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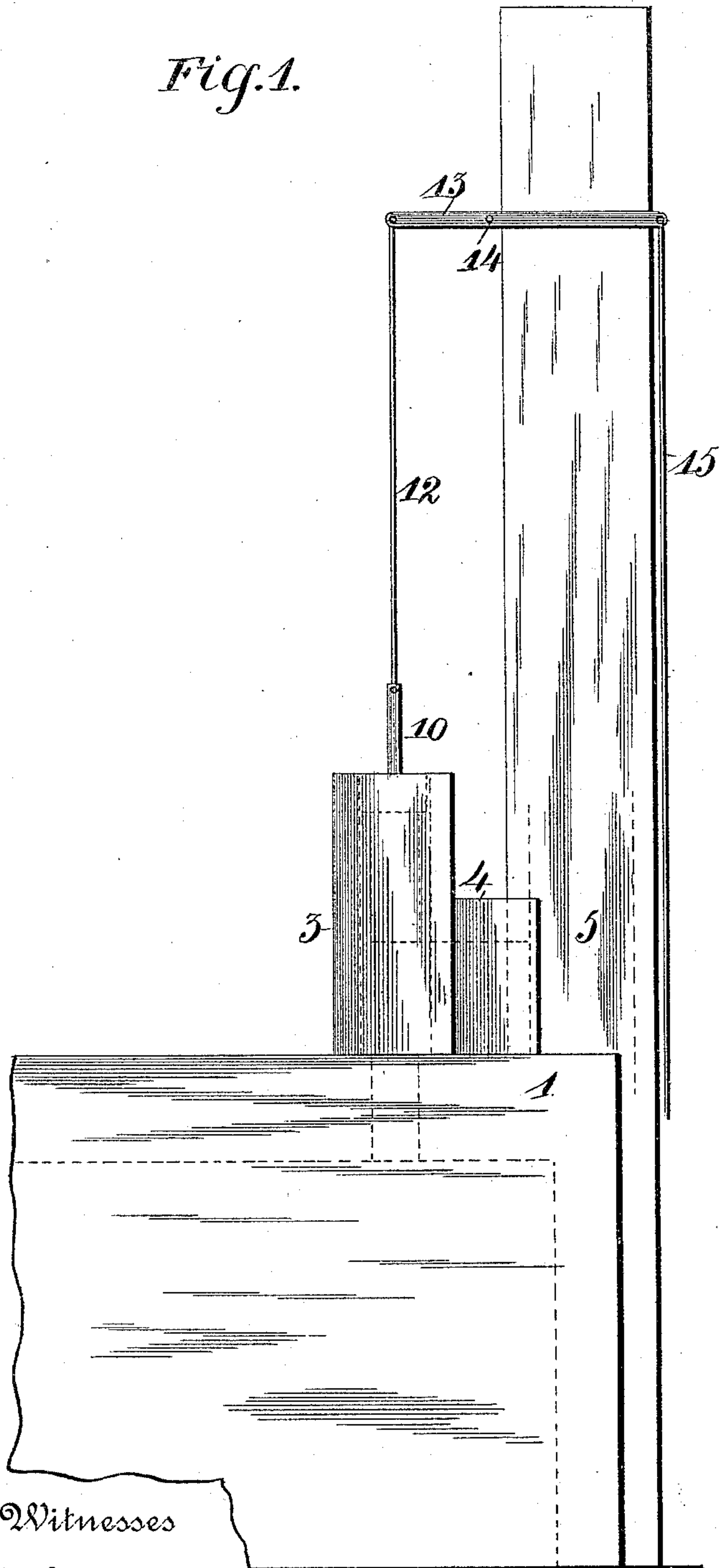
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W. LANYON, Jr., & J. LANYON.  
DAMPER FOR FURNACES.

No. 444,958.

Patented Jan. 20, 1891.

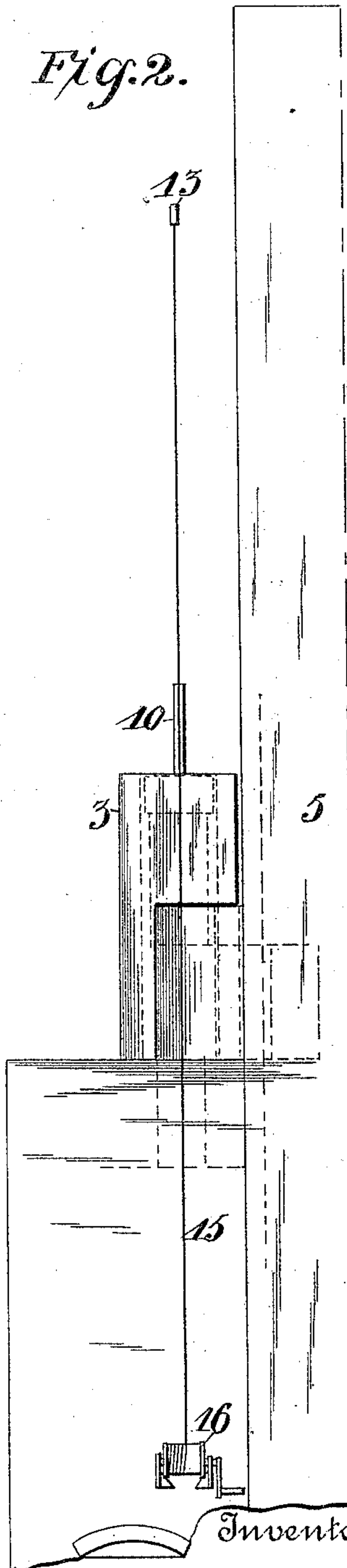
*Fig. 1.*



Witnesses

*E. J. Keller.*  
*L. H. Hertz.*

*Fig. 2.*



Inventors

*William Lanyon Jr.*  
*Josiah Lanyon.*  
By *their* *and* *Attorneys*  
*Higdon & Higdon*

(No Model.)

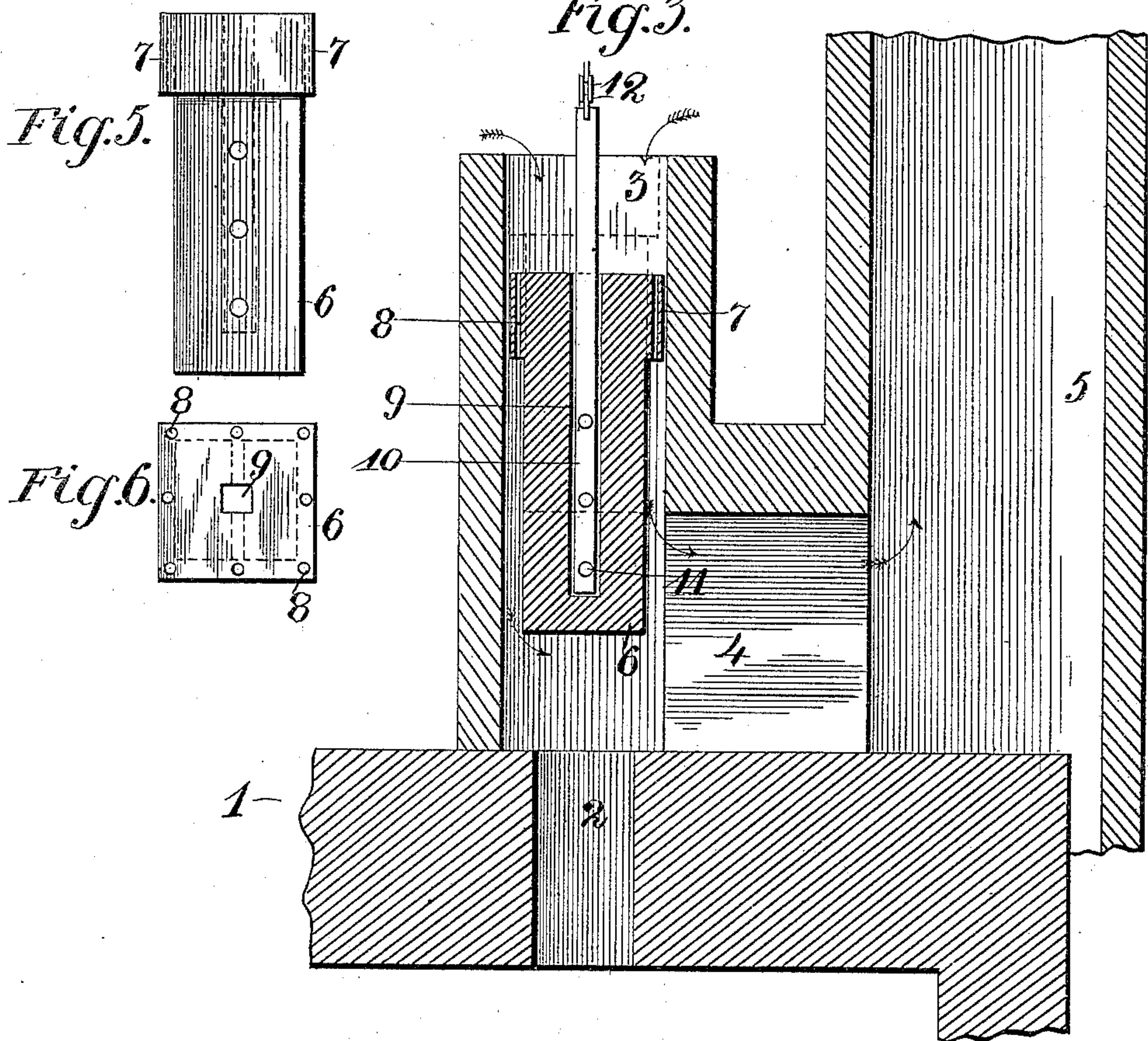
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W. LANYON, Jr., & J. LANYON.

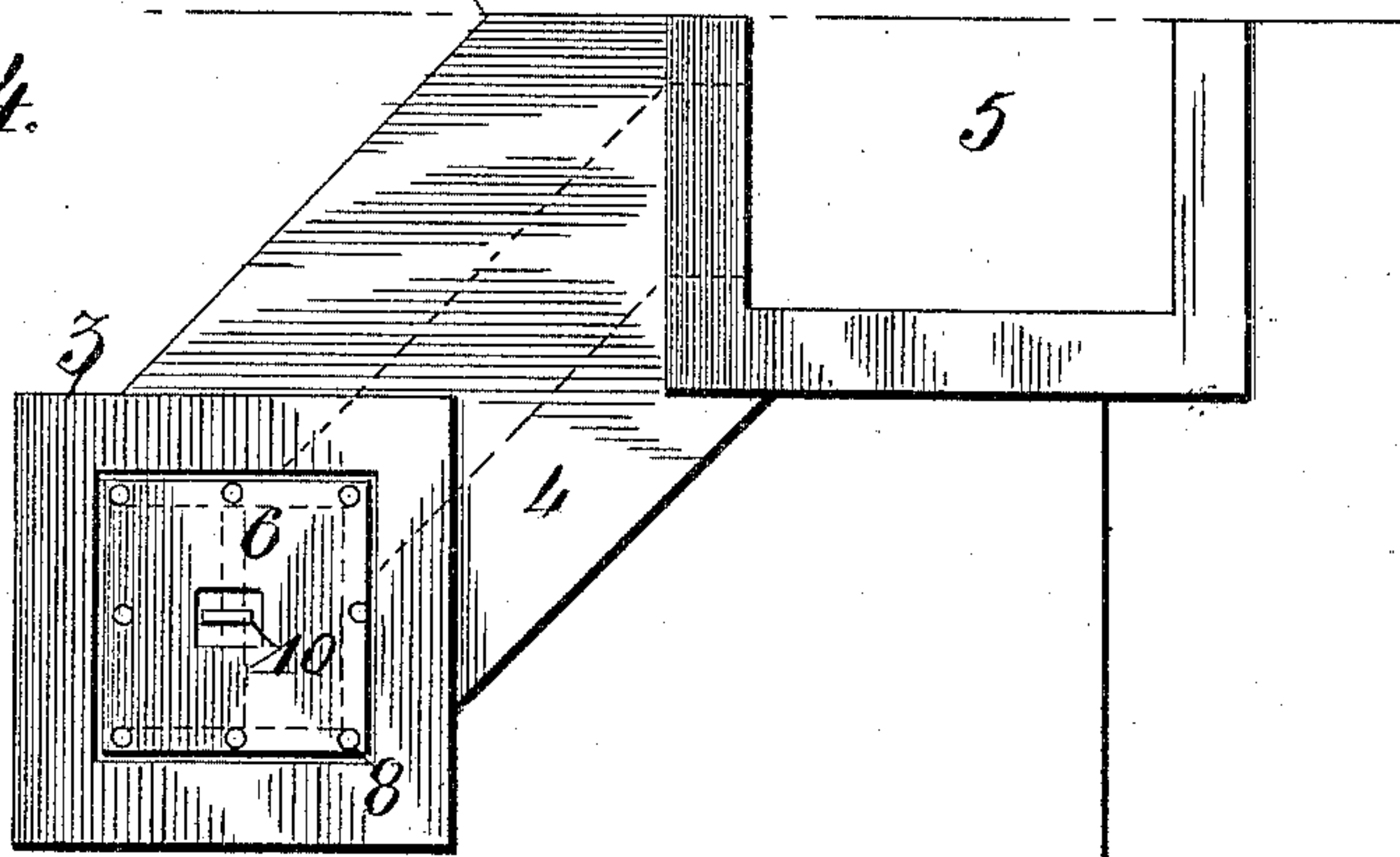
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*Fig. 4.*



Witnesses

*L. J. Keller*  
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Inventors,

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# UNITED STATES PATENT OFFICE.

WILLIAM LANYON, JR., AND JOSIAH LANYON, OF PITTSBURG, KANSAS.

## DAMPER FOR FURNACES.

SPECIFICATION forming part of Letters Patent No. 444,958, dated January 20, 1891.

Application filed June 26, 1890. Serial No. 356,833. (No model.)

*To all whom it may concern:*

Be it known that we, WILLIAM LANYON, Jr., and JOSIAH LANYON, of Pittsburg, in the county of Crawford and State of Kansas, have  
5 invented certain new and useful Improvements in Dampers for Furnaces, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming a part thereof.

10 Our invention relates to an improved damper for furnaces; and it consists in the novel combination and arrangement of parts, as will be hereinafter more fully described and claimed.

15 In the drawings, Figure 1 is a side elevation of our invention. Fig. 2 is a front elevation showing one-half of the furnace. Fig. 3 is a vertical longitudinal section of the damper, furnace, and stack. Fig. 4 is a top  
20 plan view of our invention. Fig. 5 is a side elevation of the damper detached, and Fig. 6 is a top plan view of the same.

Referring to the drawings, 1 represents a furnace of well-known construction, to which  
25 our invention is applied, and 2 is a vertical passage formed in the top of the said furnace, leading to and connected with the casing 3, within which the vertically-sliding valve is located.

30 3 represents the casing for the valve, which is mounted on the top of the furnace, and is provided with a throat 4 at or near the top of the said furnace, which throat connects the said stack with the smoke-stack 5, thereby  
35 forming a passage for the escaping products of combustion.

6 represents a vertically-sliding valve or damper, which moves within the casing 3 and is incased thereby. Around the upper end  
40 of the damper 6 is formed a flange 7, which flange is of such a size as to allow the said damper to move freely within the casing 3, and yet prevent to a degree the escape of gases issuing from the furnace. Through the  
45 flange 7 are formed a sufficient number of vertical openings 8, through which air passes and causes a greater portion of the smoke and gases to be burned or consumed before entering the smoke-stack.

50 9 represents a vertical channel formed in the valve 6, and within which a rod 10 is se-

curely fastened by means of bolts 11, passing through the said valve and rod. To the upper end of the rod 10 is attached a chain 12, which leads upward, and is connected to a  
55 horizontal lever 13 for raising and lowering the damper 6, as may be desired. The horizontal lever 13 is pivoted to any suitable device above the furnace by means of a bolt 14, which lever supports the valve 6. To the  
60 opposite ends of the lever 13 is attached a rope, chain, or other like device 15, connected to a suitable reel 16, attached to the front or other convenient place of the furnace, by means of which the valve 6 is operated at the  
65 will of the operator.

In carrying out our invention it will be seen that the damper 6 is located directly over the outlet 2 of the furnace, causing the smoke and flame issuing from said furnace to  
70 strike the bottom of the damper, thereby holding the gases in the furnace and consuming a greater portion of them, thereby saving a great amount of fuel. The flange 7, formed on the top of the damper 6, guides the said  
75 damper within the casing 3 and prevents the escape of heat and gas.

By means of the construction of damper as shown it is impossible for clinkers to choke the said damper and prevent its free working.  
80

By locating the damper and casing for the same in contact with the outer air the same is prevented from breaking, which is a common occurrence with the ordinary valves or  
85 dampers now in use.

Having fully described our invention, what we claim is—

1. The combination of the casing 3, located over the discharge-opening of a furnace and leading to the outer air, the smoke-stack 5,  
90 the throat 4, connecting said casing and smoke-stack, with the valve 6, sliding in the casing, a flange at the upper end of said valve, vertical apertures 8 in said flange, a central opening in said valve, a rod 10, secured there-  
95 in, and a device secured to said rod to operate the damper, as described.

2. A damper for furnaces, consisting of a casing located over the discharge-passage leading from the furnace and in contact with  
100 the outer air, a sliding valve located therein, a flange on the upper end of said valve, ap-

ertures in said flange leading from the outer  
air to the interior of the casing, a central ver-  
tical opening in the valve, a rod secured  
therein, and a device connected to the said  
5 rod to operate the valve, as described.

3. A damper for furnaces, consisting of a  
vertically-sliding valve located directly over  
a discharge-passage leading from a furnace,  
a flange surrounding the said valve and pro-  
10 vided with vertical openings, and a device for  
operating the said valve, substantially as de-  
scribed.

4. A damper for furnaces, consisting of a  
casing located over the discharge-passage

leading from the furnace and in contact with 15  
the outer air, a sliding valve located therein,  
a vertical opening formed therein, a rod se-  
cured within the said opening, and a chain  
or other device connected to the said rod by  
means of which the valve is operated, sub- 20  
stantially as described.

In testimony whereof we affix our signa-  
tures in presence of two witnesses.

WILLIAM LANYON, JR.  
JOSIAH LANYON.

Witnesses:

N. G. ROMBAUER,  
GEO. W. KILLAM.