

No. 625,983.

Patented May 30, 1899.

H. PANNILL.

DRAFT REGULATOR FOR OPEN FIREPLACES.

(Application filed Dec. 24, 1898.)

(No Model.)

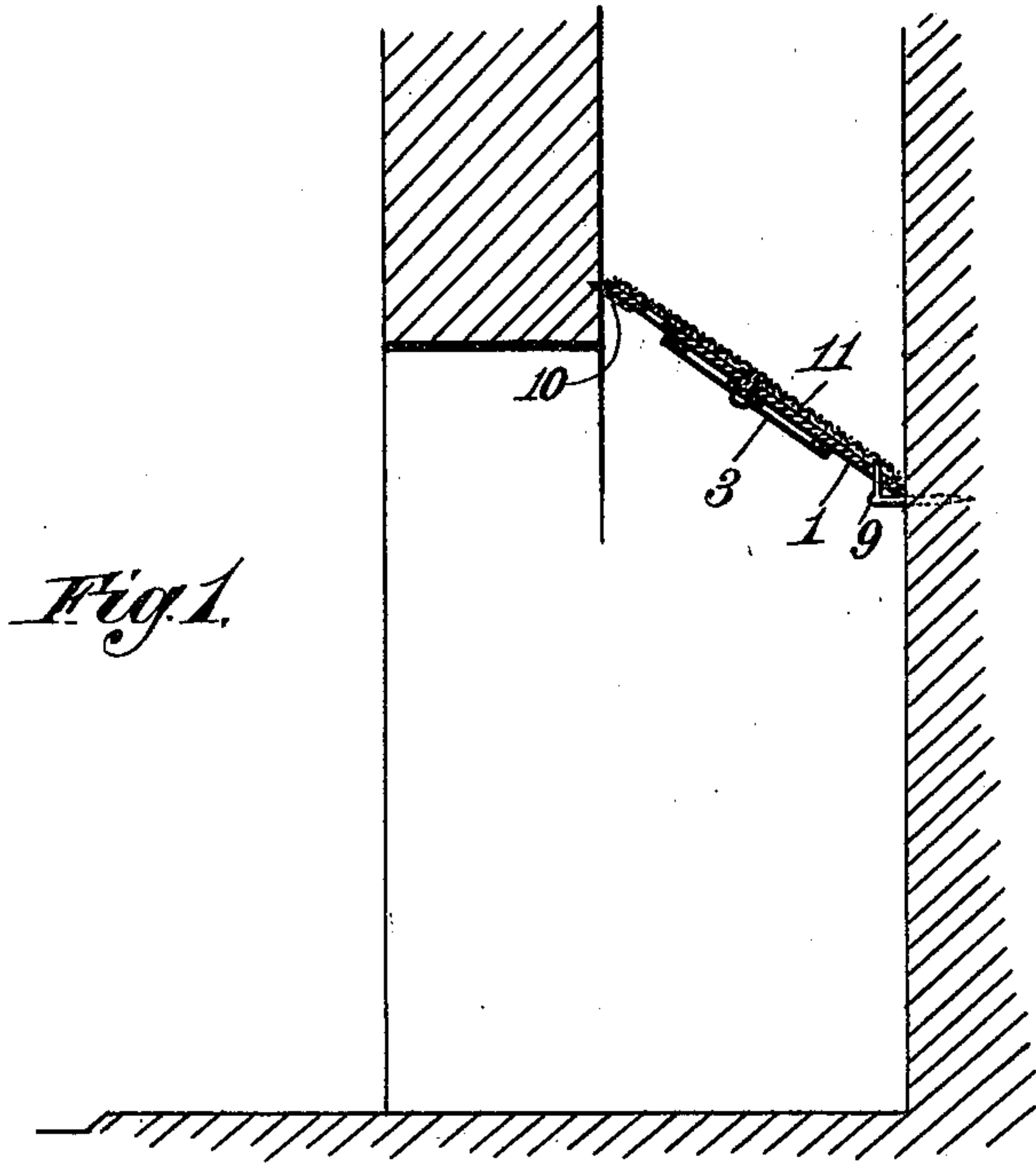


Fig. 1.

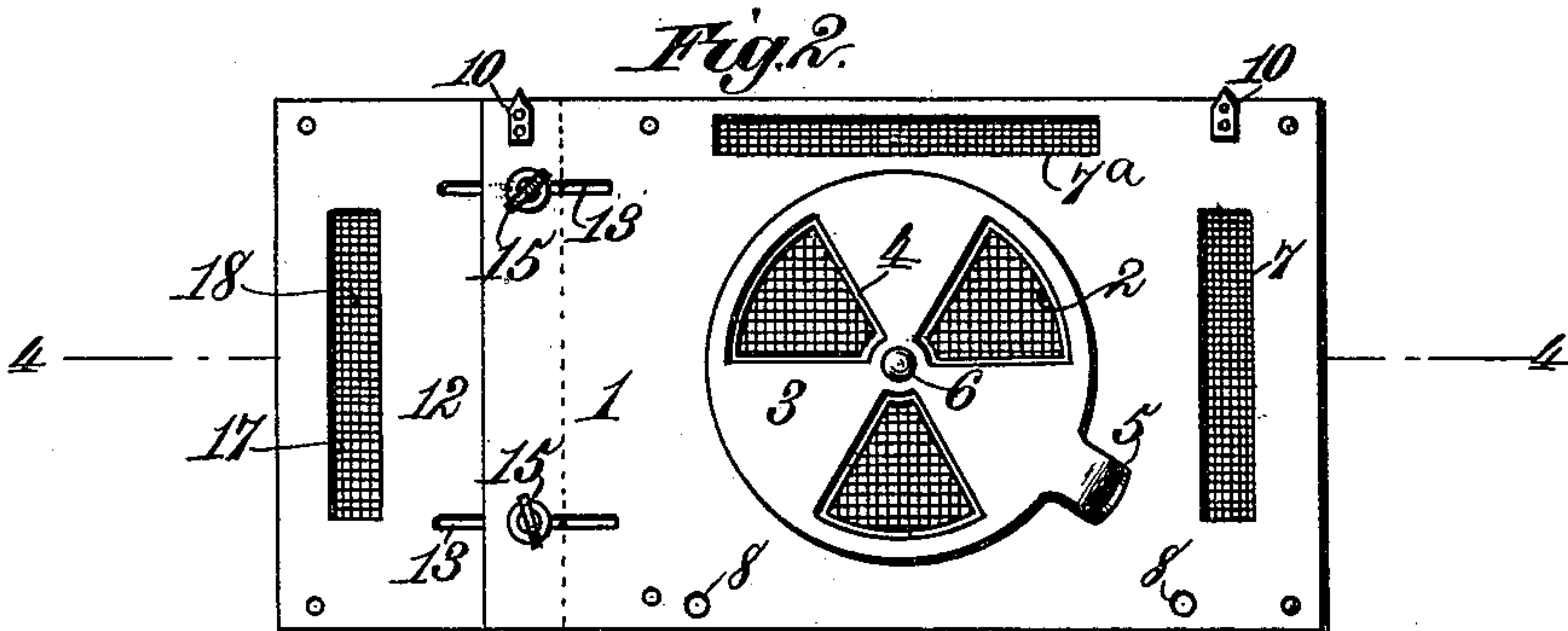


Fig. 2.

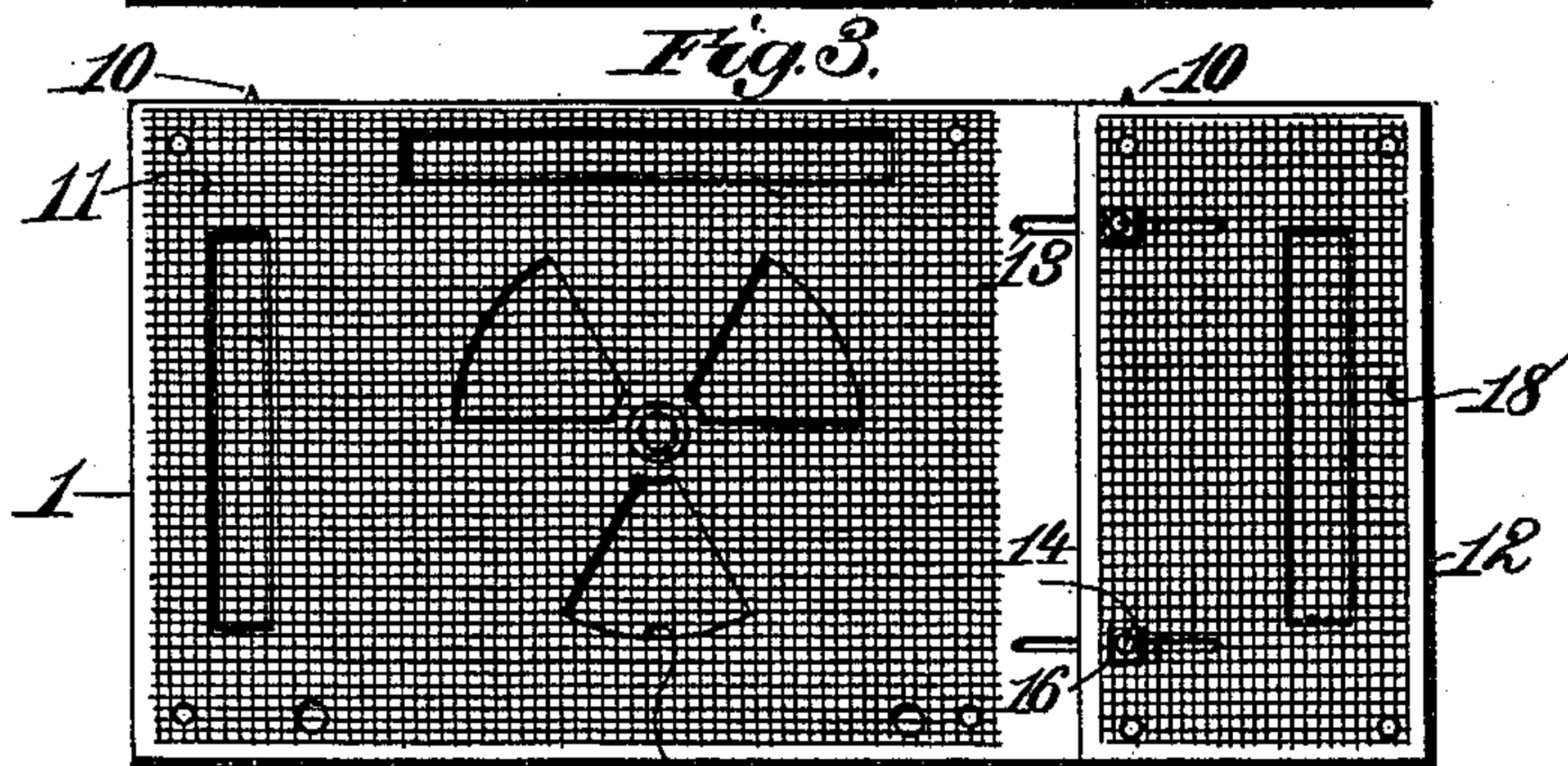


Fig. 3.



Fig. 4.

Witnesses:
Robert Emmett
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Inventor:
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UNITED STATES PATENT OFFICE.

HENRY PANNILL, OF PETERSBURG, VIRGINIA, ASSIGNOR, BY DIRECT AND MESNE ASSIGNMENTS, OF TWO-THIRDS TO JOHN MOYLER AND BENJAMIN MILNES, OF SAME PLACE.

DRAFT-REGULATOR FOR OPEN FIREPLACES.

SPECIFICATION forming part of Letters Patent No. 625,983, dated May 30, 1899.

Application filed December 24, 1898. Serial No. 700,249. (No model.)

To all whom it may concern:

Be it known that I, HENRY PANNILL, a citizen of the United, residing at Petersburg, in the county of Dinwiddie and State of Virginia, have invented new and useful Improvements in Draft-Regulators for Open Fireplaces, of which the following is a specification.

This invention relates to a draft-regulator for open fireplaces; and it has for its object to provide an improved device that will utilize the upward and downward currents of air in the chimney to cause a draft to sweep over and across the flames, thus assisting the consumption of the gases and products of combustion and aiding a full utilization of the heat.

To this end my invention consists in the features and in the construction and arrangement of parts hereinafter described and particularly pointed out in the claims following the description, reference being had to the accompanying drawings, forming a part of this specification, wherein—

Figure 1 is a vertical sectional view of a fireplace, showing my improved draft-regulator in place. Fig. 2 is a front view of the regulator. Fig. 3 is a rear view of the same, and Fig. 4 is a longitudinal central sectional view thereof.

Referring to the drawings, the numeral 1 indicates a metallic plate rectangular in shape and somewhat shorter than the width of the smallest fireplace usually built. Formed centrally in the plate is a damper to permit a free passage of the smoke and the like and to cause a strong upward draft in starting the fire. This may be of any suitable construction, but preferably is formed in the following manner: In the plate 1 is formed a plurality of segment-shaped apertures 2, radially disposed at equal distances apart about a common center, and pivoted to the front under side of said plate centrally between the inner ends of said apertures is a rotatable disk 3, provided with a plurality of apertures 4, similar in size, shape, and arrangement to the apertures 2 in the plate. The disk 3 is provided at one edge with a handle 5, by means of which it may be turned about its

pivot 6. By turning the disk the apertures 2 in the plate may be closed to a greater or less extent, or by turning the disk into such position that the apertures 2 and 4 register with each other the former are entirely opened, while by turning the disk so that the solid parts thereof overlies the apertures 2 the latter will be obviously closed, which is the normal position of the damper. Formed in the plate near its outer edge is a narrow vertical slot 7, which is at all times open, and a similar horizontal slot 7^a is formed in the plate near its upper edge and forms an escape for the smoke and gases of the chimney. In the bottom edge portion of the plate are formed perforations 8, which are engaged by hooks 9, that are driven into the fireplace-back at suitable points, the front upper edge of the plate resting against the front upper wall of the fireplace. The upper edge of the plate is preferably provided with spurs or pointed prongs 10, which when the plate is set in position in the fireplace take into the wall thereof and hold the plate firmly in position. To the back of the plate may be riveted or otherwise suitably attached a reticulated metallic fabric 11, such as wire-netting, that covers the apertures 2 and 7.

The plate 1 is provided at one end with an adjustable extension 12. As shown, the plate 12 is the same width as the plate 1, and each of said plates has formed therein elongated slots 13, the slots in one plate registering with those in the other plate. Through the slots 13 pass bolts 14, provided at their outer ends with thumb-pieces or heads 15 and having screwed over their inner ends nuts 16. By loosening the bolts the plates 1 and 12 may be moved endwise one upon the other in an obvious manner to increase or diminish the length of the device to accommodate it to fireplaces of different widths. The plate 12 is provided near its outer edge with a vertical slot 17 and may have attached to its rear side a wire-netting 18, that covers said slot.

In placing the draft-regulator in position in the fireplace the hooks 9 are driven into the back wall at the proper points and the perforated portions 8 of the plate 1 are slipped

over the hooks. The upper edge of the plate is then let fall against the upper front wall of the fireplace, the spurs 10 taking into the wall and securely holding the plate in place. The plate is thus supported in an inclined position, as shown in Fig. 1 of the drawings. The extensible plate 12 is then drawn out until it abuts the adjacent side of the fireplace, thus completely filling the escape-flue of the latter.

When the fire is made up or started, the disk 3 is turned to fully uncover or open the draft-apertures 2. These apertures permit a free and unobstructed draft through the draft-regulator and up the chimney. When the combustion has been fully established, the damper-disk 3 is turned to partially cover the apertures 2, and when the fuel has burned to such an extent that comparatively little smoke and products of combustion are thrown off by the fire then the disk is turned to completely close the apertures 2.

One side or the other of the chimney is usually colder than the opposite side, according to the direction of the wind or to which side is the most exposed, and hence there will be a downward current of cold air on the colder side of the chimney. This downward current of air will pass through one of the apertures at one side of the regulator—as 7, for example—a portion of it commingling with the products of combustion and aiding in the consumption of the latter, while the remainder, mixed to a greater or less extent with the fire-gases, will sweep across the fire and pass up through the aperture 17 at the opposite end and pass up the warmer side of the chimney. The draft thus caused to sweep across the fire fans the flames and at the same time feeds oxygen to the gases escaping from the fuel, and thus aids in causing their consumption. The larger proportion of smoke and products of combustion arising from the fire escape up through the central elongated aperture 7^a and pass off up through the chimney. The reverse currents passing through the side apertures 7 and 17 maintain a constant draft over the fuel, causing the latter to burn steadily and also causing the escaping gases to be consumed, thus utilizing the fuel to its utmost. The inclined position of the regulator throws the heat out into the room in a manner to cause it to heat the room to the greatest advantage. The wire-netting at the back of the plates operates to prevent soot and the like from falling down the chimney onto the floor.

I have shown the plate 1 provided with an extensible plate at one end only; but it will be manifest that an extensible plate may be arranged at each end of the plate 1, and in such case the apertures 7 and 17 will be formed in the extensible plates respectively.

Having described my invention, what I claim is—

1. A draft-regulator for fireplaces comprising a plate constructed to be arranged in a fireplace-flue in an inclined position and provided at its opposite end edge portions with elongated apertures and a similar elongated aperture in its upper edge portion intermediate the end apertures, the intermediate aperture operating to carry off the smoke and products of combustion and the end apertures operating to cause a current of air to flow across and over the fire, substantially as described.

2. A draft-regulator for fireplaces comprising a plate constructed to be arranged in a fireplace-flue in an inclined position and provided at its opposite edge portions with elongated apertures and with a similar elongated aperture in its upper edge portion intermediate the end apertures, the intermediate aperture operating to carry off the smoke and products of combustion and the end apertures operating to cause a current of air to flow across and over the fire, and a normally-closed damper arranged centrally in the plate, substantially as described, and for the purpose specified.

3. A draft-regulator for fireplaces comprising a plate constructed to be arranged in a fireplace-flue in an inclined position and provided at its opposite edge portions with elongated apertures and with a similar elongated aperture in its upper edge portion intermediate the end apertures and at a right angle thereto, the intermediate aperture operating to carry off the smoke and products of combustion and the end apertures operating to cause a current of air to flow across and over the fire, and a reticulated metallic fabric attached to the plate over said apertures, substantially as described and for the purpose specified.

4. A draft-regulator for fireplaces comprising an extensible plate constructed to be arranged in a fireplace-flue in an inclined position and provided at its opposite edge portions with elongated apertures and with a similar elongated aperture in its upper edge portion intermediate the end apertures and at a right angle thereto, the intermediate aperture operating to carry off the smoke and products of combustion and the end apertures operating to cause a current of air to flow across and over the fire, substantially as described and for the purpose specified.

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

HENRY PANNILL.

Witnesses:

N. S. BROWN,
R. O. EGERTON.