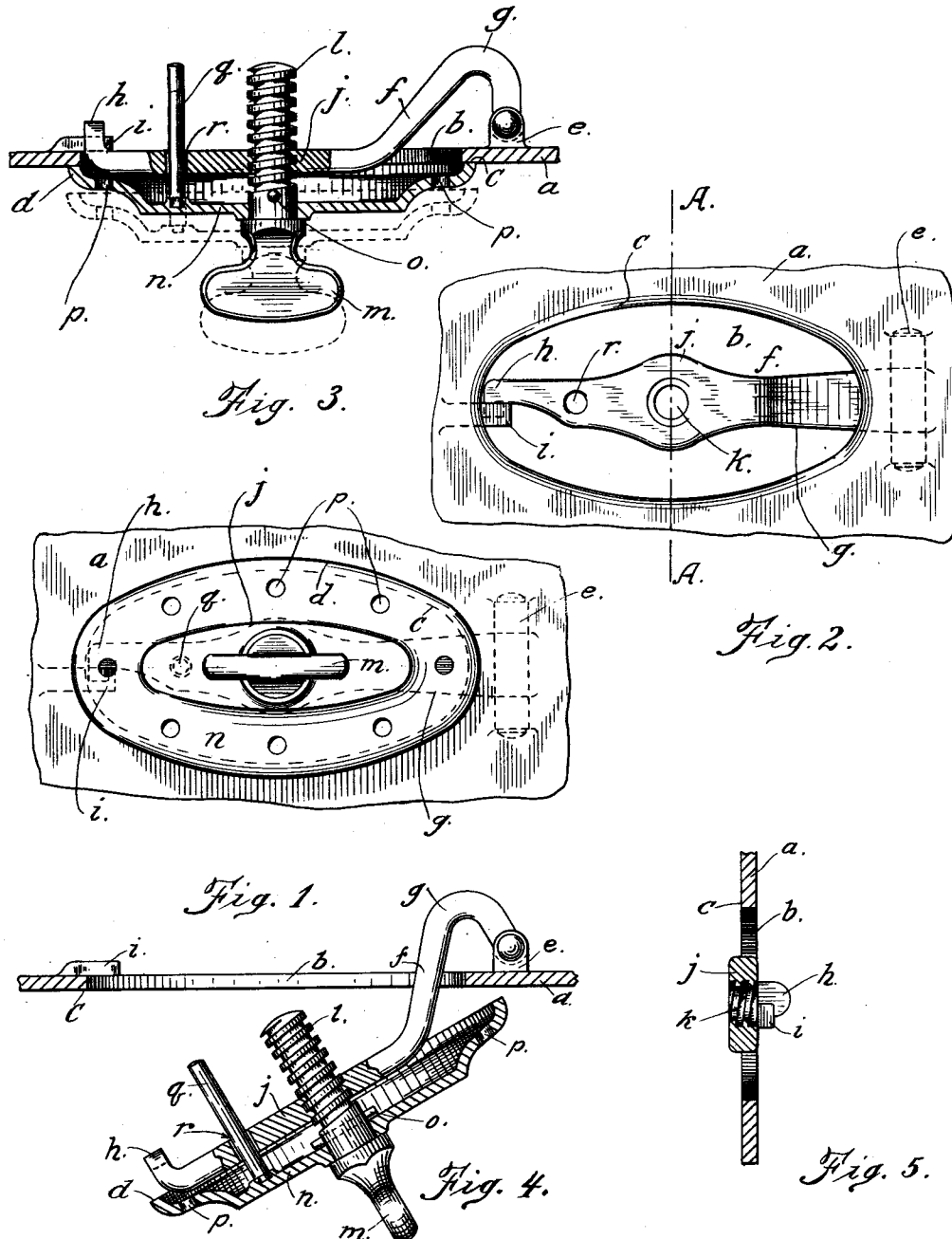


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GATE FOR DRAFT CHAMBERS OF FURNACES.
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1,058,025.

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WITNESSES:

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GATE FOR DRAFT-CHAMBERS OF FURNACES.

1,058,025.

Specification of Letters Patent.

Patented Apr. 1, 1913.

Original application filed July 21, 1910, Serial No. 573,109. Divided and this application filed August 20, 1910. Serial No. 578,254.

To all whom it may concern:

Be it known that I, MARY A. MALLOY, a citizen of the United States, and a resident of Portland, county of Multnomah, State of Oregon, have invented a new and useful Improvement in Gates for Draft-Chambers of Furnaces, of which the following is a specification.

My present invention relates to the draft chamber and the door therefor of a furnace of the type described in my co-pending application for Letters Patent for improvement in furnaces, filed July 21, 1910, Serial No. 573,109. By reference to said application it will be noted that when the gate or damper of the draft chamber is closed, a continuous minimum volume of air must be admitted through the gate to said draft chamber.

The object of my invention is to provide a gate of simple and inexpensive construction, and one which will be convenient to operate.

I attain this object by the devices illustrated in the accompanying drawings, in which:

Figure 1 represents a portion of the wall of the draft chamber located below the grate, in the type of furnace referred to, said wall being provided with an air aperture controlled by a gate embodying my present invention; Fig. 2 shows the same portion of the wall, and the arm hinge of the gate hinged thereto, the gate itself being omitted; Fig. 3 is a central plan section of the same portion of the wall, illustrating the construction of the hinge and of the gate supported by such hinge, the dotted lines showing the permissible in and out movement of the gate on its hinge arm while the latter remains; Fig. 4 is another section like Fig. 3, but in this view the gate is shown swung open on its hinge; and Fig. 5 is a perpendicular section taken on a line A—A of Fig. 2.

The wall, *a*, of the draft chamber of the furnace, located below the grate, is provided with a draft-inlet, *b*, the rim, *c*, of which is understood to have a ground face against which the ground rim, *d*, of the gate, *n*, abuts when closed. On the interior of the casing, *a*, is provided a hinge-lug, *e*, in which is hinged an arm, *f*, bent at *g*, so that the main portion of said arm, *f*, will

be located in and extend across the draft opening, *b*, of the casing, when the gate is closed, substantially as illustrated in Fig. 3, and the free end, *h*, of such arm is adapted to serve as a latch, and to be engaged with a lug, *i*, provided on the interior of the casing, *a*. The center, *j*, of the hinged arm, *f*, is enlarged and provided with a threaded orifice, *k*, in which is threaded a stud-screw, *l*. The stud-screw, *l*, is rotatably secured in an orifice therefor provided in the center of the gate, *n*. It is held in place by a pin, *o*, and the head of said screw projects beyond the exterior of the gate, *n*, and is provided with a knob, *m*, so as to render the manipulation of the screw convenient. The gate, *n*, is provided with a series of rim perforations, *p*, proportioned relatively to the required constant minimum inflow of air, through the grate bars of the combustion chamber, even though the gate, *n*, be tightly shut. The object of this arrangement will be understood by having reference to my said other application for Letters Patent. The gate, *n*, is held against rotation by a pin, *q*, sliding in an orifice, *r*, therefor provided in the arm, *f*.

When a greater inflow of air is desired than the minimum admitted through the perforations, *p*, the gate, *n*, may be adjusted as the circumstances require, by manipulating the screw; and when a still greater inflow of air is desired immediately, then by seizing the knob, *m*, of the screw, *l*, and lifting the arm, *f*, out of its latching engagement, the gate, *n*, may be swung wide open, as illustrated in Fig. 4.

While I have described my invention as particularly designed for use as a gate for the air-inlet of the draft chamber of the type of furnace referred to, I have in mind that it may also be used as a closure for other purposes.

I claim:

1. The combination with a casing provided with an opening, of a gate provided with an orifice or orifices which communicate with the opening, whereby to admit a predetermined continuous volume of air through the opening though the gate be closed against the casing surrounding the opening, means for moving the gate toward or from the opening, said means including a bar pivoted to the casing and a screw

mounted in the gate and threaded in the bar, and a lug on the casing with which the bar coöperates to form a lock, the screw permitting of the gate being adjusted to admit
5 air in the opening to mingle with the air admitted through the orifices.

2. The combination with a casing provided with an opening, of an arm hinged to the inside of the casing adjacent the opening
10 and adapted to be swung outward; means for latching the free end of such arm in place; a gate fitting against the casing adjacent the opening, and a screw rotatably secured in the center thereof and projecting
15 inward, said screw being threaded into said arm, and the rim of said gate provided with an orifice, or orifices, which communicate with the opening whereby to admit a predetermined volume of air through the opening
20 though the gate be closed against the casing surrounding the opening; and means holding the gate against rotation; the screw permitting of the gate being moved from and against the casing when the said gate is
25 latched.

3. The combination with a casing provided with an opening, a lug on the inside of the casing adjacent the opening, a gate formed with a series of openings inside the
30 line of the edge of the walls of the opening in the casing, a latch lever pivoted on the inside of the casing adjacent the opening, the end of said latch having a projection, the latch lever having a central threaded
35 opening and a guide opening, a screw swiveled to the gate and fitting in the threaded opening and adapted to tighten the gate against the casing, the openings in the gate admitting a supply of air through
40 the opening in the casing though said gate be closed; a pin secured to the gate and passing through the guide opening, and a

lug on the inside of the casing with which the projection on the latch lever engages.

4. The combination with a casing provided with an opening, a gate formed with
45 a series of openings inside the line of the edge of the walls of the opening in the casing, a latch lever pivoted on the inside of the casing adjacent the opening and being
50 of such length as to swing through the opening when the gate is opened, said latch lever having a projection at one end to engage with the lug on the inside of the casing, a guide extending from the gate and engaging
55 the latch lever, and a screw swiveled to the gate, said screw engaging a threaded opening formed in the latch lever and adapted to tighten the gate against the casing, the openings in the gate admitting a supply of
60 air through the opening in the casing though said gate be closed.

5. The combination with a casing provided with an opening, of an arm hinged to the casing adjacent the opening and adapted
65 to be swung outward, means for latching the free end of such arm in place, a gate fitting against the casing adjacent the opening, a screw rotatably secured in arm and projecting inwardly, said screw being threaded into
70 said arm, the gate having orifices which communicate with the opening in the casing, whereby to admit a predetermined volume of air through the opening though the gate be closed against the casing surrounding the
75 opening, and means holding the gate against rotation, the screw permitting of the gate being moved from and against the casing when said gate is latched.

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Witnesses:

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