May 17, 1932. A. KAUFMAN 1,858,671

WINDOW GUARD

Filed Jan. 26, 1931

Fig. 3.

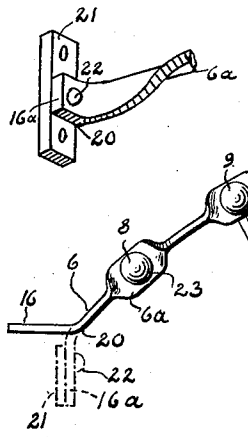
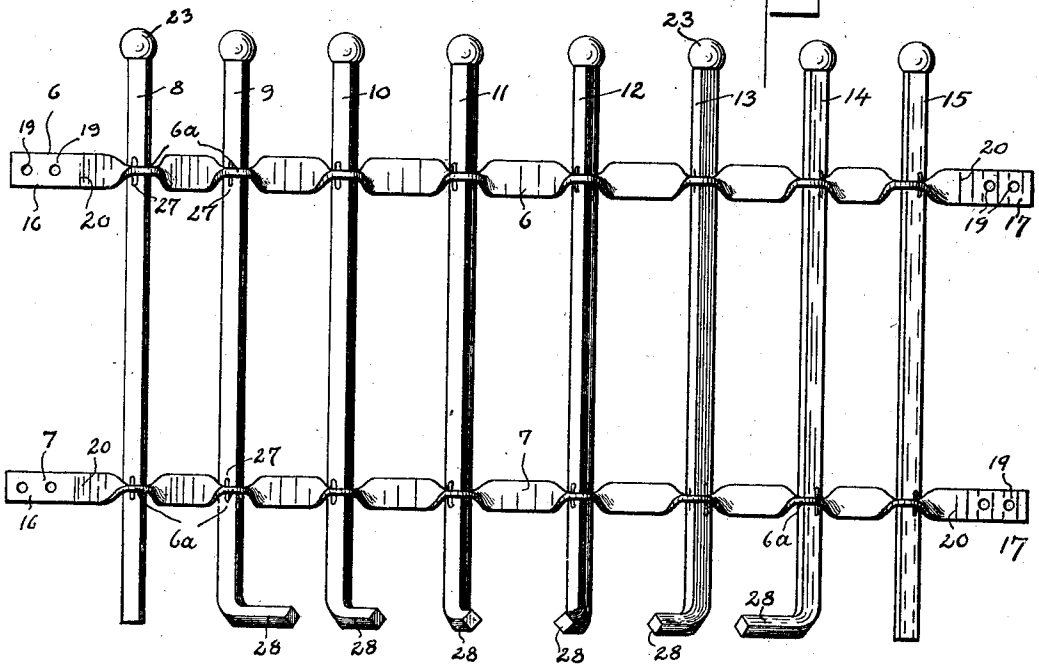


Fig. 1.

Fig. 2.



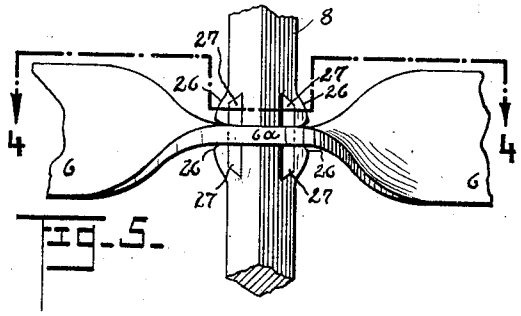


Fig. 5.

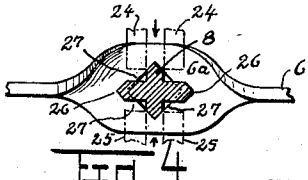


Fig. 4.

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Patented May 17, 1932 1,858,671

UNITED STATES PATENT OFFICE

ABRAHAM KAUFMAN, OF BRONX, NEW YORK

WINDOW GUARD

Application filed January 26, 1931. Serial No. 511,125.

My improved window guard concerns a grille, fence, mesh, screen, lattice or grating which can readily be mounted in a window, door or passage for purposes of safeguard, protection or decoration; it may also be used as a gate or adapted for a rail.

One object of my invention is to provide a grille which may be mounted in a window or doorway and which may be arcuately bent for the purpose of fitting from one side to the other of said window or doorway and which, on the other hand, when bent in that manner extends out from the window or doorway so as to provide a central clearance for objects placed into the window or extending therefrom and so that also a more pleasing and decorative effect is attained.

A further object of my invention is to provide on a vertically rigid grille, transverse members which permit a transverse flexing of the grille, said transverse members being adapted at the same time to afford a strong, natural support for vertical bars which form part of the grille.

Another object of my invention is to provide in my grille, flat transverse members through which extend the vertical bars of the grille, the said transverse members being twisted between said bars into a vertical plane so as to make the grille flexible.

A further object of my invention is to provide novel, simple means, for securing the vertical bars of a grille in the transverse members thereof, through which they extend.

Another object of my invention is to provide a window guard which is adapted to be mounted upon the outside of a window or in a window, upon the sides thereof, as convenience may require.

Another object of my invention is to provide in combination with a window guard in the shape of an arcuate grille, means which close said grille downwardly and which afford a firm rest of the grille upon the ledge of a window or a doorway.

Another object of my invention is to arrange in a grille serving as a window guard, vertical bars in such a manner that their cross sectional strength is most effectively utilized to protect the window outwardly and downwardly.

Other objects of my invention concern the combination of pleasant appearance and of strong, durable construction with economy of manufacture and will appear from a perusal of the following description of my improvements and of the accompanying drawings, in which

Fig. 1 shows a top view, and Fig. 2 shows a side view, of an example of the improvements of my invention.

Fig. 3 shows, in a perspective view, a modification of the ends of the transverse members of my grille, as used for fastening the grille in a window upon the sides of the window frame.

Figs. 4 and 5 illustrate, in enlarged sectional, sectioned top and side views, a method employed for fastening the vertical bars upon the transverse members at the points where said bars extend through said members.

Similar numerals refer to similar parts throughout the various views.

Through openings in the regularly spaced horizontally disposed parts 6*a* of the transverse members 6 and 7 of the grille, extend the longitudinal bars 8, 9, 10, 11, 12, 13, 14 and 15. Holes in the transverse members substantially fit the profile of said bars and the transverse members are twisted substantially into the plane of said longitudinal bars between said bars. The ends 16 and 17 of said members are also twisted into said plane and are provided with holes 19 through which screws, nails or other fastening means may be extended for the purpose of fastening said ends upon the outside of a window frame. The ends 16 and 17 of the transverse members extend substantially in alignment with each other from a kink 20 in said members, the bend at the said kink being greater or smaller according to whether the grille is more or less arcuately disposed. In practice, a few grilles of different widths are provided for by the manufacturer and they may be bent to extend more or less arcuately in order to fit between the sides of windows which have a width intermediary to such standard sizes of grilles.

Instead of being bent into alignment with each other at the kinks 20, the ends 16 and 17 of the transverse members may be bent the opposite way at said kinks as indicated at 16*a* in Fig. 1, and a flat piece 21 is assembled in T-shape with said end by rivet 22. The upper and lower end of the piece 21 are provided with holes through which screws may be extended for the purpose of fastening said flat pieces upon the sides of a window which face each other outside of the window sash.

The upper ends of bars 8, 9, 10, 11, 12, 13, 14 and 15 extend above the upper cross member 6 and are provided with end pieces 23 at their upper ends. The longitudinal bars are arranged on edge, extending diagonally, in respect to the transverse members 6 and 7. Thus they afford the greatest strength in a direction outward from a window, in which direction they are called upon to withstand the greatest pressure.

The arrangement of the longitudinal bars in this manner also facilitates their fastening in the correspondingly shaped holes extending through the horizontal parts 6*a* of the transverse members 6 and 7. The method of this fastening is illustrated in Figs. 4 and 5 by means of one of the longitudinal bars, 8, and one of the transverse members 6. Near opposite corners the bar is pinched above and below the level of the transverse member, after it has been extended therethrough, by means of the pairs of jaws 24 and 25 of a die. The jaws 24 and 25 are moved towards each other in the direction of the arrow heads shown therebetween in Fig. 4, and force the material 26 on opposite corners of the bar laterally away from the bar, at the same time producing a depression 27 in said bars. The material 26, which has been pressed laterally away from the bar extends now over the parts 6*a* of the transverse members adjoining opposite corners of the holes extending through said members, and the longitudinal bars are thereby longitudinally retained in said transverse members.

It is understood that the longitudinal bars may assume various structural cross-sectional shapes; they may have a polygonal, rectangular, round or oblong profile, or may be twisted in any manner most suited for a particular case of application, or in conformity with the style or design of a window or building.

The lower ends 28 of the bars 9, 10, 11, 12, 13 and 14 are bent to extend in a horizontal direction, substantially in the direction of a diagonal of said bars and at right angles to the transverse members. My grille is mounted in the window at such heights, that the bent ends 28 of the longitudinal bars rest upon the ledge of the window, said ledge thereby offering a support in a downward direction for the grille and the said ends 28 downwardly closing the grille to the extent to which its arcuate bars extend out from the window. The lower ends of the last two bars 8 and 15 are straight, because said bars normally will not be disposed outside of the window, beyond the window ledge.

While I have shown and described my invention with some degree of particularity, it will be realized that other modifications and changes may be resorted to under special conditions. I therefore do not wish to be limited and restricted to the exact details shown and described, but reserve the right to make such changes and modifications as may fairly fall within the scope of the subject matter now being claimed.

1. A grille of the kind described, comprising a plurality of regularly spaced substantially square longitudinal bars and substantially flat transverse members connecting said bars and bendable between said bars, so that said grille may be bent to extend in an arc.

2. A grille of the kind described, comprising substantially rigid longitudinal bars and substantially flat transverse members, through holes in which said bars extend and which are bendable between said bars, so that said grille may be bent to extend in an arc.

3. A grille of the kind described, comprising a plurality of regularly spaced substantially square longitudinal bars and substantially flat transverse members connecting said bars and disposed substantially parallel to the plane of said grille at a point between said bars, so that said grille may be bent to extend in an arc.

4. A grille of the kind described, comprising substantially rigid longitudinal bars and substantially flat transverse members, through holes in which said bars extend and which are disposed substantially parallel to the plane of said grille at a point between said bars, so that said grille may be bent to extend in an arc.

5. A grille of the kind described, comprising substantially rigid longitudinal bars and substantially flat transverse members connecting and supporting said bars and twisted to extend at right angles to the plane of said grille where they support said bars and to be disposed substantially parallel to the plane of said grille at a point between said bars, so that said grille may be bent to extend in an arc.

6. A grille of the kind described, comprising substantially rigid longitudinal bars and substantially flat transverse members, through holes in which said bars extend and which are twisted to extend at right angles to the plane of said grille where said bars extend therethrough and to be disposed substantially parallel to the plane of said grille at a point between said bars, so that said grille may be bent to extend in an arc.

7. A grille of the kind described, compris-

ing substantially rigid longitudinal bars with a square cross-section and substantially flat transverse members, through holes in which said bars extend and which are bendable between said bars, so that said grille may be bent to extend in an arc.

8. A grille of the kind described, comprising substantially rigid longitudinal bars with a square cross-section and substantially flat transverse members, through holes in which said bars extend and which are bendable between said bars, so that said grille may be bent to extend in an arc, one of the diagonals of said bars being disposed in the plane of the grille where said bars extend through said bars.

9. A grille of the kind described, comprising substantially rigid longitudinal bars and substantially flat transverse members, through correspondingly shaped holes in which said bars extend and which are bendable between said bars, so that said grille may be bent to extend in an arc, the profile of said bars being distorted where they extend through said members by pressure laterally applied thereto, so that said bars are fixedly retained in said members by the parts thereof extending over parts of said members confronting said holes.

10. A grille of the kind described, comprising substantially rigid longitudinal bars and substantially flat transverse members, through correspondingly shaped holes in which said bars extend and which are bendable between said bars, so that said grille may be bent to extend in an arc, the profile of said bars being distorted where they extend through said members by pressure laterally applied thereto above and below the point where they extend through said members, so that said bars are fixedly retained in said members by the parts thereof extending over parts of said members confronting said holes.

11. A grille of the kind described, comprising substantially rigid longitudinal bars with a square cross-section and substantially flat transverse members, through correspondingly shaped holes in which said bars extend and which are bendable between said bars, so that said grille may be bent to extend in an arc, the profile of said bars being diagonally distorted where they extend through said members, so that said bars are fixedly retained in said members by the parts thereof extending over parts of said members confronting said holes.

12. In a window guard, a grille comprising longitudinal bars and substantially flat transverse members connecting said bars and extending substantially in the plane of said grille at points intermediary to said bars so that said grille can be bent, means laterally extending from said grille for fastening the same upon the sides of a window, and extensions at the lower ends of said bars substantially rectangularly disposed to the plane of said grille and adapted supportingly to rest upon the window ledge.

13. In a window guard, a grille comprising longitudinal bars and substantially flat transverse members connecting said bars and extending substantially in the plane of said grille at points intermediary to said bars so that said grille can be bent, means laterally extending from said grille for fastening the same upon the sides of a window, said grille extending convexly from said window, and extensions protruding from the lower ends of said bars on the concave side of said grille, adapted to rest upon the window ledge and providing a downward closure on said guard.

14. In a window guard, a grille comprising longitudinal bars and substantially flat transverse members connecting said bars and extending substantially in the plane of said grille at points intermediary to said bars so that said grille can be bent, and means laterally extending from said grille for fastening the same upon the sides of a window, said grille extending convexly from said window, said bars being bent near their lower ends to extend radially from the concave side of said grille.

15. A window guard comprising bars regularly spacedly extending in the manner of longitudinal tangents and corresponding radii on the surface and base of a cylindrical segment and transverse members bendably connecting said bars along their longitudinal extent.

In testimony whereof, I have signed my name to this specification this 8th day of January, 1931.

ABRAHAM KAUFMAN.