Aug. 21, 1928. 1,681,188

L. E. KUPFER

DOOR OPENER

Filed April 8, 1927

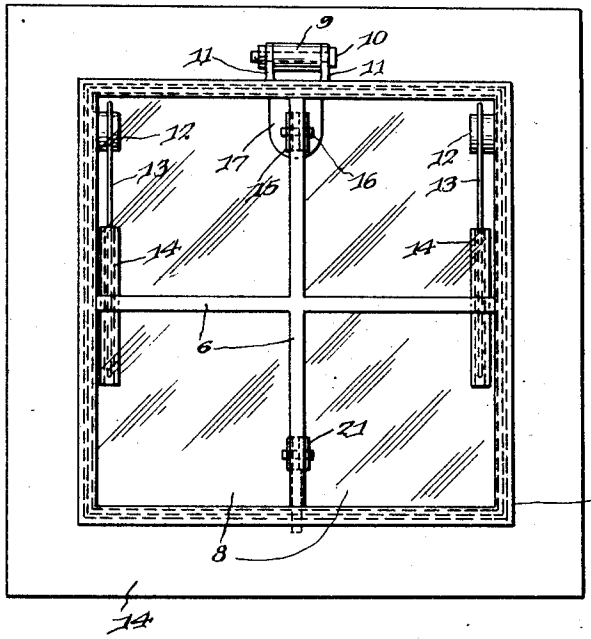


Fig. 1.

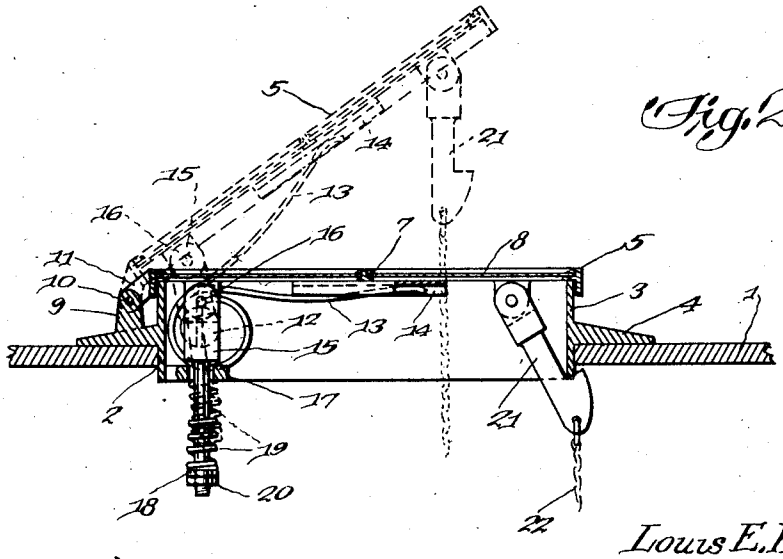


Fig. 2.

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Patented Aug. 21, 1928. 1,681,188

UNITED STATES PATENT OFFICE.

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DOOR OPENER.

Application filed April 8, 1927. Serial No. 182,082.

This invention relates to new and useful improvements in sky-lights, and more particularly to what will be known as ventilating sky-lights, especially adapted for use on garages and similar buildings. One of the objects of my invention is the provision of a sky-light member which is so mounted that it may be quickly opened to permit the injurious and poisonous gases, which frequently accumulate, to escape and thus prevent injurious effects upon persons entering the building, which has often occurred, sometimes resulting in death to the persons effected.

Another object of the invention is the provision of a device of the above character which includes a movable frame provided with means, whereby to normally retain the frame in a closed position over an opening in the roof of a building and further provided with means, whereby to quickly move the frame to an open position when released.

With the above and other objects in view, the invention consists in the novel features of construction, the combination and arrangement of parts hereinafter more fully set forth, pointed out in the claim, and shown in the accompanying drawings, in which

Figure 1 is a top plan view of my improved device, and

Figure 2 is a transverse sectional view, the open position of the movable closure frame being shown by dotted lines.

In the accompanying drawings, the numeral 1 indicates what may be the roof portion of a garage or similar building provided with an opening 2. Positioned in the opening 2 for a substantially tight fit is a body frame 3, which in the present instance is shown as rectangular in shape, although other shapes can be used and the opening 2 formed accordingly. In order to support the frame 3 in the opening, the frame is formed with laterally projecting flanges 4, the lower faces of which are formed to conform to the surface of the roof, which in the present instance is substantially flat. The upper faces of these flanges 4 are sloped or inclined, as shown, in order to properly shed any water or moisture therefrom and prevent the same from seeping beneath the flanges and in through the opening 2.

The upper edges of the body frame 3 extend an appreciable distance above the upper faces of the flanges 4 to form a support for the movable closure frame 5. The frame 5 includes a body portion and cross pieces 6, all of which are formed with lateral flanges 7 to support the transparent members 8. Extending upwardly from the intermediate portion of one of the flanges 4 is a lug 9, perforated transversely at its upper end to receive the pivot bolt 10 which also extends through the perforated ears 11 formed on one side of the frame 5. From this it will be apparent that the frame 5 is mounted for swinging movement so that it may readily swing to an open or closed position, relative to the upper edge of the frame 3. As will be seen in Figure 2, the frame 5 is of such size as to fit down over the upper edge of the frame 3, with a substantially snug fit in order to provide a substantially weather proof fit.

Extending inwardly from opposite sides of the frame 3 and arranged at the same side of the frame 3 as the hinged side of the frame 5, are lugs 12, each having an opening therethrough to receive one end of the springs 13. The other end of each of these springs is coiled around the lugs 12 and then extended toward the other side of the frame 3 and slidably disposed channel guides 14. It will be apparent from the foregoing, that the springs 13 will be of sufficient weight as to move the frame 5 to the open position shown by dotted lines in Figure 2, this opening movement being created through the pressure of the free ends of the springs 13 against the underside of the frame 5, as shown.

In order to limit the opening movement of the frame 5 a rod 15 is hingedly connected to the lower face of the frame 5 as shown at 16, while the lower end of the rod extends downwardly through a perforated ear 17 on the frame 3. The rod 15 is slidable through the ear 17 and has a nut 18 threaded onto its lower end. Arranged between the ear 17 and nut 18 and surrounding the rod 15, is a coil spring 19, the tension of which may be readily adjusted by movement of the nut 18 in order to limit the swinging movement of the frame 5. The nut 18 is retained in various adjusted positions by means of a joint nut 20 on the lower end of the rod 15.

The frame 5 is retained in a closed position by means of the pivoted catch member 21, carried by said frame and adapted to be moved into engagement with the lower edge of the frame 3, as shown in Figure 2. The

latch face of the catch member is formed with a notch to receive the edge of the frame 3 in order to hold the catch in a locked position. Attached to the catch member is a cord or chain 22, whereby the catch may be readily released from engagement with the frame 3 and also used for pulling the frame downwardly to a closed position, and moving the catch 21 into engagement with the frame 5.

From the above description, taken in connection with the accompanying drawings, it will be apparent that while my improved sky-light is constructed so that the frame 5 can be normally held in a closed position, it can be readily released so that the springs 13 will move the frame 5 to an open position. In entering a garage for the purpose of starting the motor of a motor vehicle the cord or chain 22 can be grasped to release the catch 21 for the purpose of opening the closure or frame 5, in order to permit escape of the poisonous gases that often are formed from the running of the motor, thus preventing accidents that usually occur through the accumulation of these gases in a closed garage or other building housing a motor vehicle.

While I have shown and described the preferred embodiment of my invention, it will be obvious that various changes and alterations may be carried out without departing from the spirit of the invention or the scope of the appended claim.

I claim as my invention:

In a device of the class described and in combination, a body frame, a movable frame hinged to one side of the body frame, spring members attached at one end to the body frame and their other ends loosely engaged with the movable frame for normally urging the same away from the body frame, a perforated ear extending inwardly from one side of the body frame, a rod having pivotal connection with the movable frame and movable through said ear, a nut on the lower end of the rod, and a coil spring on the rod between the nut and ear to limit movement of the movable frame.

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