C. M. GOODRICH.

VENTILATOR.

APPLICATION FILED NOV. 13, 1918.

1,381,630.

Patented June 14, 1921.

3 SHEETS—SHEET 1.

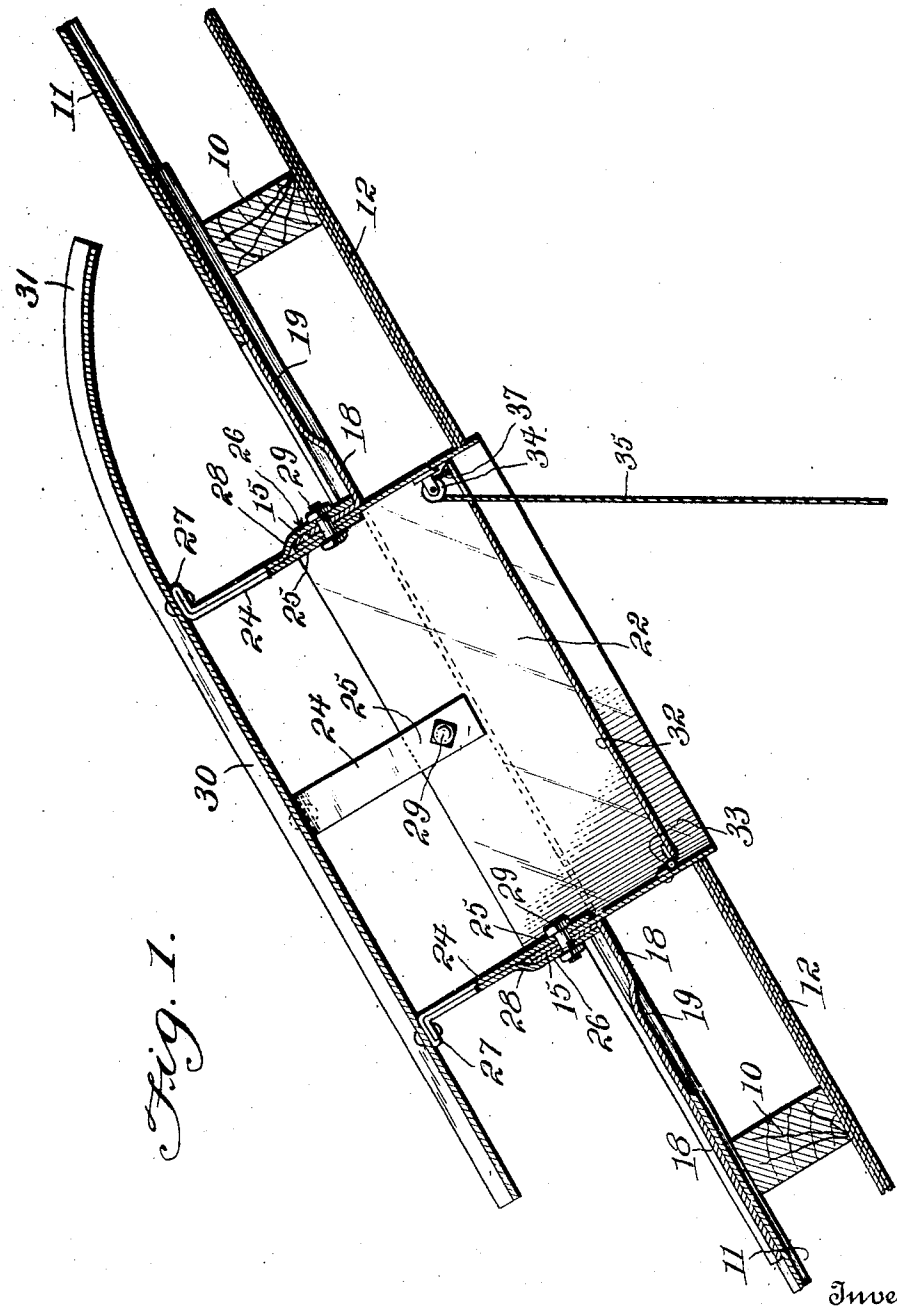


Fig. 1.

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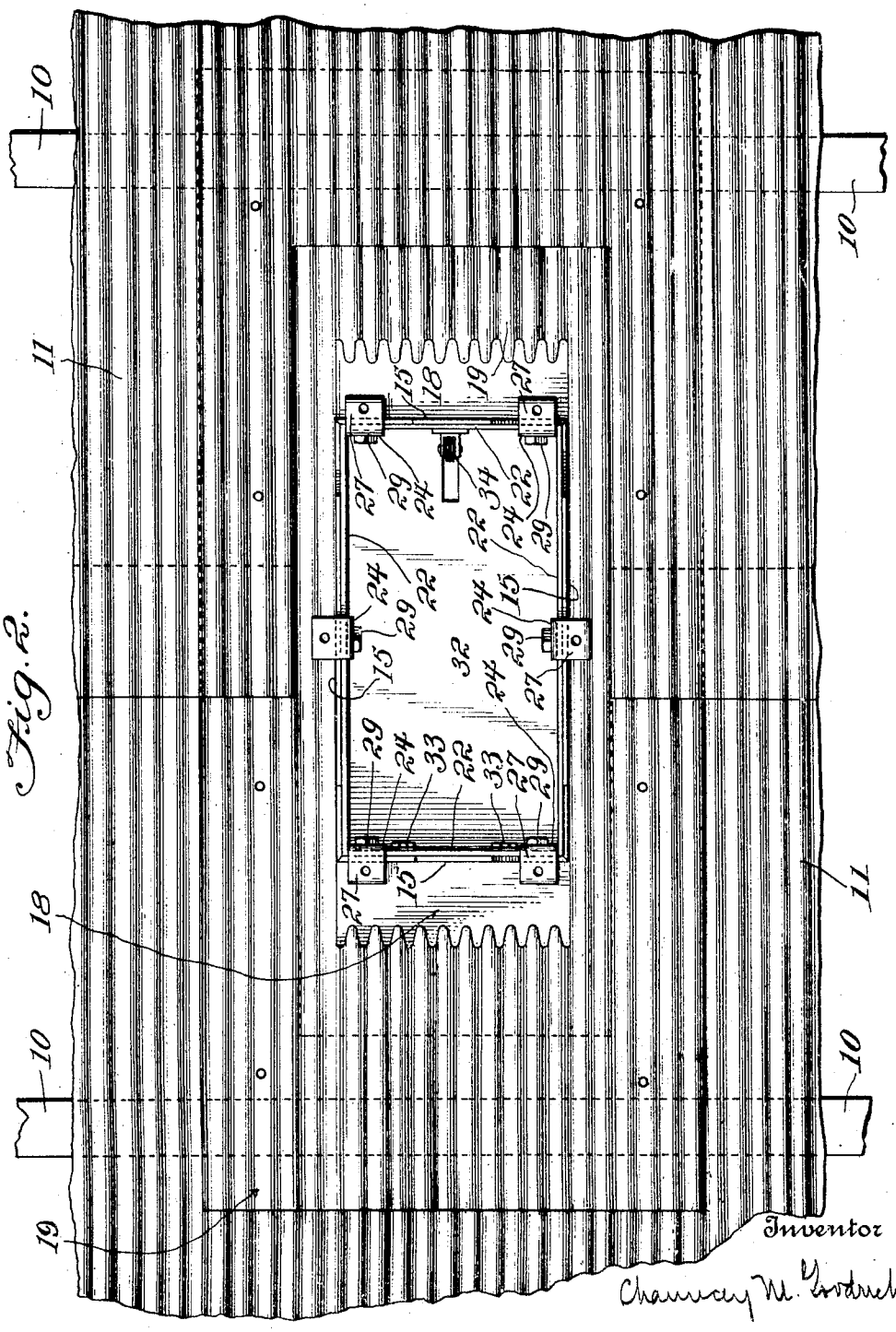


Fig. 2.

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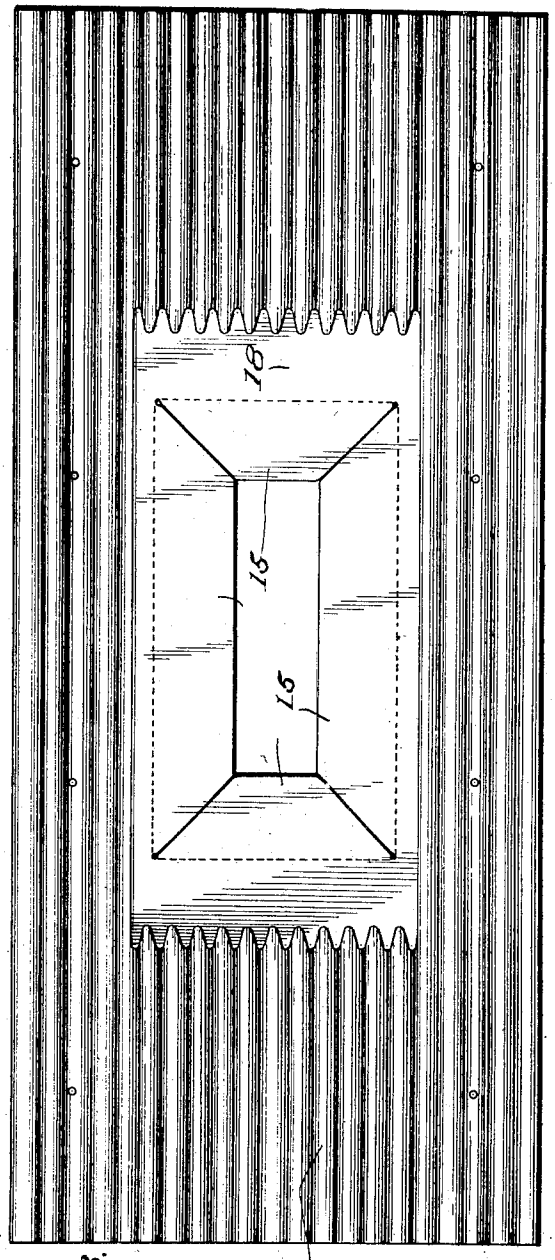


Fig. 3.

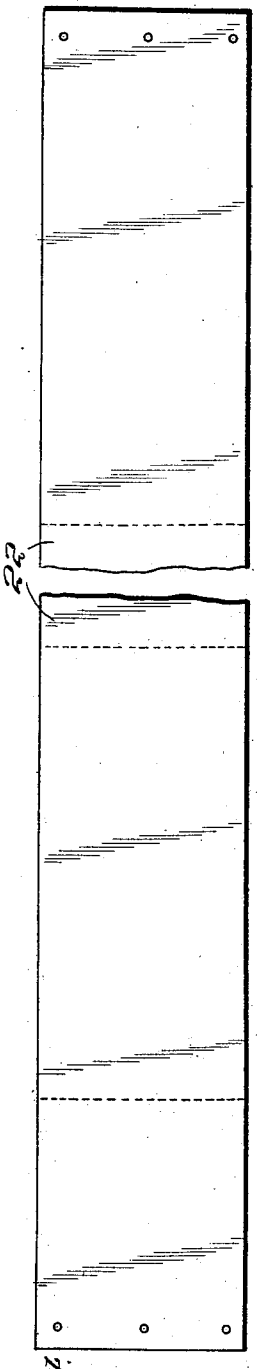


Fig. 4.

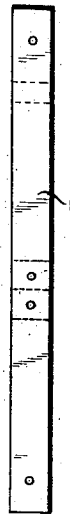


Fig. 5.

Inventor

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UNITED STATES PATENT OFFICE.

CHAUNCEY M. GOODRICH, OF THE UNITED STATES ARMY.

VENTILATOR.

1,381,630. Specification of Letters Patent. Patented June 14, 1921.

Application filed November 13, 1918. Serial No. 262,386.

(FILED UNDER THE ACT OF MARCH 3, 1883, 22 STAT. L., 625.)

To all whom it may concern:

Be it known that I, CHAUNCEY M. GOODRICH, major, Engineers, United States Army, a citizen of the United States, stationed at Washington, District of Columbia, have invented an Improvement in Ventilators, of which the following is a specification.

The invention described herein may be used by the Government, or any of its officers or employees in prosecution of work for the Government, or by any other person in the United States, without payment of any royalty thereon.

This invention relates to improvements in ventilator sructures designed to be located over openings in the roofs or other portions of buildings, and has for its principal object to provide a device constructed of plates or sections of sheet metal so constructed that the members may be shipped in flat shape superimposed, and the members bent to the required shape where the ventilators are to be erected.

With this and other objects in view the invention consists in certain new and useful construction and combination of parts as will hereinafter be more fully described and pointed out in the claims.

In the drawings illustrative of the preferred embodiment of the invention—

Figure 1 is a longitudinal section of the improved device arranged in the roof of a building.

Fig. 2 is a plan view with the cover member removed.

Fig. 3 is a view of the blank from which the body portion is produced.

Fig. 4 is a view of the blank from which the casing or box is produced.

Fig. 5 is a view of the blank from which the standards are produced.

The improved device comprises a base member formed with a plurality of clefts whereby portions are released and adapted to be bent substantially at right angles to the body of the plate to form attaching flanges, a casing formed initially from a plate of sheet metal in oblong shape and adapted to be bent into box like form to engage in the opening formed by bending the flanges of the base, a plurality of standards each formed from a strip of sheet metal bent to the required shape and including forked or divided terminals to engage over the flanges and the portions of the casing engaged thereby, a closure for the casing hingedly united to one of its walls, and a cover or roof member attached to the outer ends of the standards and spaced from the casing. By this arrangement the ventilator structure may be "knocked-down" for shipment or storage and "set-up" at the building where it is to be employed.

The improved device is designed more particularly for use in connection with hospitals, cantonment buildings, and the like used in connection with military operations where the amount of space occupied by the structure when transported or shipped, should be as small as possible.

The improved device may be adapted without material structural change to buildings of various forms and sizes and buildings employed for various purposes, and it is not desired to limit the invention to any particular form of building or like structure.

The improved device is shown associated with a roof structure including purlin members 10, outer covering members 11 of sheets of corrugated metal and sheets 12 of wall and ceiling members.

The improved ventilator structure comprises a base plate 18 with the end portions corrugated as indicated at 19 to correspond to the corrugations of the roof plates.

An oblong opening is formed centrally of the plate 18 with obliquely directed clefts leading from the corners of the openings as shown in Fig. 3 to form attaching flanges 15 when bent outwardly.

An oblong case or box like structure forms a part of the improved device and is constructed from a single sheet 22 of metal adapted to be bent into oblong shape along the dotted lines shown in Fig. 4. When bent to shape the casing fits closely within the opening of the member 18 with its outer upper portion in contact with the flanges 15. The flanges 15 and the upper portion of the casing are thus in close contact as shown. A plurality of standards likewise forms a part of the improved device and are each preferably formed of a single strip 24 bent intermediate the ends upon themselves with the terminals 25—26 separated to engage over the contacting portions 15 and 22, and each likewise bent laterally at the bend to form a flange 27. The portions 26 of the

standards are also bent laterally as shown at 28 to form shoulders to engage the upper edges of the portions 15 and 22.

The four contacting portions 15—22—25 and 26 are secured together by bolts, rivets or like fastening devices 29. By this means the opening in the roof is provided with a casing having vertical sides and securely held in position. It will also be noted that the adjacent portions of the roof plates are likewise secured in position and assist in supporting the ventilator structure.

Attached to the flanges 27 of the standards is a cover member 30, preferably formed of a section or sections of corrugated sheet metal, corresponding to that of the roof members 11.

When applied to the roof the upper end of the cover member 30 will be curved downwardly toward the roof as shown at 31, to reduce the space between the roof members and the cover member at one end. The cover member 30 will be considerably larger than the opening in the roof so that it overhangs the opening to a corresponding extent and thus not only protects the opening, but conceals the same from observation from above. Thus when the improved structure is applied to a hospital or like structure the cover member 30 conceals the opening and prevents light from showing through. Thus the ventilator structure prevents the lights from the building being observed from enemy aeroplanes from above.

A hospital, cantonment building, or the like equipped with this improved ventilator will not be exposed to attack from enemy aeroplanes when the interior of the hospital or other structure is illuminated.

The improved device is simple in construction, can be inexpensively manufactured, and shipped in large quantities, and occupies relatively small space, when "knocked-down" or with the members disposed in flat shape as above mentioned.

The casing 22 is provided with a closure or door 32, hingedly supported from one wall of the casing as shown at 33. Attached to another wall of the casing is a cable guide pulley 34 over which a pull cable 35 leads. The cable is connected at 37 to the door 32 and leads thence over the pulley 34 and through a guide slot in the door. By this arrangement the door can be fully closed or permitted to open to any required extent.

Having thus described the invention what is desired to secure by Letters Patent is:

1. In a device of the class described, a base plate having a plurality of clefts to produce flanges bent at right angles to the face of the plate, a casing engaging in the opening formed by bending the flanges and in engagement with the same, standards each including a forked portion bearing over the contacting portions of the casing and the flanges and attached thereto, and a cover device attached to the standards and spaced from the casing.

2. In a device of the class described, a casing including vertical walls, roof member and a plurality of standards each being a strip bent double upon itself intermediate the ends, its free ends embracing the edge of the casing, and its doubled end supporting the roof member.

3. A knock-down structure comprising a base member having a plurality of clefts to produce flanges adapted to be bent substantially at right angles to the body of the base member, a casing formed of a strip of material bent to shape to engage in the opening formed by bending the flanges and against the flanges, a plurality of standards each engaging the flanges and the portion of the casing in contact therewith, and a cover member supported by the standards in spaced relation to the casing.

4. A knock-down structure comprising a base member having a plurality of clefts to produce flanges bent substantially at right angles to the body of the base member, a casing formed of a strip of material bent to shape to engage in the opening formed by bending the flanges and against the flanges, a plurality of standards each engaging the flanges and the portion of the casing in contact therewith, a cover supported by the outer terminals of the standards in spaced relation to the casing, and a closure for said casing adapted to be movably coupled thereto.

CHAUNCEY M. GOODRICH.