Mar. 6, 1923. 1,447,189

L. SIMON

WINDOW SCREEN

Filed Aug. 4, 1917 2 sheets-sheet 1

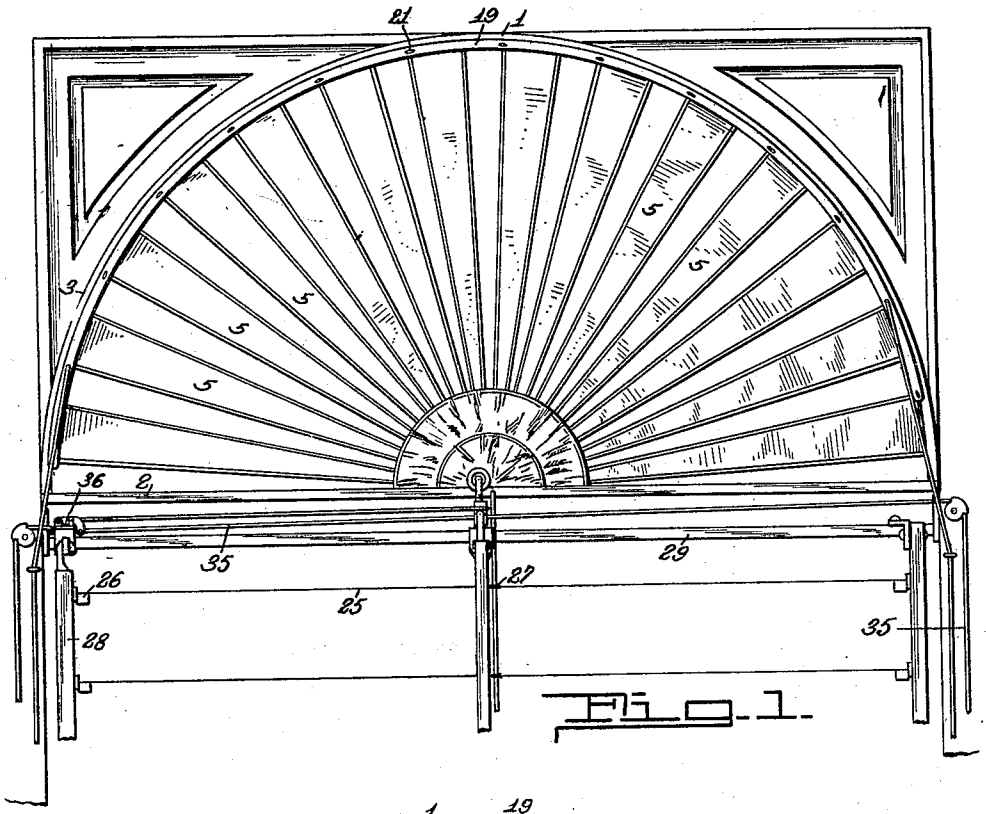


Fig. 1.

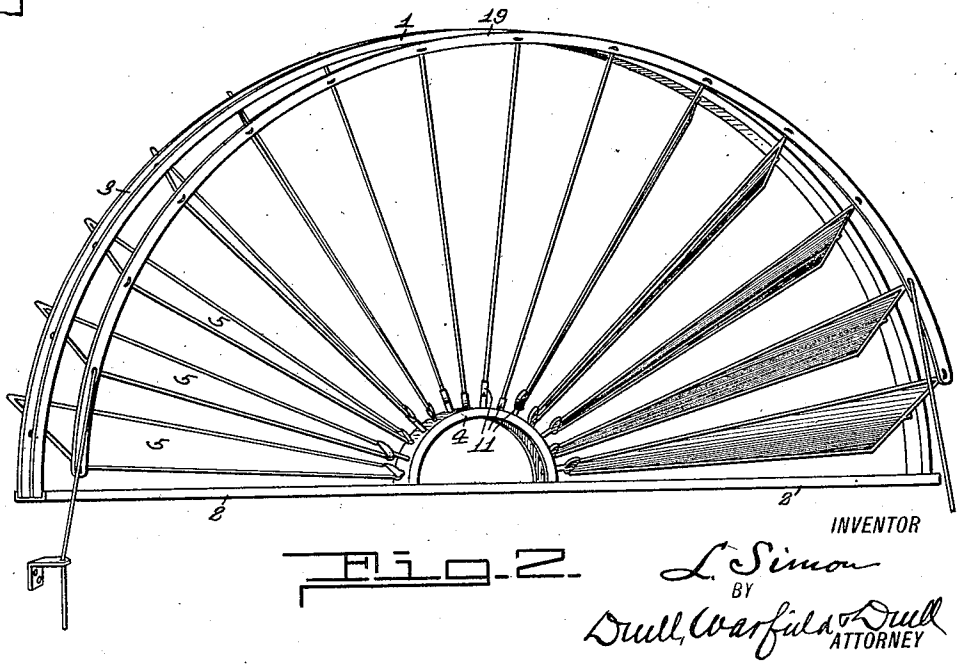


Fig. 2.

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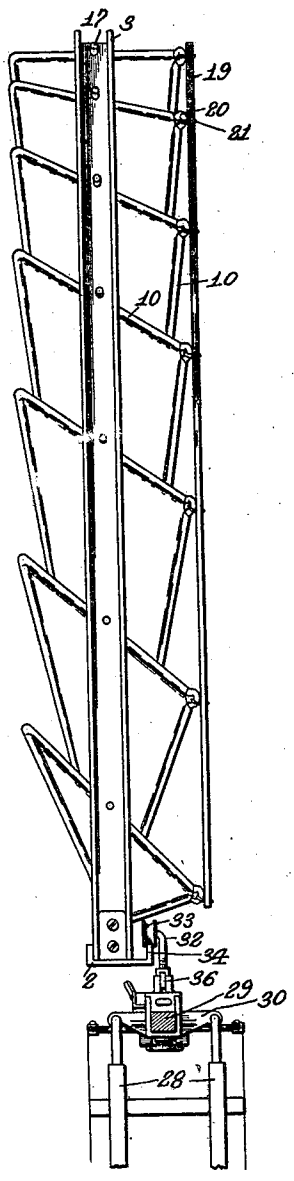


Fig. 3.

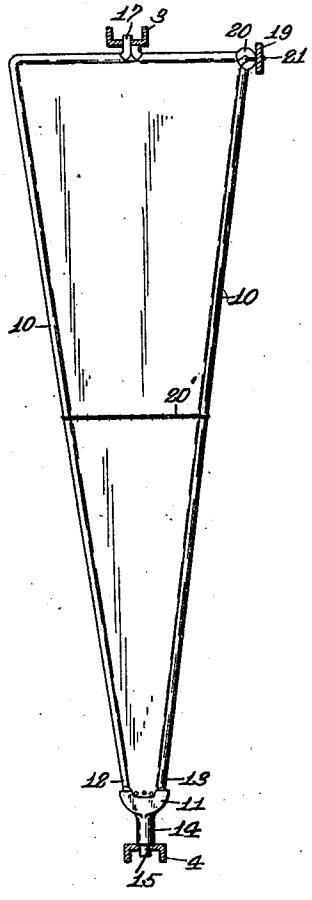


Fig. 4.

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Patented Mar. 6, 1923. 1,447,189

UNITED STATES PATENT OFFICE.

LEOPOLD SIMON, OF NEW YORK, N. Y.

WINDOW SCREEN.

Application filed August 4, 1917. Serial No. 184,471.

To all whom it may concern:

Be it known that I, LEOPOLD SIMON, a citizen of the United States, residing at New York, in the county of New York and State of New York, have invented certain new and useful Improvements in Window Screens, of which the following is a full, clear, and exact description, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to window screens and with regard to its more specific features to window screens adapted to cover an irregular shaped opening.

An object of this invention is to provide an adjustable window screen adapted to cover a semi-circular shaped opening.

A further object of the invention is to provide a device of the character described having louvres which may be moved from a position to screen the opening to position such as will permit the passage of light and air.

A further object of the invention is to provide a device of the character described which will be simple in construction, economical in manufacture and efficient in operation.

Other objects will be in part obvious and in part pointed out hereinafter.

The invention accordingly consists in the features of construction, combinations of elements and arrangement of parts which will be exemplified in the construction hereinafter set forth, and the scope of the application of which will be indicated in the following claims.

In the accompanying drawings annexed hereto and forming part of this specification in which similar reference characters refer to similar parts throughout the several vews,

Figure 1 is an elevation of a window filled with a screen embodying this invention.

Fig. 2 is a perspective view of the circular screen.

Fig. 3 is a side elevation.

Fig. 4 is a detail of one louvre.

While many of the features of this invention are of general application, particular advantages are obtained when the invention is embodied in a screen adapted to protect a semi-circular opening, and for that reason the invention is disclosed in connection with that particular adaptation. The numeral 1 represents a frame of the same general shape as the opening to be protected. As illustrated, this frame comprises a horizontal piece 2 and a semi-circular, or arcuate piece 3 attached at its ends to the ends of the horizontal piece. A second semi-circular, or arcuate piece as 4 is also connected to the horizontal piece, concentrically with the member 3. For convenience and strength combined with lightness, each of these members 2, 3 and 4 may be in the form of a channel iron and the flanges of the channel iron in the piece 2 may extend upwardly, but the flanges of the channel members 3 and 4 may extend away from each other, to facilitate the turning of the louvres about to be mentioned.

Extending radially between the concentric members 3 and 4 and pivoted in each of said members in a series of oscillatable slats, or louvres 5, each of which is tapering, being approximately triangular in form. Thus the axes of oscillation of the slats are inclined relative to each other from the generally common center of inclination adjacent the member 4. When the louvres are moved into the plane of the frame 1, the sides of the slats will be substantially radial to the members 3 and 4, and they will be so spaced that when moved into substantially the same plane, they will co-operate to close the opening. They may be and, as illustrated, are adapted to overlap in either extreme position.

A practical construction for these louvres is illustrated in Fig. 4, in which the numeral 10 indicates a wire framework of substantially triangular form corresponding to the form of the louvre. The numeral 11 indicates a block disposed at that corner of the triangle which is towards the center of the assembled screen. This block is provided with openings into which ends 12 and 13 of the frame 10 project, and on the side opposite the openings with a neck 14 having a reduced portion 15 at its outer end adapted to fit in an opening in the member 4, and serve as a pivot for the louver. On that side of the triangular frame 10 opposite the member 11 is provided another pivot 17 adapted to fit in an opening in the member 3.

This may be made by bending the material of one side of the frame upwardly to form the pivot and attaching the material of the other side thereto to form a shoulder; or the frame may have its top member integral and the pivot may comprise a short tubular portion fitting over the top member and carrying the pivot. This short member may be fastened to the top member in any suitable manner as by being crimped thereon. The pivots 15 and 17 are co-axial with each other and may, as in the illustration, be disposed on the center line of the louver.

Means are provided for oscillating, or rotating all of the louvers on their pivotal axes in unison comprising, as illustrated, an arcuate member 19 substantially concentric with the members 3 and 4 connected with a corresponding portion of each louver not on the axis of the pivot, so as to move toward and from the frame member 1, and occupy a plane concentric to it when the screen is closed. As illustrated, the frame 10 is provided at one corner with an eye 20 and passing through the eye 20 and connecting the eye pivotally with the member 19 is a loop or link 21. A suitable cord may be provided for operating the member 19, which will preferably be attached to the next louver to the end so that the cord will not interfere with the complete closing of the screen.

In order to avoid interference between the members 11 of adjacent louvers, each alternate louver may have its neck 14 longer than the neck of the adjacent louvers whereby the inner ends of these alternate louvers will be spaced sufficiently from the center of the member 4 and alternately terminate at different distances therefrom so that the members 11 of adjacent louvers do not interfere with each other.

Each of the frames 10 may be covered with any suitable sheet material such as glass, metal or wood, but a convenient material for the purpose comprises cotton duck, which may be sewed to the framework as well as to the pivot members through openings in the latter. To strengthen the louver the frame may be braced by a tie wire 20′.

The lower channel member 2 may be of sufficient width to serve not only as support for the member 4, but also as a track for the supports of a lower screen or drapery as shown in Fig. 3.

This lower screen may comprise a plurality of flexible louvers 25 each attached to blocks 26 at its ends, and provided with members 27 at its center. Each of these blocks may be attached to rigid vertical members 28 at both front and back.

A rectangular rod 29 may extend parallel to the channel 2, and have mounted thereon for horizontal but not rotative movement brackets 30, to the front and back of which the ends of the members 28 may be connected, whereby when the rod is rotated the slats are rotated with the rod to open or close the screen.

The brackets 30 may have supporting arms as shown at 32, carrying anti-friction rolls 33 which may engage a flange 34 of the channel 2 to support the screen from the channel 2.

Operating cords as 35 may be attached to the brackets 30 by which they may be moved horizontally to collapse the collapsible louvers and remove the screen from before the opening.

A latch as 36 may be provided for holding the vertical members in extended position.

By this construction, by pulling on the cord 35, the vertical members at one side will be moved longitudinally of the channel whereby the screen will be removed from before the opening.

Means are also provided for covering the central space around the members 4 and the pivot members 11, which may take the form of a rosette, as shown in Fig. 1.

The manipulation of the screen will be obvious from the description of its construction. By the movement of the member 19, all of the louvers will be simultaneously rotated each about its pivot whereby the louvers may be all brought substantially into the plane of the frame 1 or may be moved to a position perpendicular to that plane thus either substantially wholly excluding the passage of air and light through the screen or freely permitting such passage.

Thus by the above construction are accomplished among others the objects hereinbefore set forth.

As many changes could be made in the above construction and many apparently widely different embodiments of this invention could be made without departing from the scope thereof, it is intended that all matter contained in the above description or shown in the accompanying drawings shall be interpreted as illustrative and not in a limiting sense.

It is also to be understood that the language used in the following claims is intended to cover all of the generic and specific features of the invention herein described, and all statements of the scope of the invention, which, as the matter of language, might be said to fall therebetween.

Having described my invention what I claim as new and desire to secure by Letters Patent is—

1. A window screen comprising, in combination, a semi-circular frame, a plurality of radially disposed slats pivoted in the frame on radially disposed pivots, a semi-circular member and means for connecting the end

of each slat distant from its pivotal center with said semi-circular member.

2. A window screen including, in combination, a plurality of slats, pivot members having slat engaging portions pivotally supporting said slats, adjacent slat engaging portions of said pivot members being relatively offset so as to avoid interference in the operation thereof.

3. A window screen comprising, in combination, a plurality of radially disposed slats, each slat being provided with a pivot member on the end towards the center, adjacent ones of said pivot members having slot holding portions disposed at different distances from the center.

4. A window screen comprising, in combination, a substantially U-shaped frame provided at one end with a pivot member and at its other end with a pivot member comprising a block in the plane of the screen into which both of the free ends of the U-shaped frame are fixed.

5. A window screen comprising, in combination, a substantially U-shaped frame provided at one end with a pivot member and at its other end with a pivot member into which both of the free ends of the U-shaped frame are fixed, and sheet material attached to said frame and lying in the plane joining the legs of the U-shaped frame.

6. A window screen comprising, in combination, a plurality of radially disposed slats, each slat including a substantially U-shaped frame provided at one end with a pivot member and at its other end with a pivot member comprising a block in the plane of the screen into which both of the free ends of the U-shaped frame are fixed, said blocks being staggered to avoid interference between adjacent slats.

7. A screen comprising, in combination, a frame comprising two concentric arcuate members, a plurality of slats pivoted to said members and oscillatable to open and close the screen, the oscillatory axes of said slats being generally radially arranged relative to each other, said slats tapering toward said inner arcuate member, and alternately terminating at different distances therefrom.

8. A screen comprising, in combination, a frame comprising two concentric arcuate members, a plurality of slats pivoted to said members and oscillatable to open and close the screen, the oscillatory axes of said slats being generally radially arranged relative to each other, said slats tapering toward said inner arcuate member, and alternately terminating at different distances therefrom, and an arcuate screen operating member pivotally connected to said slats and movable to and from said frame, said screen operating member being in a plane concentric to said arcuate frame members when the screen is closed.

9. A screen comprising, in combination, a frame having concentrically mounted flanged arcuate members, and a straight member having an upstanding stiffening flange serving as a track for a roller, and slats movably mounted in said arcuate members.

In testimony whereof I affix my signature, in the presence of two witnesses.

LEOPOLD SIMON.

Witnesses:
J. THOMSON,
C. J. KULBERG.