A. DARROCH.

GRATING.

APPLICATION FILED MAY 22, 1913.

1,092,094. Patented Mar. 31, 1914.

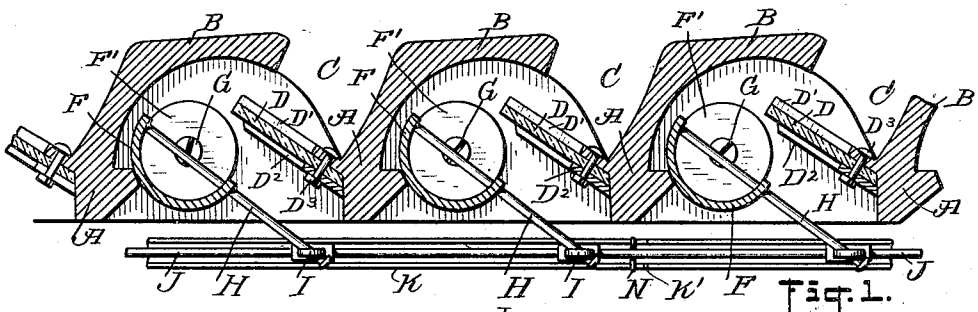


Fig. 1.

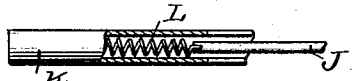


Fig. 2.

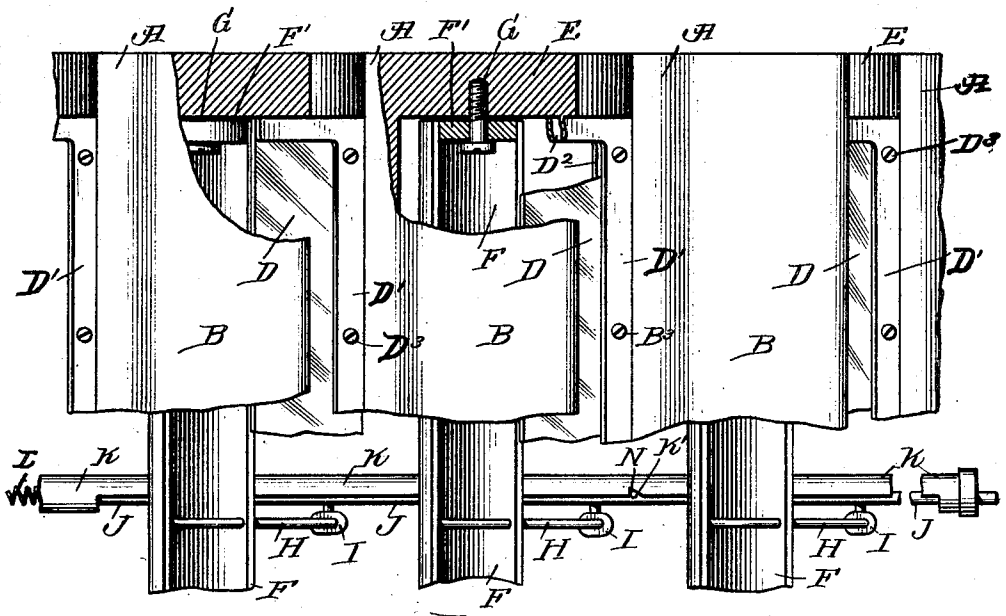


Fig. 3.

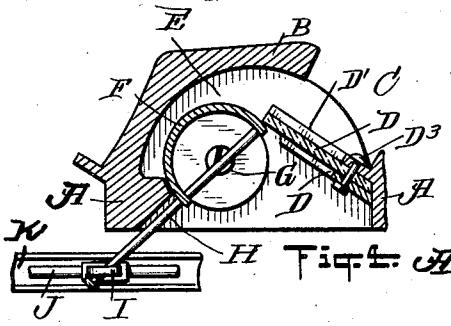


Fig. 4.

WITNESSES

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GRATING.

1,092,094. Specification of Letters Patent. Patented Mar. 31, 1914.

Application filed May 22, 1913. Serial No. 769,347.

To all whom it may concern:

Be it known that I, ANGUS DARROCH, a citizen of the United States, and a resident of the city of New York, borough of Brooklyn, in the county of Kings and State of New York, have invented a new and Improved Grating, of which the following is a full, clear, and exact description.

The object of the invention is to provide a new and improved grating for use in the roofs of subways, buildings and other structures, and arranged to prevent rain water, debris and the like from passing through the grating, to illuminate the space below the grating by refracted light, to provide proper ventilation for the said space, and to close the grating in case of fire to prevent draft. In order to accomplish the desired result, use is made of grate bars provided with arched roofs open at one side, a building light extending under each roof below the opening thereof, and a ventilator under each roof adjacent the inner end of the said building light.

A practical embodiment of the invention is represented in the accompanying drawings forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the views.

Figure 1 is a cross section of the grating; Fig. 2 is a side elevation, partly in section, of one end of the automatic closing device; Fig. 3 is a plan view of the grating with parts in section; and Fig. 4 is a cross section of the grating with the ventilator in closed position.

The grating is provided with grate bars A arranged parallel one to the other and spaced suitable distances apart, and each grate bar A is provided with a roof B, preferably of arch shape, and extending integrally from one grate bar and terminating a distance from the next adjacent grate bar so as to form an opening C for the admission of light to the space below the grating and for the escape of foul air from the said space to ventilate the latter. Immediately below the opening C and extending under the roof B is arranged a building light D, preferably in the form of a plate of glass or other transparent or translucent material clamped between two frames D′ and D^2, of which the upper frame D′ forms an integral part of the next following grate bar A, as will be readily understood by reference to Fig. 1. The bottom frame D^2 is secured to the frame D′ by bolts D^3 which also pass through openings in the building light D. The ends of the frame D′ are integrally connected with the ends E which latter close the roofs B at the ends thereof and integrally connect the grate bars A with each other, the ends E also forming integral parts of the roofs B so as to sustain the same.

Each of the building lights D is inclined inwardly and upwardly, as shown in Fig. 1, and the inner edge of each building light D terminates a distance from the attached end of the corresponding roof B so as to form an opening between the inner edge of the building light and the grate bar A. In the opening is arranged a ventilator F, preferably made semicircular in cross section, and having integral ends F′ mounted to turn on pivots G screwed or otherwise secured to the ends E.

When the several parts are in the position shown in Figs. 1 and 3, the ventilator F is in open position so as to leave a ventilating space or opening between the corresponding grate bar A and the adjacent inner end of the building light D to allow foul air to pass from the space below the grating up through the space between the grate bars A and the inner ends of the building lights D to finally pass out into the open air through the opening C, to ventilate the space below the grating. When it is desired to shut off the draft as in case of fire, then the several ventilators G are turned into the closed position shown in Fig. 4. For this purpose the ventilators F are provided with arms H slidingly engaging eyes I attached to a rod J mounted to slide lengthwise in a tubular bearing K held fixed immediately below the grating on suitable supports (not shown) arranged in the space below the grating. One end of the rod J is pressed on by a spring L attached to the bearing K and the rod is provided with a pin engaging a notch K′ formed in the bearing K so as to normally hold the rod J in the position shown in Figs. 1 and 3 with the ventilators F in open position and the spring L under tension. The pin L is made of metal of a low melting point so that in case of a fire in the space below the grating the pin N melts and in doing so it releases the rod J so that the latter is drawn from the right to the left by the action of the spring L. Movement of the rod J in the

direction mentioned causes the eyes I to impart movement to the arms H so as to turn the ventilators F into the closed position shown in Fig. 4 to shut off all draft from the space below the grating. The ventilators F can also be closed by the operator prying the bar J outward so as to disengage the pin N from the notch K' to allow the spring L to move the rod J to the left with a view to close the ventilators F as above explained.

It will be noticed that by locating the building light D in the manner described, the rays of light are readily refracted to the space below the grating to illuminate the same, and by inclining the building light all rain water striking the building light is caused to run down the same to the grate bar to which the building light is attached, to then run along the grate bar in the direction of the length thereof to be discharged at the ends of the grating. It will also be noticed that the rain water striking the roof and running down the same is likewise carried off by the grate bars to the ends of the grating.

By the construction set forth loose material such as waste paper, sticks or other debris cannot be passed through the grating from above, thus preventing littering of the space below the grating with extraneous matter.

As previously mentioned the ventilators are normally open for allowing foul air to escape from the space below and permitting fresh air to enter the space by way of the grating to insure proper ventilation.

Having thus described my invention, I claim as new and desire to secure by Letters Patent:

1. A grating, comprising grate bars, arched roofs between adjacent grate bars and open at one side, a building light extending under each roof below the opening thereof, and a ventilator under each roof adjacent the inner end of the said building light.

2. A grating, comprising spaced grate bars, arched roofs each having one side rising from one of the grate bars and having its other side spaced from the adjacent grate bar to form an opening, and a building light under each roof below the said opening.

3. A grating, comprising spaced grate bars, arched roofs each having one side rising from one of the grate bars and having its other side spaced from the adjacent grate bar to form an opening, a building light under each roof below the said opening, and a ventilator under each roof and arranged adjacent the inner end of the said building light.

4. A grating, comprising spaced grate bars, arched roofs each having one side rising from one of the grate bars and having its other side spaced from the adjacent grate bar to form an opening, and a building light under each roof below the said opening, the said building light being inclined upwardly and inwardly.

5. A grating, comprising spaced grate bars, arched roofs each having one side rising from one of the grate bars and having its other side spaced from the adjacent grate bar to form an opening, a building light under each roof below the said opening, a ventilator under each roof and arranged adjacent the inner end of the said building light, the ventilator being mounted to turn and being semicircular in cross section, and means for turning the said ventilator to open and close the same.

6. A grating, comprising spaced grate bars, arched roofs each having one side rising from one of the grate bars and having its other side spaced from the adjacent grate bar to form an opening, a building light under each roof below the said opening, a ventilator under each roof and arranged adjacent the inner end of the said building light, an arm extending from each ventilator, a spring-pressed rod engaged by the said arm, and fusible locking means for holding the rod locked under the tension of its spring.

7. A grating, comprising spaced grate bars, arched roofs each having one side extending integrally from one grate bar and terminating a distance from the next adjacent grate bar, the grate bars and roofs having integral ends, a plate of transparent material under each roof below the open side of the roof, the said plate being inclined upwardly and inwardly, and its inner free end terminating a distance from the arched roof, pivots held on the said ends of the roofs, and ventilators each extending in the space between the free end of a plate and the roof, each ventilator being approximately semicircular in cross section and each ventilator having its ends engaging the said pivots, and means for turning the said ventilators in unison into open or closed position.

8. A grating, comprising spaced grate bars, arched roofs each having one side extending integrally from one grate bar and terminating a distance from the next adjacent grate bar, the grate bars and roofs having integral ends, a plate of transparent material under each roof below the open side of the roof, the said plate being inclined upwardly and inwardly, and its inner free end terminating a distance from the arched roof, pivots held on the said ends of the roofs, ventilators each extending in the space between the free end of a plate and the roof, each ventilator being approximately semicircular in cross section and each ventilator having its ends engaging the said pivots, an arm extending from each ventilator, a rod having eyes engaged by the

arms of the said ventilators, a tubular support for the said rod to slide in and provided with a notch, a spring pressing one end of the said rod, and a pin of a low melting point and held on the said rod to engage the said notch to normally hold the ventilators in open position.

In testimony whereof I have signed my name to this specification, in the presence of two subscribing witnesses.

ANGUS DARROCH.

Witnesses:
THEO. G. HOSTER,
GEORGE H. EMSLIE.