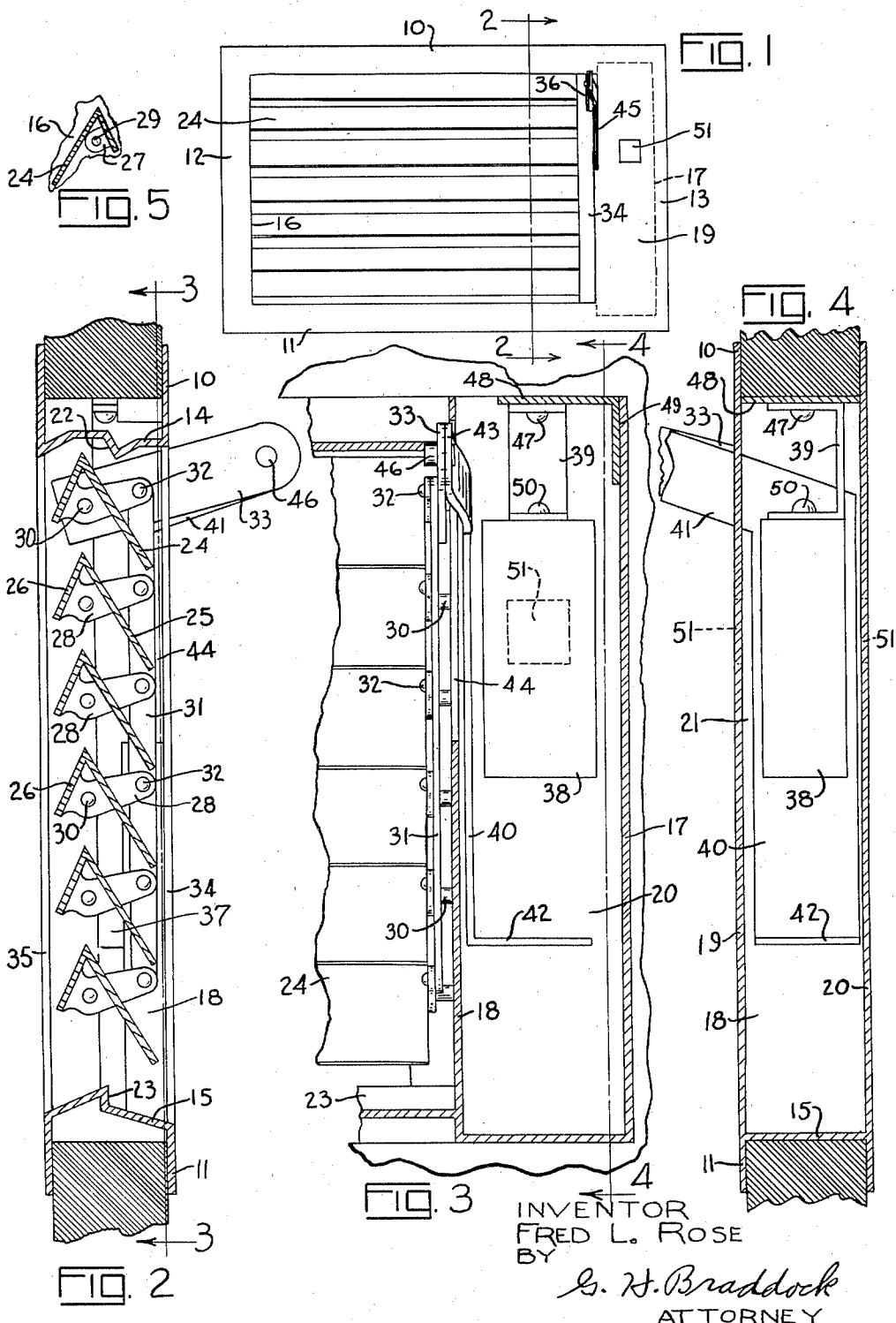


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VENTILATOR

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VENTILATOR

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This invention relates to a ventilator, useful for many purposes, but designed to be especially useful as a closure for transoms, doorways, windows, panels, or the like.

An object of the invention is to provide a ventilator of the general character as hereinafter set forth wherein will be incorporated desirable, novel and improved features and characteristics of construction.

A further object is to provide a ventilator of simple and inexpensive construction which will be an improvement generally over ventilators heretofore of commerce of more or less similar type.

A further object is to provide a ventilator which will consist of a frame having a plurality of louvers pivoted therein to turn on their axes between open and closed positions, and will include a novel and improved construction and arrangement for causing the louvers to be positively moved to their closed position when this is intentional.

A further object is to provide a ventilator which will consist of a frame, louvers pivotally supported by said frame, means adapted to be manipulated to cause the louvers to be actuated to an open condition of the ventilator, and a novel and improved construction and arrangement including a weight actuated mechanism for causing said louvers to be positively actuated to a closed condition of the ventilator when this is intentional.

And a further object is to provide a ventilator which will comprise a frame, louvers pivoted therein, means adapted to be manipulated to cause the louvers to be actuated to open position, and a novel and improved construction and arrangement including a weight actuated mechanism for actuating said louvers to closed position upon destruction of a fusible link.

With the above objects in view, as well as others which will appear as the specification proceeds, the invention comprises the construction, arrangement and combination of parts as now to be fully described and as hereinafter to be specifically claimed, it being understood that the disclosure herein is merely illustrative and intended in no way in a limiting sense, changes in details of construction and arrangement of parts being permissible as long as within the spirit of the invention and the scope of the claims which follow.

In the accompanying drawing forming a part of this specification,

Fig. 1 is a front or interior elevational view of

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a ventilator made according to the invention;

Fig. 2 is an enlarged vertical transverse sectional view, taken substantially on line 2—2 in Fig. 1, disclosing the louvers of the ventilator in open position;

Fig. 3 is a fragmentary vertical longitudinal sectional view, taken substantially as on line 3—3 in Fig. 2;

Fig. 4 is a vertical transverse sectional view, taken substantially as on line 4—4 in Fig. 3; and

Fig. 5 is a detail sectional view.

The improved ventilator herein disclosed is constituted as a frame of rectilinear configuration, louvers pivotally mounted in said frame, means adapted to be manipulated to cause the louvers to be actuated to an open condition of the ventilator, and mechanism for causing the louvers to be actuated to a closed condition of the ventilator when this is intentional.

The frame, as shown, is composed of sheet metal. It includes a top member 10, a bottom member 11 and side members 12 and 13. The top member 10 is constituted as a plate 14 having upwardly extending, interior and exterior flanges, the bottom member 11 is constituted as a plate 15 having downwardly extending, interior and exterior flanges, the side member 12 is constituted as a plate 16 having outwardly extending, interior and exterior flanges, and the side member 13 is constituted as a plate 17 having outwardly extending, interior and exterior flanges. Meeting end portions of the top and bottom members 10 and 11 and the side members 12 and 13 are integrally connected so that the rectilinear frame is constituted as a unitary structure.

A transverse wall 18, in spaced, parallel relation to and disposed inwardly of the plate 17, provides, together with said plate 17 and portions, indicated 19 and 20, of the interior and exterior walls, respectively, of the rectilinear frame of the ventilator, a vertically disposed, rectilinear housing 21 of the ventilator for a purpose to be set forth. The rectilinear housing 21 is situated at the side of the transverse wall 18 which is opposite the plate 16.

The louvers of the ventilator preferably may be composed of sheet metal. As shown, said louvers are disposed in the frame of the ventilator in parallel relation to the top and bottom members 10 and 11 and in perpendicular relation to the side members 12 and 13.

The plate 14 of the top member 10 provides a downwardly and interiorly extending surface 22 situated between the plate 16 and the transverse wall 18 and disposed at somewhat closer relation

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to the front or interior side of the ventilator than to the rear or exterior side. The plate 15 of the bottom member 11 provides a vertical, upwardly extending surface 23 situated between said plate 16 and said transverse wall 18 and disposed at about the midwidth of said bottom member. The surfaces 22 and 23 are in planes perpendicular to the plate 16 and the transverse wall 18, and said surfaces 22 and 23 are of length to substantially span the distance between said plate 16 and said transverse wall 18.

Pivotally mounted louvers 24 are supported by and span substantially the distance between the plate 16 and the transverse wall 18. As disclosed, each pivoted louver 24 consists of a body portion 25 having an extension portion 26 upon one of its sides disposed in acute angle relation to said body portion. The body portions and extension portions of the louvers are integrally joined at their upper sides. The extension portion 26 of each louver has ears, indicated 27 and 28, respectively, upon its opposite ends, the ears preferably being integral with and arranged at right angular relation to said extension portions. The louvers are pivotally mounted on the plate 16 and the transverse wall 18 in the manner best shown in Figs. 5, 2 and 3. Each of the ears 27 is provided with an aperture rotatably receiving a lug 29 on the plate 16, and each of the ears 28 is provided with an aperture rotatably receiving a lug 30 on the transverse wall 18. The pivotal points for the louvers are arranged adjacent the opposite ends of the extension portions 26 close to the midwidths of said extension portions as shown.

Numerical 31 represents an operating bar for manipulating the louvers 24 on their pivots, said operating bar being arranged between the ears 28 and the transverse wall 18. Each of said ears 28 is pivotally connected to the operating bar 31 by a pin 32. An operating lever or trigger 33 for said louvers 24 is pivotally mounted upon the uppermost lug 30 and is connected by the uppermost pin 32 to the uppermost ear 28. Metallic pieces, designated 34 and 35, upon the interior and exterior walls, respectively, of the rectilinear frame of the ventilator and extending inwardly of the transverse wall 18 at its opposite side edges, are in covering relation to the operating bar 31 and the adjacent ends of the louvers 24, and a vertical slot 36 in the metallic piece 34 freely receives the operating lever or trigger 33. Said operating lever or trigger projects interiorly of the frame of the ventilator and its throw determines the distance the operating bar 31 can move longitudinally, and hence limits the degree to which the louvers can be turned on their pivots. The construction and arrangement will be such that when the louvers have been moved to wide open position, the operating lever or trigger 33 will engage the upper end of the vertical slot 36. The closed position of the louvers will be determined by engagement of the body portion 25 of each louver with the body portion 25 of the louver just beneath, engagement of the body portion of the uppermost louver with the surface 22 and engagement of the body portion of the lowermost louver with the surface 23, as will be understood.

The vertically disposed, rectilinear housing 21 contains a weight actuated mechanism, constituted as an actuating device 37, for causing the louvers 24 to be positively moved to closed condition of the ventilator when this is intentional. A weight 38 for causing the mechanism or device 37 to be actuated and a fusible link 39 for supporting said weight 38 are also situated in said rectilinear housing 21.

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Said mechanism or device 37 is composed of rigid material, desirably metal, and includes a body portion 40 constituted as a flat slab disposed vertically in the rectilinear housing 21, a projecting element 41 integral with an upper part of said body portion and a strike plate 42 integral with the lower end of the body portion and disposed horizontally in said rectilinear housing. The projecting element 41 extends interiorly from the body portion 40 and passes freely through vertical slots 44 and 45 in the transverse wall 18 and the portion 19 of the interior wall of the ventilator, respectively, and said projecting element includes an offset portion 43 pivotally connected by a pin 46 to the interior end portion of the operating lever or trigger 33. The vertical slot 45 is contiguous with the vertical slots 36 and 44.

The fusible link 39 is suitably and conveniently supported, as at 47, by a hanger 48 itself supported, as at 49, in an upper portion of the rectilinear housing 21. In turn, the weight 38 is supported, as at 50, by said fusible link in such manner as to cause said weight to be situated at a side of the body portion 40 directly above and in spaced relation to the strike plate 42. The weight 38 desirably can be of lead, and in the disclosure as made said weight is of rectilinear configuration. Also, the weight 38 is of cross-sectional dimension to be in spaced relation to defining side walls of the rectilinear housing 21, and openings in the portions 19 and 20 of the interior and exterior walls of the ventilator at the location of said rectilinear housing are indicated 51, 51.

The construction and arrangement will be such that the louvers 24 normally will remain in any position to which manually adjusted. The construction and arrangement also will be such that when said louvers are in wide open position, as in Figs. 2 and 3, or in any partially open position, the strike plate 42 will be situated at an elevated position in the rectilinear housing 21 to be struck by the weight 38 upon release of said weight by the fusible link 39. The mechanism or device 37 including the strike plate 42 will be elevated in response to upward swinging movement of the operating lever or trigger 33 causing the louvers 24 to be moved toward open position, said louvers normally will remain in any open position to which manually adjusted, and upon destruction of the fusible link 39 the weight 38 will be released to fall by gravity and strike a downward blow against said strike plate 42 to cause said mechanism or device 37 to be depressed thus to cause said operating lever or trigger 33 to be swung downwardly and the louvers to be positively moved to closed position.

The louvers 24 will become closed in positive manner whether heat sufficient to destroy the fusible link 39 is applied at the interior or exterior side of the ventilator, the openings 51, 51 affording free access of heat to said fusible link. The transverse wall 18 also can be provided with openings for passage of heat.

It will be noted that the louvers are adapted to be moved between open and closed conditions, independently of the fusible link and the weight 38 which said fusible link normally supports, in response to raising and lowering operations of the operating lever or trigger 33. Also it will be noted that the whole of the operating mechanism, except the lever or trigger 33 and the projecting element 41, is enclosed within the frame of the ventilator.

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In the illustrated embodiment of the invention, the operating mechanism for the louvers is accessible at the upper right hand corner of the ventilator. It will be understood, however, that operating mechanism within the principles of the invention can be situated to be accessible at any other location which may be preferred, such, for example, as at the upper left hand corner, the lower left hand corner, or the lower right hand corner of the ventilator. In the event of employment of operating mechanism accessible at location other than as disclosed, the construction and arrangement of the elements of the operating mechanism of course will be modified to be suitable to the installation.

What is claimed is:

1. A ventilator comprising a frame providing spaced apart supports, a louver mounted on said spaced apart supports for movement between an open and a closed position, an operating lever rigid with said louver and projecting interiorly of said frame adapted to be moved upwardly and downwardly to cause the louver to be actuated to said open and closed positions, respectively, an actuating device for causing said operating lever to be moved downwardly situated in said frame to be capable of having substantially vertical movement and connected to said operating lever at a location interiorly of the frame, a weight situated within said frame above and in spaced relation to a part of said actuating device to be capable of having substantially vertical movement, and a fusible element supporting said weight, said actuating device being adapted to be moved upwardly in response to upward movement of said operating lever, said weight being adapted to fall by gravity against said actuating device upon destruction of said fusible element, and the actuating device being adapted to be forcibly moved downwardly in response to a blow struck thereagainst by said weight to cause said operating lever to be moved downwardly thus to actuate said louver to said closed position.

2. A ventilator comprising a frame providing spaced apart supports, a louver pivotally mounted on said spaced apart supports for movement between an open and a closed position, an operating lever rigid with said louver and projecting interiorly of said frame adapted to be swung upwardly and downwardly to cause the louver to be actuated to said open and closed positions, respectively, an actuating device for causing said operating lever to be swung downwardly situated in said frame to be capable of having substantially vertical movement and pivotally connected to said operating lever at a location interiorly of the frame and in spaced relation to said louver, a weight situated within said frame above and in spaced relation to a part of said actuating device to be capable of having substantially vertical movement, and a fusible element supporting said weight, said actuating device being adapted to be moved upwardly in response to upward swinging movement of said operating lever, said weight being adapted to fall by gravity against said actuating device upon destruction of said fusible element, and the actuating device being adapted to be forcibly moved downwardly in response to a blow struck thereagainst by said weight to cause said operating lever to be swung downwardly thus to actuate said louver to said closed position.

3. A ventilator comprising a frame providing

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spaced apart supports, a louver mounted on said spaced apart supports for movement between an open and a closed position, an operating lever rigid with said louver and projecting interiorly of said frame adapted to be moved upwardly and downwardly to cause the louver to be actuated to said open and closed positions, respectively, an actuating device for causing said operating lever to be moved downwardly constituted as a body portion and a strike plate situated in said frame to be capable of having substantially vertical movement and a projecting element disposed interiorly of said frame adjacent said operating lever, means connecting said projecting element and operating lever to each other at a location in spaced relation to said louver, a weight situated within said frame above and in spaced relation to said strike plate to be capable of having substantially vertical movement, and a fusible element supporting said weight, said actuating device being adapted to be moved upwardly in response to upward movement of said operating lever, said weight being adapted to fall by gravity against said strike plate upon destruction of said fusible element, and the actuating device being adapted to be forcibly moved downwardly in response to a blow struck against said strike plate by said weight to cause said operating lever to be moved downwardly thus to actuate said louver to said closed position.

4. A ventilator comprising a frame providing spaced apart supports, a louver pivotally mounted on said spaced apart supports for movement between an open and a closed position, an operating lever rigid with said louver and projecting interiorly of said frame adapted to be swung upwardly and downwardly to cause the louver to be actuated to said open and closed positions, respectively, an actuating device for causing said operating lever to be swung downwardly constituted as a body portion and a strike plate situated in said frame to be capable of having substantially vertical movement and a projecting element disposed interiorly of said frame adjacent said operating lever, means pivotally connecting said projecting element and operating lever to each other at a location in spaced relation to said louver, a weight situated within said frame above and in spaced relation to said strike plate to be capable of having substantially vertical movement, and a fusible element supporting said weight, said actuating device being adapted to be moved upwardly in response to upward swinging movement of said operating lever, said weight being adapted to fall by gravity against said strike plate upon destruction of said fusible element, and the actuating device being adapted to be forcibly moved downwardly in response to a blow struck against said strike plate by said weight to cause said operating lever to be swung downwardly thus to actuate said louver to said closed position.

5. A ventilator comprising a frame providing spaced apart first and second supports and a passageway at a side of said first support opposite said second support, a louver mounted on said first and second supports at the side of the first support opposite said passageway for movement between an open and a closed position, an operating lever rigid with said louver and projecting interiorly of said frame adapted to be moved upwardly and downwardly to cause the louver to be actuated to said open and closed positions, respectively, an actuating device for causing said operating lever to be moved down-

wardly constituted as a body portion and a strike plate situated in said passageway to be capable of having substantially vertical movement and a projecting element disposed interiorly of said frame adjacent said operating lever at the side of said first support opposite the operating lever, means connecting said projecting element and operating lever to each other at a location in spaced relation to said frame, a weight situated within said passageway above and in spaced relation to said strike plate to be capable of having substantially vertical movement, and a fusible element supporting said weight, said actuating device being adapted to be moved upwardly in response to upward movement of said operating lever, said weight being adapted to fall by gravity against said strike plate upon destruction of said fusible element, and the actuating device being adapted to be forcibly moved downwardly in response to a blow struck against said strike plate by said weight to cause said operating lever to be moved downwardly thus to actuate said louver to said closed position.

6. A ventilator comprising a frame providing spaced apart first and second supports and a passageway at a side of said first support opposite said second support, a louver pivotally mounted on said first and second supports at the side of the first support opposite said passageway for movement between an open and a closed position, an operating lever rigid with said louver and projecting interiorly of said frame adapted to be swung upwardly and downwardly to cause the louver to be actuated to said open and closed positions, respectively, an actuating device for causing said operating lever to be swung downwardly constituted as a body portion and a strike plate situated in said passageway to be capable

of having substantially vertical movement and a projecting element disposed interiorly of said frame adjacent said operating lever at the side of said first support opposite the operating lever, means pivotally connecting said projecting element and operating lever to each other at a location in spaced relation to said frame, a weight situated within said passageway above and in spaced relation to said strike plate to be capable of having substantially vertical movement, and a fusible link supporting said weight, said actuating device being adapted to be moved upwardly in response to upward swinging movement of said operating lever, said weight being adapted to fall by gravity against said strike plate upon destruction of said fusible element, and the actuating device being adapted to be forcibly moved downwardly in response to a blow struck against said strike plate by said weight to cause said operating lever to be swung downwardly thus to actuate said louver to said closed position.

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