J. W. PHEILS.

VENTILATING REGISTER.

APPLICATION FILED OCT. 16, 1908.

955,991.

Patented Apr. 26, 1910.

2 SHEETS—SHEET 1.

Fig. 1.

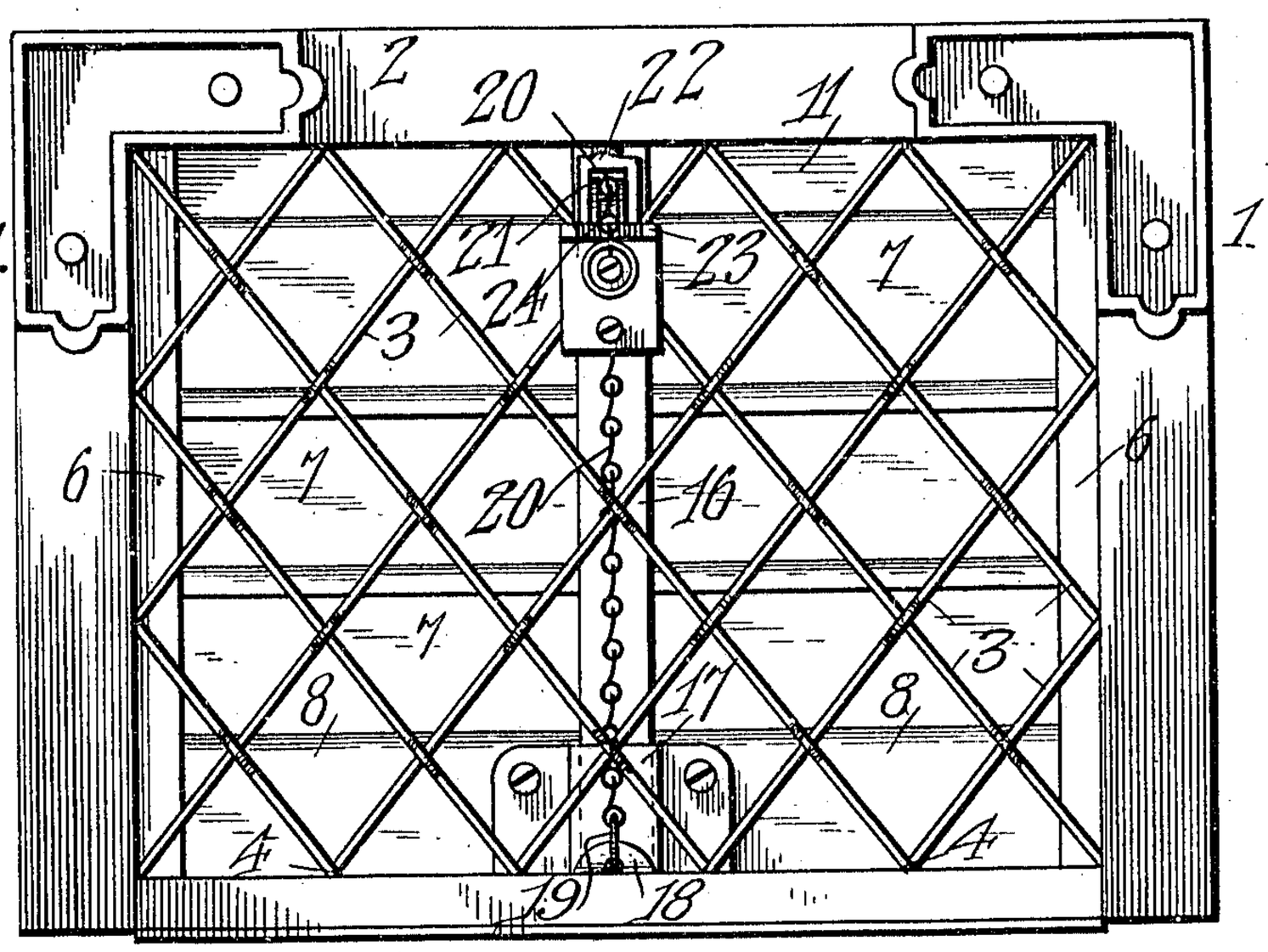
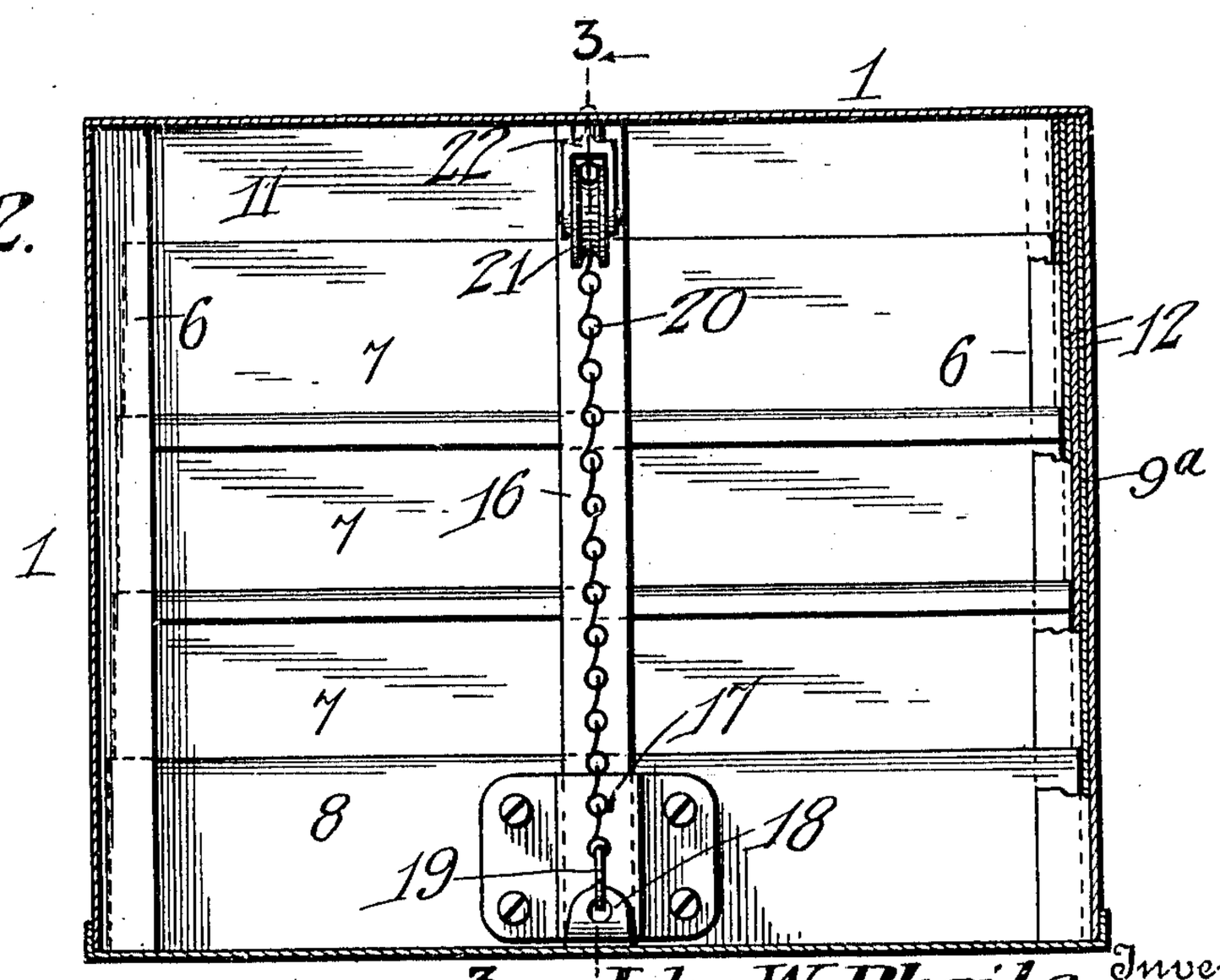


Fig. 2.



Witnesses

Jas. E. McCathran

H. J. Riley

Inventor

John W. Pheils,

By E. G. Siggers

Attorney

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2 SHEETS—SHEET 2.

Fig. 3.

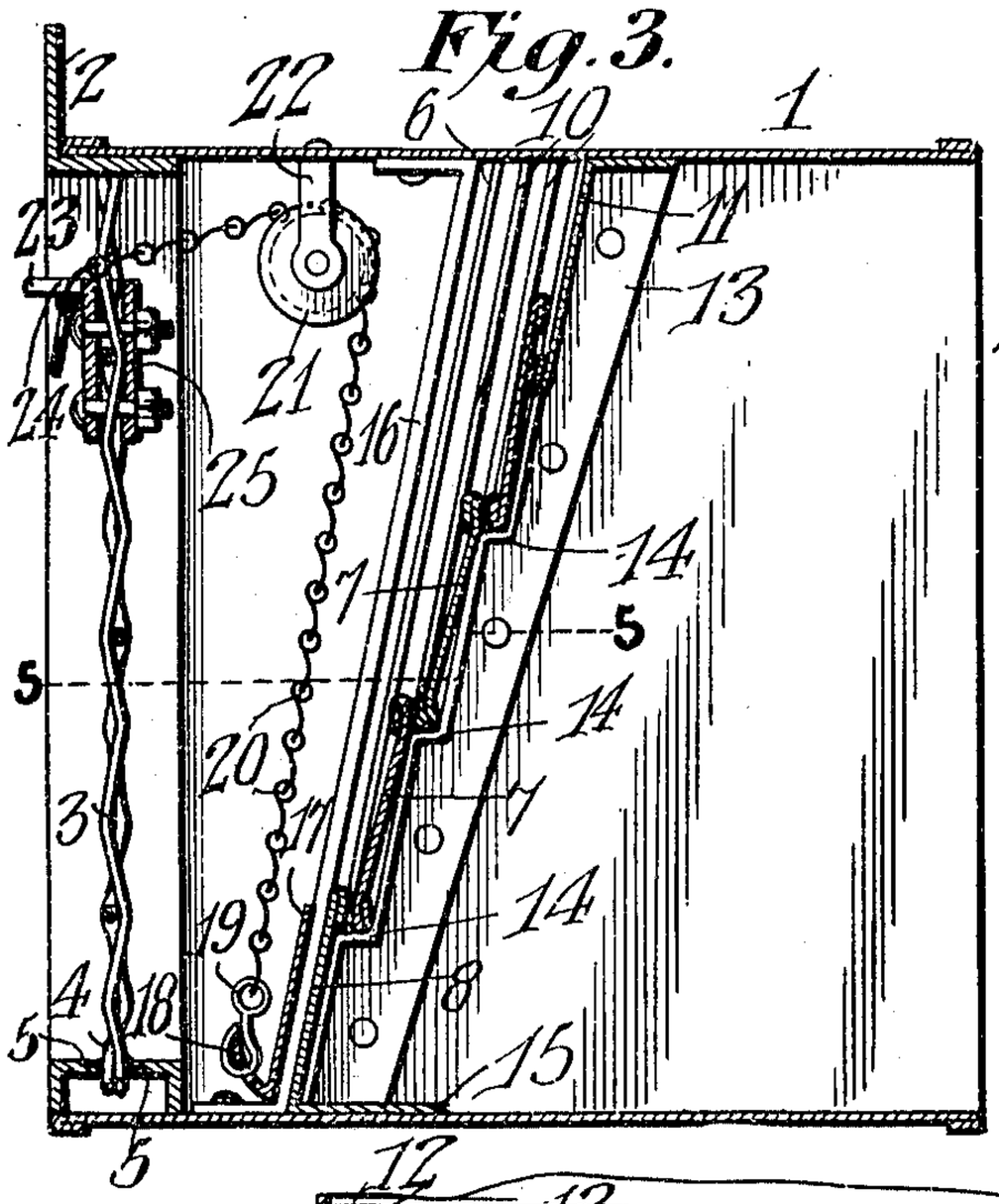


Fig. 4.

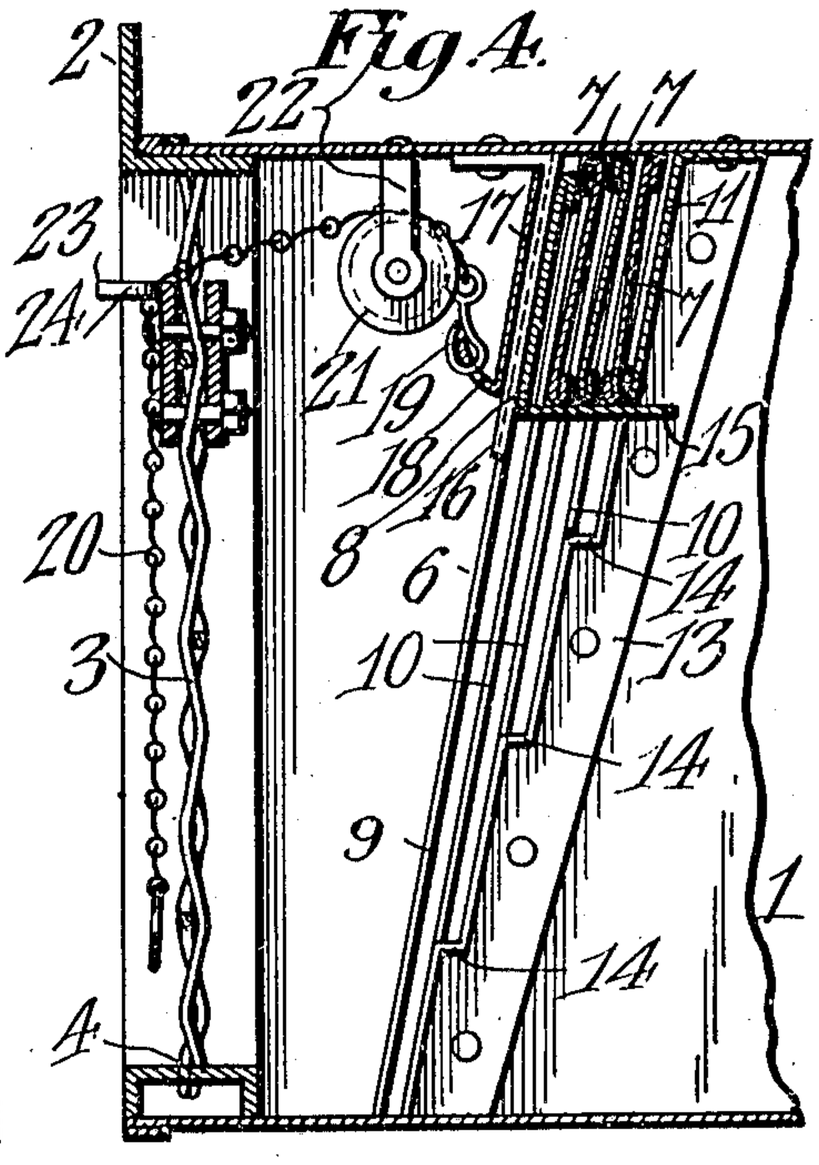


Fig. 5.

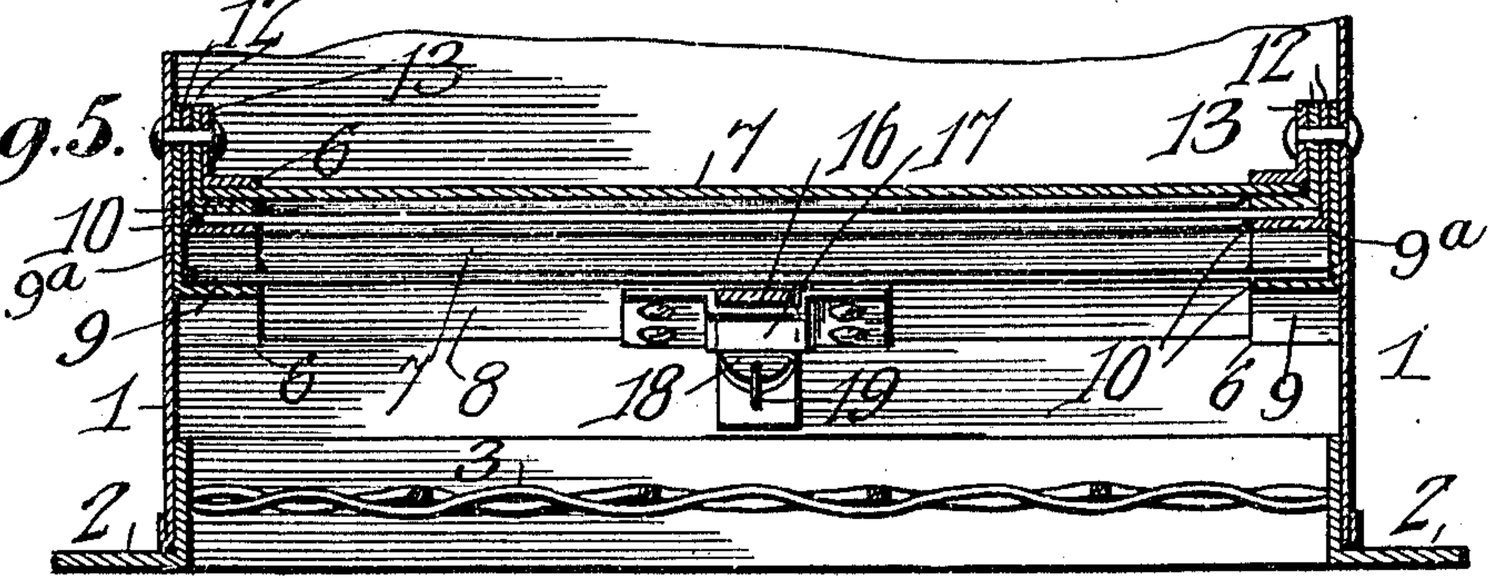
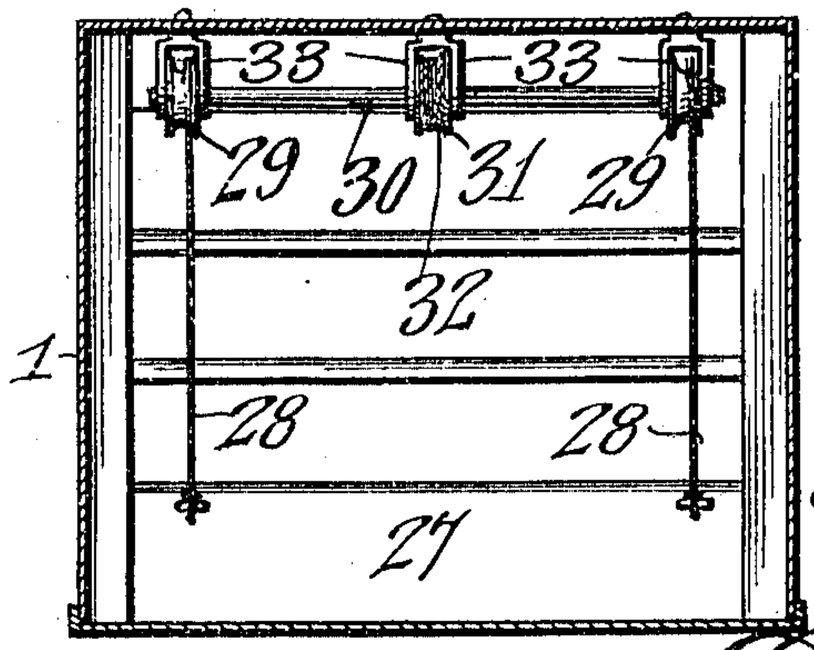


Fig. 6.



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John W. Pheils
Inventor

By E. G. Siggers
Attorney

UNITED STATES PATENT OFFICE.

JOHN WEBSTER PHEILS, OF TOLEDO, OHIO.

VENTILATING-REGISTER.

955,991. Specification of Letters Patent. Patented Apr. 26, 1910.

Application filed October 16, 1908. Serial No. 458,097.

To all whom it may concern:

Be it known that I, JOHN W. PHEILS, a citizen of the United States, residing at Toledo, in the county of Lucas and State of Ohio, have invented a new and useful Ventilating-Register, of which the following is a specification.

The invention relates to improvements in ventilating registers.

The object of the present invention is to improve the construction of ventilating registers, and to provide a simple, inexpensive and efficient one, designed for use in school rooms, club rooms, churches and various other public places and elsewhere, and capable of taking the cold and foul air from the room at the bottom thereof next to the floor, whereby the room is maintained at an even temperature.

With these and other objects in view, the invention consists in the construction and novel combination of parts hereinafter fully described, illustrated in the accompanying drawings, and pointed out in the claims hereto appended; it being understood that various changes in the form, proportion, size and minor details of construction, within the scope of the claims, may be resorted to without departing from the spirit or sacrificing any of the advantages of the invention.

In the drawings:—Figure 1 is a front elevation of a ventilating register, constructed in accordance with this invention and shown closed. Fig. 2 is a transverse sectional view of the same. Fig. 3 is a vertical sectional view on the line 3—3 of Fig. 2. Fig. 4 is a similar view, the ventilating register being open. Fig. 5 is a horizontal sectional view, taken on the line 5—5 of Fig. 3. Fig. 6 is a transverse sectional view, illustrating a modification of the invention.

Like numerals of reference designate corresponding parts in all the figures of the drawings.

1 designates a substantially rectangular casing, composed of top, bottom and side walls and preferably provided at the front with a rectangular frame 2. The casing is designed to be constructed of sheet metal, or other suitable material, and the rectangular frame, which preferably consists of a casting supports an open work front or screen 3, constructed of heavy woven wire, or other suitable material, the terminals 4 of the wires being secured in openings 5 of the rectangular frame. The rectangular frame presents an ornamental appearance, and the wires of the front are preferably crimped for a similar purpose.

The sides of the casing are provided at their inner faces with a series of inclined guides 6, receiving transversely disposed slats 7 and 8 and gradually decreasing in length from the front to the back, the guides or ways being closed at their lower ends for supporting the slats in their closed position at different elevations. The inclined guides are formed by a front bar or strip 9, a series of intermediate bars or strips 10 and a rear bar or strip 11, arranged in spaced relation. The front bar or strip 9 extends from the top to the bottom of the casing, and it is provided with an attaching flange 9^a, secured to the sides of the casing. The intermediate bars or strips, which are provided at their outer side edges with attaching flanges 12, extend downward from the top of the casing and gradually decrease in length from front to back. The flanges 12 are secured to the side walls of the casing by the fastening devices, which attach the flanges 9^a to the casing, as clearly illustrated in Fig. 5 of the drawings. The rear inclined bar or strip 11, which is provided with an attaching flange 13, is angularly bent at the lower ends of the intermediate bar or strip and coöperates with the same to form the lower portions of the intermediate or rear guides or openings, and the angular bends 14 form the bottoms of the intermediate and rear guides or ways and support the slats 7 in their closed position. The slats, which consist of plain flat metallic strips, are set at an inclination and thereby fit against one another and form almost an air tight connection when the ventilator is closed. The edges of the slats are off-set sufficiently to enable them to extend beyond their respective ways and contact with each other when in their closed position.

The slats are slidable upwardly to open the ventilator, and the slats 7 are lifted by a flange or portion 15, extending rearwardly from the lower edge of the bottom slat 8 and operating between the opposite guides or ways and adapted, when the bottom slat is raised to successively engage the slats 7 and carry the same from the closed position, illustrated in Fig. 3 of the drawings to the open position shown in Fig. 4. By this con-

struction the bottom slat is adapted to lift any number of slats, and the ventilating register may be constructed of any desired size and may be equipped with any number of slats without necessitating any alteration in the structure of the guiding and lifting means other than providing the proper number of guides or ways. In order to insure an even and perfect raising and lowering of the slats, the ventilator is equipped with an inclined guide 16, consisting of a bar arranged in parallelism with the guides and having its ends bent at an angle and secured to the top and bottom of the casing. The intermediate guide receives a slidable loop 17 consisting of an angularly bent plate, having its terminals secured to the bottom slat at the front face thereof. The loop is also provided with a lip 18, projecting from the lower edge of the loop and extending upward therefrom. The lip is perforated for the reception of a hook-shaped link 19, carried by the lower end of a chain 20. The chain 20 extends upward from the bottom slat and passes over a guide pulley 21, which is mounted in a hanger 22. The upper portion of the chain extends through the open front of the ventilator and is engaged by a catch 23, consisting of a substantially L-shaped plate clamped to the open front 3 and having a projecting portion provided with a V-shaped notch 24. The chain, which is equipped at its free end with a ring, or other suitable operating means, is adapted to be engaged with the notch of the catch or keeper. The catch or keeper is clipped or clamped to the open front by means of a rear plate 25 and a pair of bolts 26, piercing the catch or keeper and the rear clip plate 25. The chain, or other flexible connection for operating the slats is adapted to be drawn outward to raise the slats, and the links of the chain through their engagement with the keeper are adapted to support the slats in any adjustment thereof.

In Fig. 6 of the drawings is illustrated a modification in which the central guide is eliminated, the bottom slat 27 being connected to the lower end of a pair of flexible connections 28, consisting of braid or twisted wire, but chains, or any other suitable means may be employed. The upper portions of the flexible connections are attached to outer pulleys 29 of a horizontal shaft 30, which is also provided with an intermediate pulley 31, around which is wound a flexible connection 32. The shaft is supported by suitable hangers 33, and the operating flexible connection 32 is adapted to secure the slats in their adjustment. The slats, shown in Fig. 6, are constructed and guided similar to those heretofore described. The pulleys are grooved and are adapted to have the wire cords, or other flexible connections wound around them. The flexible connection 32 of the intermediate pulley is wound in the opposite direction from the side flexible connections, so that when the wire or cord is drawn outward, it will be unwound from the central pulley and will rotate the shaft and wind up the side cords, and when the slats are lowered the side cords will unwind from the side pulleys and will rewind the operating cord on the central pulley. The free portion of the flexible connection 32 of the intermediate pulley is designed to be fastened at the front of the ventilating register by means of a catch or keeper, having a V-shaped notch similar to the catch or keeper heretofore described.

Although the guides or ways for the slats are shown inclined in the accompanying drawings, yet it will be readily understood that they may be arranged perpendicular, and the angle or inclination may be changed to correspond to the size and weight of the slats to secure the desired freedom of movement in operation and also to effect a proper closure of the register by causing the latches when closed to lie against one another.

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

1. A register of the class described including a casing provided with opposite series of guides or ways successively decreased in length, a plurality of plain flat slats operating in the guides or ways, said guides or ways being set at an inclination and the edges of the slats being off-set sufficiently to enable them to extend beyond their respective ways and engage each other, whereby the slats when closed will rest against one another to form a tight closure, and means for operating the slats.

2. A register of the class described including a casing provided with opposite inclined ways, a plurality of slats operating in the said ways, an intermediate inclined guide slidably receiving the bottom slat, means carried by the bottom slat for successively engaging the other slats, and operating mechanism connected with the bottom slat for raising and lowering the same.

3. A register of the class described including a casing provided with opposite inclined ways, a plurality of slats operating in the said ways, an intermediate inclined guide, a loop mounted on the bottom slat and receiving the guide, means carried by the bottom slat for engaging the other slats, and operating mechanism connected with the loop for raising and lowering the slats.

4. A register of the class described including a casing provided with opposite ways, a plurality of slats operating in the ways and supported at different elevations, means carried by the bottom slat for engaging the

other slats, an intermediate guide, a loop also carried by the bottom slat and slidable on the intermediate guide and provided with a lip, and operating mechanism connected with the said lip for raising and lowering the slats.

5. A register of the class described including a casing having a screen at the front and provided at opposite sides with ways, a plurality of slats operating at their ends in said ways, a pulley arranged within the casing at the top thereof between the screen and the slats, and a chain connected with the bottom slat and extending upward to the pulley and passing over the same outward to the screen.

6. The combination of a casing having a screen at the front, a series of separate ways arranged in different planes at opposite sides of the casing, separate slats arranged at their ends in each of the said ways, the bottom slat being provided with means for successively engaging each of the other slats in the upward movement of the bottom slat, a pulley located at the top of the casing between the screen and the slats, and a chain connected to the bottom slat and extending upward therefrom to the pulley and passing over the same and outward through the screen.

7. The combination of a casing having a screen at the front, a series of separate inclined ways arranged in different inclined planes and at opposite sides of the casing and having stops at their lower ends, separate slats arranged at their ends in each of the said ways, the bottom slat having a flange which successively engages each of the other slats in the upward movement of the said bottom slat, a pulley located at the top of the casing between the screen and the slats, and a chain connected to the bottom slat and extending upward therefrom and passing over the pulley and out through the screen.

In testimony, that I claim the foregoing as my own, I have hereto affixed my signature in the presence of two witnesses.

JOHN WEBSTER PHEILS.

Witnesses:

W. T. HUNTSMAN,

M. A. RITCHIE.