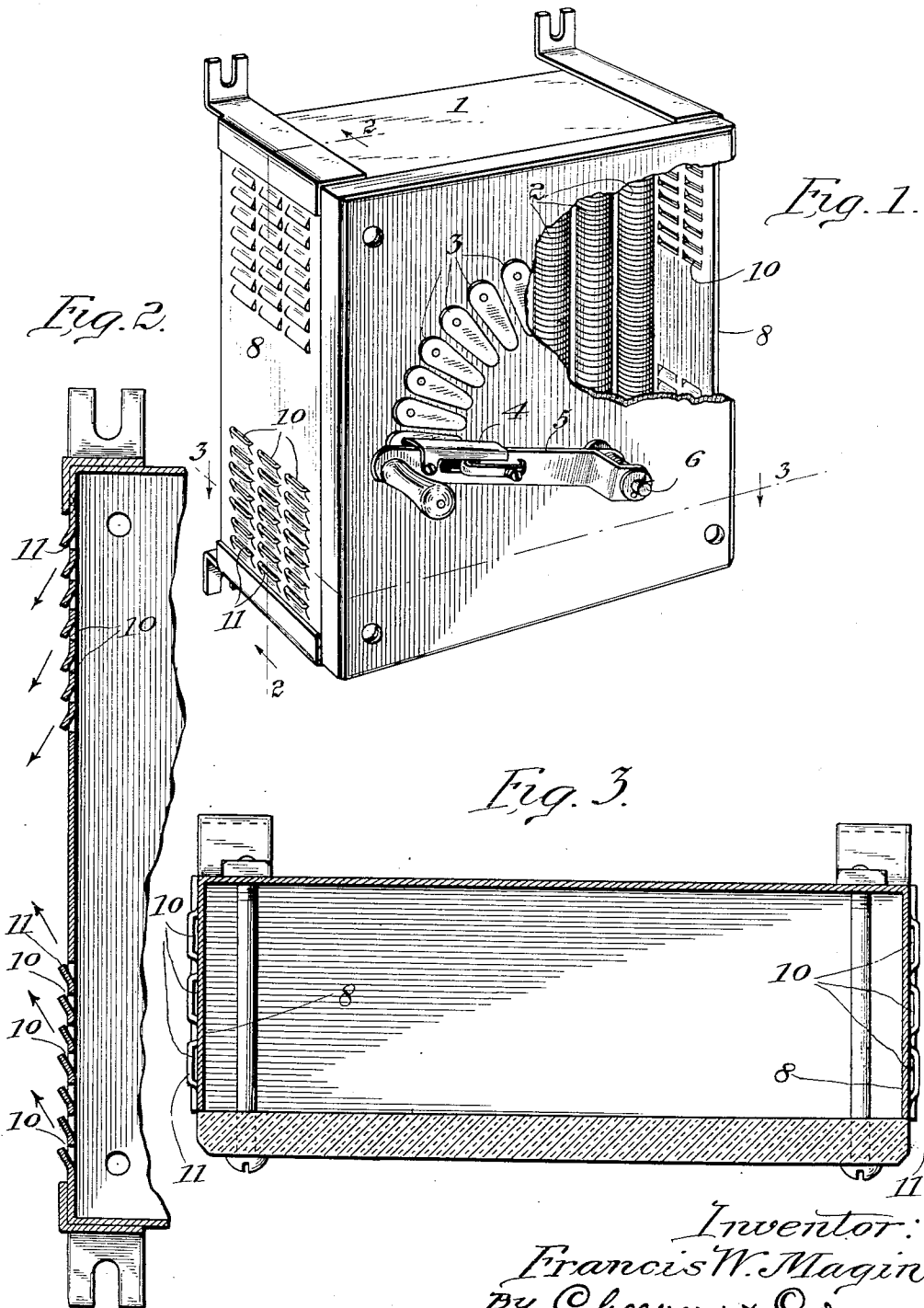


F. W. MAGIN.
RESISTANCE BOX.
APPLICATION FILED JUNE 9, 1920.

1,373,825.

Patented Apr. 5, 1921.



Inventor:
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UNITED STATES PATENT OFFICE.

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RESISTANCE-BOX.

1,373,825.

Specification of Letters Patent.

Patented Apr. 5, 1921.

Application filed June 9, 1920. Serial No. 387,696.

To all whom it may concern:

Be it known that I, FRANCIS W. MAGIN, a citizen of the United States, residing at Milwaukee, in the county of Milwaukee and State of Wisconsin, have invented a certain new and useful Improvement in Resistance-Boxes, of which the following is a specification.

My invention relates to resistance boxes, more particularly for motor starting purposes, and in some respects it may be regarded as an improvement over the form shown in my prior Patent No. 1,076,231, granted to me March 21, 1916. The general purpose of the present invention, as in the previous case, is to provide a construction which will accomplish ventilation and prevent flames from issuing from the box in case of a blow-out of the resistance coils or other inclosed parts. In the patented case, a wire screen of fine mesh is employed, but this has certain disadvantages, among them being that the screen is more or less susceptible to damage and deterioration and the structure requires considerable time for production and assembly. The objects of the present invention are to effectually prevent the issue of flames and at the same time accomplish the result by means which are rugged, durable, are slightly in appearance, and are simple and inexpensive to manufacture.

I accomplish my objects by the mechanism illustrated in the accompanying drawing in which—

Figure 1 is a perspective view of an apparatus embodying my invention, a portion of the box being broken away to reveal the parts within;

Fig. 2 is a vertical section of one of the ventilated ends, this section taken on the line 2—2 of Fig. 1;

Fig. 3 is a plan section taken on the line 3—3 of Fig. 1.

Like numerals denote like parts throughout the several views.

The construction of the resistance coils and switching elements is not of material importance and it will be sufficient for the present purpose to say that the box or case 1 contains resistance coils 2 of any suitable type, these coils being associated with respective contacts 3 adapted to be engaged by the shoe or contactor 4 of the controller arm 5, pivotally mounted upon the stud 6.

In the present instance it is the end walls 8, 8 which are ventilated and they consist of sheet metal having a plurality of slots 10, 10 which are approximately louver slots. The distinction, however, is that instead of forming these slots as in the ordinary manner, the opening between the hood portion 11 and the nearest portion of the metal on the opposite side of the slots is so reduced as to gain the same kind of effect as is obtained in a miner's lamp—that is, the opening is so restricted that the flaming gases in attempting to pass through, will be chilled below the point which would enable them to ignite gases or objects outside of the box. These slots are formed in considerable number as indicated in the drawings, the result being that the aggregate area of the openings is sufficient to give ample ventilation and yet at no slot can the flame be projected to the outside.

In the developed form of invention, the hoods of the slots near the bottom of the box are below the slots, so that the gases will be deflected upward; and the hoods of the slots near the top of the box are above the slots, so that the gases will be deflected downward. This creates a baffling effect for, generally in the case of a blowout, the bulk of the flame will be produced more or less at the center of the box and the flames will tend to radiate outward in all directions. If the upper slot hoods projected upward and the lower hoods projected downward, they would be more or less in line with the lines of pressure of the expanding gases and there would be a greater danger of the flame being forced through. By reversing this arrangement, however, and placing the downward extending hoods at the top and the upward extending hoods at the bottom, the gases are forced to bend approximately at right angles to the lines of force impelling them, which causes them to first strike the inner surface of the hoods and be chilled by contact with them and then be deflected approximately ninety degrees before the gases can issue.

It will be evident to those skilled in the art of sheet metal working that these quasi louver slots can be readily stamped in the box ends in a single operation, which greatly simplifies the process of manufacture and which also produces a much more rugged and durable construction than in the case of a screen as shown in my earlier patent.

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

- 5 1. Apparatus of the class described having a casing with a wall of sheet metal having ventilating slots, the edges whereof are close together for chilling the flaming gases within to a point below the temperature of ignition.
- 10 2. A resistance box having sheet metal walls having quasi louver slots formed in them, the edges of the slots closely approaching each other for chilling hot gases attempting to issue.
- 15 3. A resistance box having sheet metal side walls and slots substantially in the form of louver slots, but having the edges

of the slots close together for chilling hot gases attempting to issue, the hoods of the slots being arranged approximately at right 20 angles to lines radiating from the center of the box.

4. A sheet metal resistance box having extremely narrow slots in the side walls for ventilation, the formation being analogous 25 to louver slots and the hoods of the slots projecting outward and upward from the lower portion of the box, and outward and downward from the upper portion of the box.

In witness whereof, I have hereunto subscribed my name.

FRANCIS W. MAGIN.