J. W. LENLING.

VENTILATOR AND REGISTER.

APPLICATION FILED JULY 21, 1913.

1,101,642. **Patented June 30, 1914.**

FIG. 1

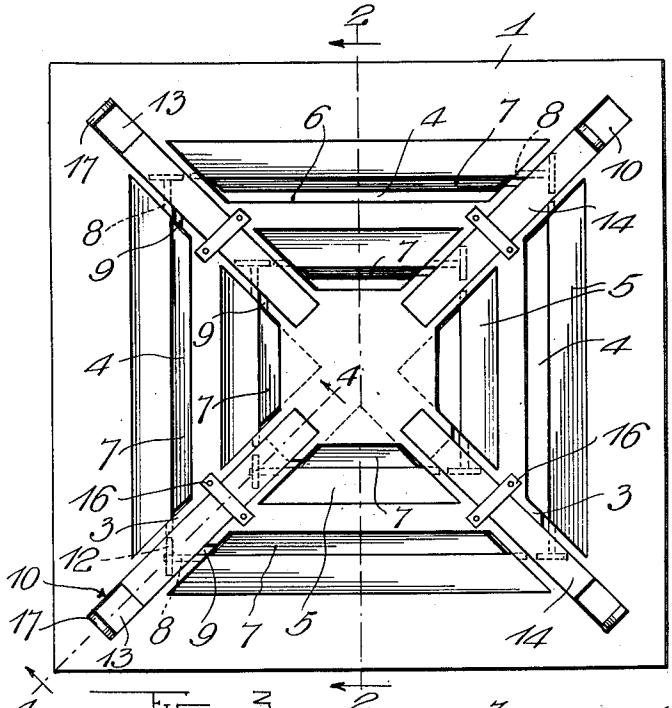


FIG. 2

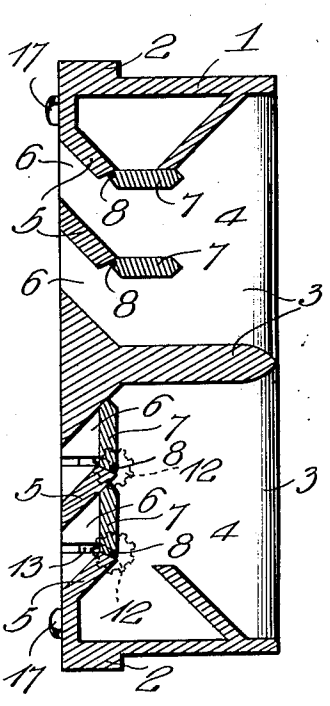


FIG. 3

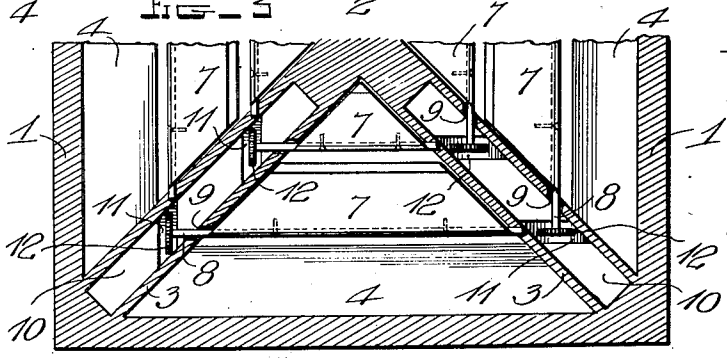


FIG. 5

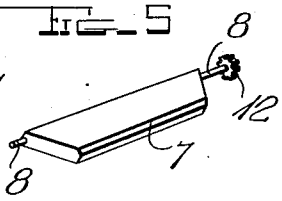


FIG. 6

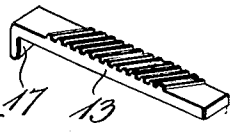
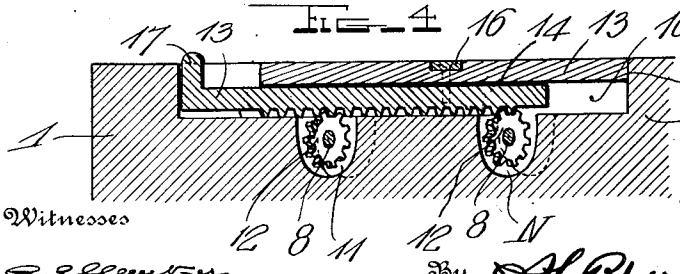


FIG. 4



Witnesses

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UNITED STATES PATENT OFFICE.

JOHN W. LENLING, OF GROTON, SOUTH DAKOTA.

VENTILATOR AND REGISTER.

1,101,642. Specification of Letters Patent. Patented June 30, 1914.

Application filed July 21, 1913. Serial No. 780,245.

To all whom it may concern:

Be it known that I, JOHN W. LENLING, a citizen of the United States, residing at Groton, in the county of Brown and State of South Dakota, have invented certain new and useful Improvements in Ventilators and Registers; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to improvements in ventilators or registers.

One object of the invention is to provide a ventilator or hot air register having an improved construction and arrangement of air distributing and controlling mechanism whereby the air may be discharged in any desired direction.

Another object is to provide a device of this character having an improved means for operating the air controlling mechanism of the ventilator.

With these and other objects in view, the invention consists of certain novel features of construction, and the combination and arrangement of parts as will be hereinafter more fully described and claimed.

In the accompanying drawings: Figure 1 is a front view of a ventilator embodying my invention and illustrating part of the air controlling shutters open and the others closed; Fig. 2 is a central vertical longitudinal section of the ventilator, taken on the line 2—2 of Fig. 1. Fig. 3 is an enlarged sectional view of a portion of the ventilator with parts of the shutter operating mechanism removed to illustrate more clearly the construction and arrangement of the shutter operating gears; Fig. 4 is an enlarged detail vertical section taken longitudinally through the outer portion of one of the diagonal partitions of the ventilator and through the operating mechanism for the shutters of one section thereof taken on the line 4—4 of Fig. 1; Fig. 5 is a detail perspective view of one of the shutters and its operating gear; Fig. 6 is a detail inverted perspective view of one of the rack bars for operating the shutters of the ventilator.

My improved ventilator or register is adapted to be set into the wall or into the floor and comprises a rectangular frame 1 which is preferably rectangular and may be set into a box connected with a hot air or ventilating flue in the usual or any suitable manner. The frame 1 has on its outer edge, wall or floor, engaging flanges 2 and has therein diagonally arranged partition bars 3 which divide the frame into four triangular spaces or compartments 4. Each of the spaces or compartments 4 has arranged therein at its outer edges series of slats 5 which may be cast integral with or otherwise rigidly secured to the partition bars 3. The slats 5 are spaced suitable distances apart to form air discharging passages 6 and are arranged at an angle as shown to deflect the air outwarly from the center of the ventilator toward said side edges thereof as will be readily understood.

The passages 6 between the slats in each of the compartments 4 are provided with shutters 7 which are fixedly mounted on supporting and operating shafts 8 the ends of which project beyond the ends of the shutters as shown. One of the ends of the shafts 8 are revolubly mounted in bearing apertures formed in one side of the partition bars 3 near the ends of the adjacent slats while the opposite ends of the shafts are loosely mounted in bearing notches 9 formed in the adjacent surface of the opposite bar 3 as shown. The notches 9 communicate with longitudinally disposed channels or grooves 10 formed in the outer edges of the bars 3 and in the lower walls of which are formed recesses 11.

Fixed on the ends of the shutter operating shafts 8 which project through the bearing notches 9 and into the channels 10 are spur gear pinions which are disposed opposite to and work in the recesses 11 in the bottom of the channels 10. Slidably mounted in the channels 10 and having an operative engagement with the pinions 12 are rack bars 13 the teeth 14 of which are formed at an angle across the inner sides of the bars so that these teeth will come into proper engagement with the teeth on the pinions 12 for revolving the latter when the track bars are shifted back and forth in the channels 10. The pinions 12 when thus turned by the rack bars 13 will turn or rock the shafts of the shutters in one direction or the other thus swinging the shutters to open or closed positions in the spaces between the slats and thereby controlling the passage of the air through said spaces.

The rack bars 13 may be slidably secured in the channels 10 in any suitable manner

and are here shown as being held in place by cover plates 14 arranged in the outer portion of the channels and having their inner ends inserted in recesses 15 formed in the inner ends of the channels 10. The cover plates 14 are held in place near their outer ends by short cleats 16 which are secured to the edges of the bars 3 on opposite sides of the channels 10 therein, by screws or other suitable fastening devices as shown. On the outer ends of the rack bars 13 are formed outwardly projecting bar operating lugs 17 with which the thumb or finger may be engaged for retracting or projecting the rack bars in the channels 10 in the manner described.

By constructing and arranging my improved ventilator in the manner described it will be seen that the shutters in the various triangular compartments or spaces of the ventilator may be operated independently to open and close the air spaces of any of the compartments, thus discharging the air in the desired direction from the center of the ventilator.

By constructing the slats as herein shown and described to form air deflecting surfaces the air will be more effectually distributed or diffused into the room when all of the shutters are open, than would be possible if the passages between the slats of the ventilator were made straight or directly in line with the ventilator.

From the foregoing description taken in connection with the accompanying drawings, the construction and operation of the invention will be readily understood without requiring a more extended explanation.

Various changes in the form, proportion, and the minor details of construction may be resorted to without departing from the principle or sacrificing any of the advantages of the invention as claimed.

Having thus described my invention, what I claim is;

In a ventilator, a frame, including divergent side bars, provided with longitudinal channels, a plurality of shutters having stub shafts at the ends thereof mounted for oscillation in the diverging side bars of the frame, pinions mounted on the ends of certain stub shafts of said shutters and disposed within the channel of one of said side bars, and a rack bar slidably mounted in the channel of the last mentioned side bar having inclined teeth to mesh with the teeth of said pinions whereby to actuate the shutters upon the movement of said rack bar.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

JOHN W. LENLING.

Witnesses:
HERBERT W. CASSEL,
CLAUDE E. RAGELS.