, slots 45 are cut in the upper and lower rails to clear the bar heads so that they may be moved into and out of the slide-way of the rails 38 and 39.

I claim:

1. In combination with a window, a grating therefor formed of grating bars, guide strips secured to the window frame at the opposite ends of the bars and adapted to support the bars for sliding movement from the window barring position to an inactive position adjacent the sides of the window, a slotted guide rail secured across an intermediate portion of the window to form a central slide-way for said bars and provided with an unslotted central portion, a locking strip movably mounted upon said slotted rail and adapted to cooperate therewith to lock the bars in spaced relation to each other in the window barring position, and a lock mounted in said unslotted portion of said slotted guide rail to secure the locking strip in the bar locking position.

2. In combination with a window, a grating

therefor formed of grating bars, guide strips secured to the window frame at the opposite ends of said bars and adapted to support the bars for sliding movement from the window barring position to an inactive position adjacent the sides of the window, each grating bar having an intermediate notched portion, a slotted guide rail secured across an intermediate portion of the window and adapted to support the notched portion of said bars for movement lengthwise of said rail, and a locking strip supported by said guide rail for movement into and out of locking engagement with the notches of said bars to lock the bars in the window barring position in spaced relation to each other.

3. In combination with a window, a grating therefor formed of grating bars, guide strips secured to the window frame at the opposite ends of the bars and adapted to support the bars for sliding movement from the window barring position to an inactive position adjacent the sides of the window, each grating bar having a notched central portion, a guide rail secured across an intermediate portion of the window to slidably support the notched portion of the grating bars and this guide rail being provided with notches along its length to co-operate with the notched portion of said bars, and a locking strip supported by said rail for movement into and out of engagement with said bars and adapted to hold the notched portions of said rail and bars interengaged to lock the bars against movement in any direction.

4. In combination with a window, a grating therefor formed of grating bars, guide rails secured to the window frame to support the bars for sliding movement from the window barring position to an inactive posiltion adjacent the sides of the window, one of said rails having the form of a hollow channel formed with an unslotted central portion and with slots extending from said unslotted central portion to adjacent the ends of this rail to form slide-ways for slidably receiving the grating bars, a locking strip mounted upon said channeled rail for movement into and out of locking engagement with said bars, and a key controlled lock mounted in said unslotted central portion of said rail and operable to lock the locking strip in its bar locking position.

5. In combination with a window, a grating therefor formed of grating bars, guide rails secured to the window frame at the opposite ends of the bars and adapted to support the bars for sliding movement from the window barring position to an inactive position adjacent the sides of the window, means for connecting the central portions of the bars to brace one from the other to prevent spreading, each of said rails having bar receiving pockets into which the bars drop when moved to the window barring position, and means engageable with said bars to hold the ends of these bars in said pockets to thereby lock the bars in the window barring position.

6. In combination with a window, a grating therefor formed of grating bars, guide rails secured to the window frame at the opposite ends of the bars and adapted to support the bars for sliding movement from the window barring position to an inactive position adjacent the sides of the window, means for rigidly connecting the bars to brace one from another and cause them to operate in sets, each of said rails having bar receiving pockets into which the bars drop when moved to the window barring position, and means engageable with said bars to hold the ends of these bars in said pockets to thereby lock the bars in the window barring position.

7. In combination with a window, a grating therefor formed of grating bars, guide rails secured to the window frame at the opposite ends of the bars and adapted to support the bars for sliding movement from the window barring position to an inactive position adjacent the sides of the window, means for rigidly connecting the adjacent bars so that they move together and one braces the other, means co-operating with said rails to lock the bars to the rails in the window barring position, and means whereby the rails co-operate with one bar of a set of rigidly connected bars to support the set for swinging movement about said bar to a position alongside the wall adjacent the window.

8. In combination with a window, a grating therefor formed of grating bars, guide rails secured to the window frame at the opposite ends of the bars and adapted to support the bars for sliding movement from the window barring position to an inactive position adjacent the sides of the window, means for rigidly connecting the adjacent bars so that they move together and one braces the other, heads upon said bars, each of said rails having bar receiving pockets into which the heads drop when the bars are moved to the window barring position, means for locking the heads in said pockets to secure the bars in the window barring position, and means whereby the rails co-operate with one bar of a set of rigidly connected bars to support the set for swinging movement about said bar to a position alongside the wall adjacent the window and into a position in which a head of this bar locks the set back against the wall.

9. In combination with a window, a grating therefor formed of grating bars, guide rails secured to the window frame at the opposite ends of the bars and adapted to support the bars for sliding movement from the window barring position to an inactive position adjacent the sides of the window, means for rigidly connecting the adjacent bars so that they move together and one braces the other, means adapted to operate in conjunction with said rails to lock the bars in the window barring position, and means whereby the rails co-operate with one bar of a set of rigidly connected bars to support the set for swinging movement about said bar to a position along side the wall adjacent the window.

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