Nov. 9, 1943. S. J. OLSHIN 2,334,121

VENTILATOR STRUCTURE

Filed Oct. 24, 1942 2 Sheets-Sheet 1

Fig. 2.

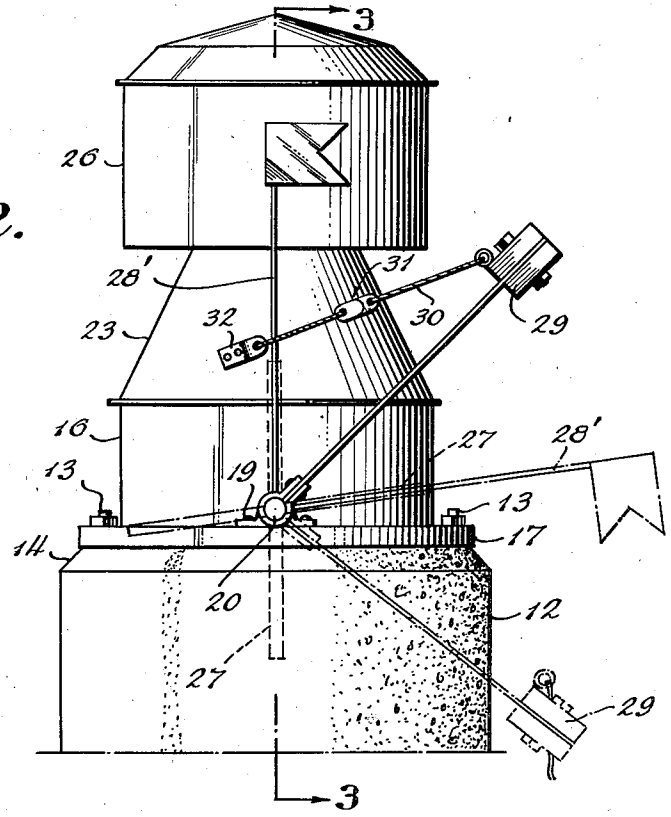
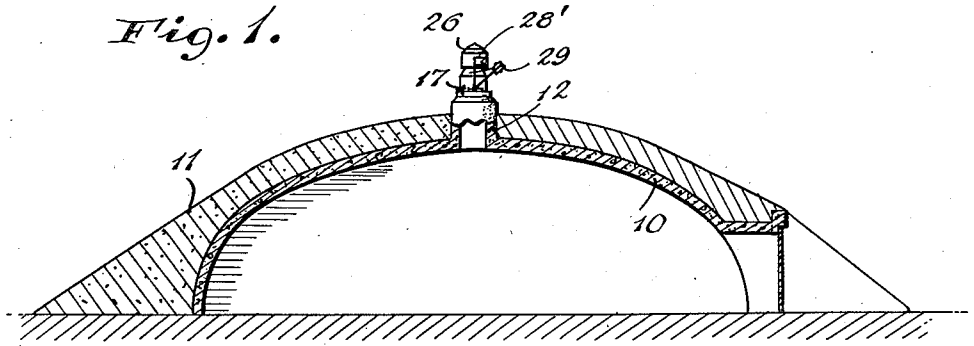


Fig. 1.



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Filed Oct. 24, 1942 2 Sheets-Sheet 2

Fig. 3.

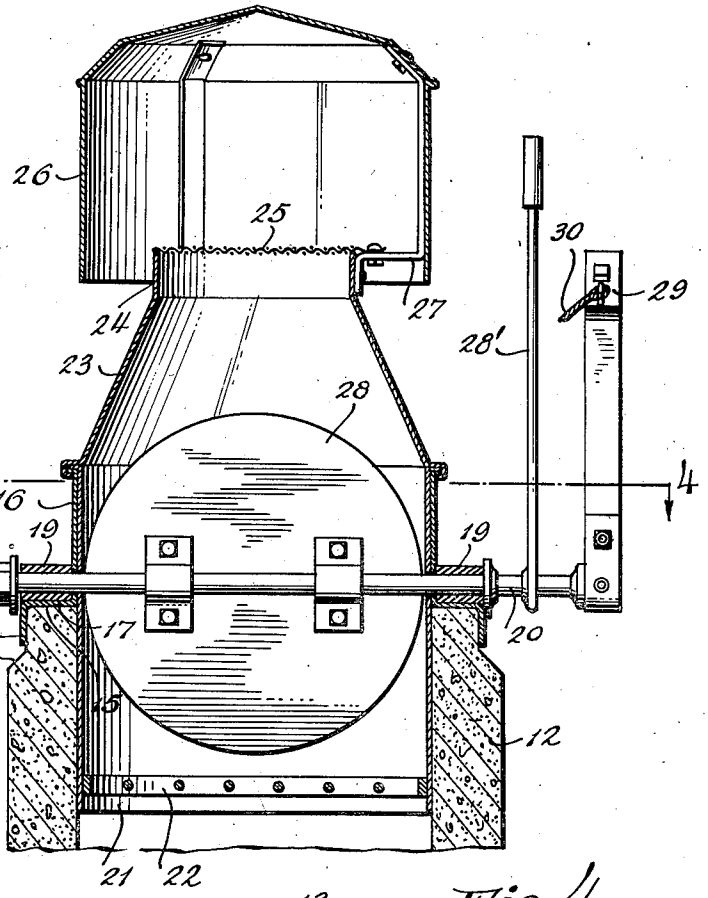


Fig. 5.

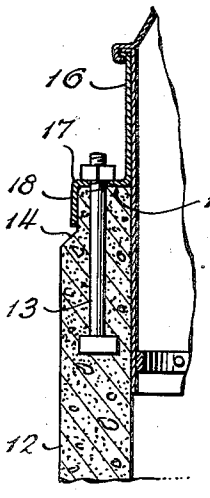
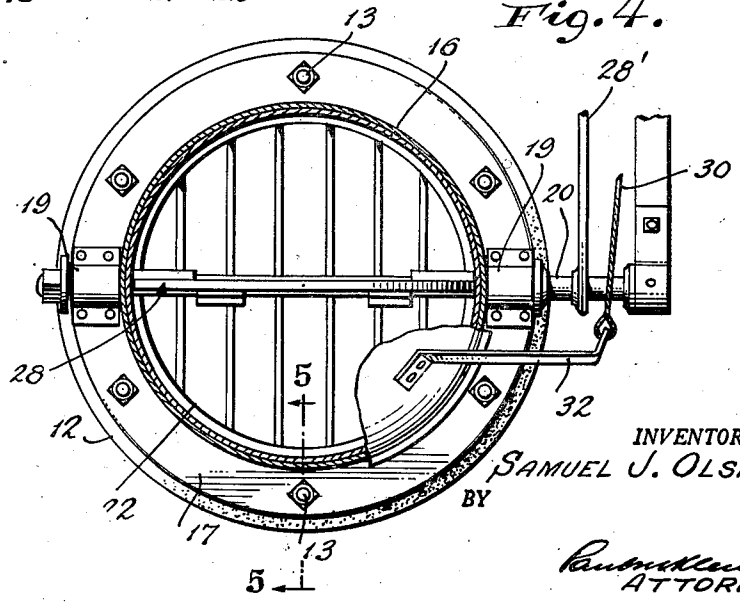


Fig. 4.



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Patented Nov. 9, 1943 2,334,121

UNITED STATES PATENT OFFICE

2,334,121

VENTILATOR STRUCTURE

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Application October 24, 1942, Serial No. 463,149

4 Claims. (Cl. 98—86)

This invention relates generally to ventilator structures with operative dampers, and particularly to the kind adapted for use with underground ammunition magazines, and wherein both masonry and metal parts are being employed.

One of the principal objects of the present invention is the provision of an especially effective and at the same time relatively inexpensive ventilator structure, wherein a substantially solid, weather and moisture resisting base is combined with a readily mountable and de-mountable metal part, which latter includes all of the essential features of a practical and serviceable ventilator.

Another object of this invention resides in the provision of an effective ventilator of the type indicated, and wherein the essential safety features housed in the metal part thereof include a heat-responsive closing damper, with a damper position indicator, and fine and coarse grill work shielded against wind and rain by an overhanging hood.

A further object of this invention resides in the provision of a base composed of a concrete under structure, the upper end of which is covered by a removable metal top, the latter being securely held in place by means of anchor bolts cast into and extending slightly above the concrete, said metal top forming the frame and support for all of the metal parts employed in the ventilator structure.

The foregoing and still further objects of the present invention will become more fully apparent from the following description and the accompanying drawings, forming an essential part thereof, and wherein

Fig. 1 is a diagrammatical illustration of an ammunition magazine shown in section and equipped with my ventilator;

Fig. 2 is an elevation of my ventilator in accordance with my invention;

Fig. 3 is a somewhat enlarged cross section taken on line 3—3 through Fig. 2;

Fig. 4 is a fragmental top view of the ventilator; and

Fig. 5 is a cross section taken on line 5—5 of Fig. 4.

Referring now specifically to Figs. 1 and 2, numeral 10 denotes the interior reinforced concrete structure of an ammunition magazine, preferably covered with earth 11, or built within the ground. Concrete structure 10 terminates in a neck 12 forming the top opening of the magazine, the neck extending partially above the earth covering 11. Cast into the concrete neck material are a plurality of anchor bolts 13, as clearly illustrated in Fig. 5, the upper ends of which extend above the top end of the masonry.

The upper end of the neck construction is so shaped as to provide a sloping ledge 14 and a horizontal ledge 15, the latter serving as support for the metal structure of the vent. (See Figs. 3 and 5.) This metal structure consists of an outer frame 16, the lower end of which is provided with a horizontal flange or ledge 17, from which depends a vertical rim 18.

In the horizontal flange portion 17 are provided openings for the reception of the upper ends of bolts 13, by means of which frame 16 is securely connected with the concrete portion of the vent. Resting upon and removably secured to metal flange or ledge 17 are two oppositely disposed bearings 19, which serve for journalling the ends of damper shaft 20 passing through the metal structure of the vent.

Within outer frame member 16 there is disposed an interior frame member 21, at the lower end of which is arranged a grid 22, consisting of a plurality of stout wire rods set in a ring, which is secured to member 21 near its lower end.

Extending from the upper end of both outer and inner frame members 16 and 21, is a tapered member 23 terminating at its reduced end in an upright extension 24, over which is placed a screening 25. Covering tapered member 23 is a mushroom-shaped hood 26, supported by means of braces 27, which are attached to extension 24. Hood 26 is completely closed, except for its bottom end, which latter is open and permits free circulation of air passing through the vent to without. It will be observed that the lower edge of hood 26 extends substantially below the upper edge of extension 24, in which way rain and wind is prevented from entering the vent interior.

Referring to damper shaft 20, the latter extends through both inner and outer members 16 and 21 of the vent metal structure and supports a damper 28 which is intended to normally assume an open, vertical position, such as indicated in Fig. 3. The shaft extends beyond the bearings, and at one end of the shaft there is secured a damper position indicator 23' in the form of a flag, and a weight 29, which is normally held in the full line position shown in Fig. 2 by means of a connection 30, which includes a fuseable link 31. One end of connection 30 is preferably affixed at 32 to tapered extension 23.

In the event link 31 is subjected to abnormal heat, it will melt and release weight 29, in consequence of which the latter will actuate the damp-

er and will turn it to the dot-and-dash closing position shown in Fig. 2. The flag or damper position indicator 28' will assume a corresponding position shown. Thus the position of the damper may be readily observed from without.

The aforedescribed construction of the metal parts of my ventilator has the advantage of being extremely simple and economical, and permitting its ready attachment as well as its removal in respect to the concrete neck 12. All parts of the ventilator are made accessible for repairs, adjustments or replacement, without lacking in sturdiness and effectiveness. One of the outstanding features of the present structure is the arrangement of the bearings for the damper shaft, which are secured to the metal ledge or flange 17 of frame member 16. Due to their accessibility, the bearings can be readily serviced, lubricated and exchanged if so required. Similarly all other parts carried by the shaft are made easily accessible.

The combined masonry and metal structure of the ventilator is designed to prevent moisture from settling and deterioration of its components. Thus sloping ledge 14 of the concrete neck sheds water readily; metal flange 17 completely covers horizontal ledge 15 of the neck, thereby preventing water from penetrating into the concrete and into the vent interior, and the arrangement of hood 26 tends to deflect water from the metal under-structure.

While I have shown and described a specific construction of my invention and have illustrated a vent of a substantially cylindrical design, it is quite obvious that its shape and minor details may be changed without departing from the scope of my idea, as defined in the annexed claims.

I claim:

1. In a safety ventilator for underground magazines, the combination with a masonry base, of a removable ventilator structure reposing upon the base, anchor bolts extending from the base, said structure including an exterior supporting frame covering the upper end of the base and being secured thereto by means of said bolts, a portion of said frame extending above the base, an interior frame within the exterior frame and extending into the base, bearings supported by the exterior frame, a damper shaft pivoted in the bearings and supporting a damper operative within the interior frame, the damper shaft extending beyond the bearings and being provided with a weight and a damper position indicator, a weight holder provided with a fusible element normally keeping the weight in elevated position, at which position the damper is fully open and the indicator stands upright; a tapered member extending from the exterior supporting frame, a screen arranged at the smaller end of the tapered member; a hood covering the latter and a grill formed at the lower end of the interior frame beneath the damper.

2. In a ventilator structure, a concrete base, anchor bolts cast thereinto and extending above its upper end, an outer frame covering and extending above the latter and being secured thereto by said bolts, a pair of bearings supported by and attached to the base-covering portion of the outer frame, an inner frame extending into the base, a damper shaft passing through the outer and inner frames and being journaled in the bearings and extending beyond them, a damper supported by said shaft, a weight and a damper position indicator secured to the shaft, means connected with the weight for normally holding the damper in open position, a tapered member extending from the upper ends of the two frames and having a screen at its smaller end, a mushroom hood overhanging and fully covering said tapered member, and grill work closing the lower end of the inner frame.

3. In a combination masonry and metal ventilator, a masonry base with anchor bolts cast therein and extending beyond its top, a stepped-off outer metal frame having a flanged lower end set on top of the base, covering the latter and being fastened thereto by said bolts, said flanged lower frame end forming a ledge, a pair of oppositely disposed bearings secured to the ledge and supporting a weighted damper shaft, a damper secured to the shaft, a grill equipped inner frame extending into the base, a screened taper extending above the frames, a mushroom hood covering the taper, and means extending from the taper and engaging the weight of the shaft for keeping the damper normally open.

4. A ventilator, comprising in combination, a substantially cylindrical concrete base having bolts extending from its top, an outer metal frame extending above the base and provided with a ledge covering the top of the base and being secured by said bolts, a grill-equipped inner frame extending into the base, a cone forming the top for both frames, a mushroom hood for the cone, bearings secured to the ledge of the outer frame, a damper, provided with a releasable closing weight and a damper position indicator, journaled in said bearings, and heat-responsive means secured to the cone for normally holding the weight in elevated position, and thereby keeping the damper open.

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