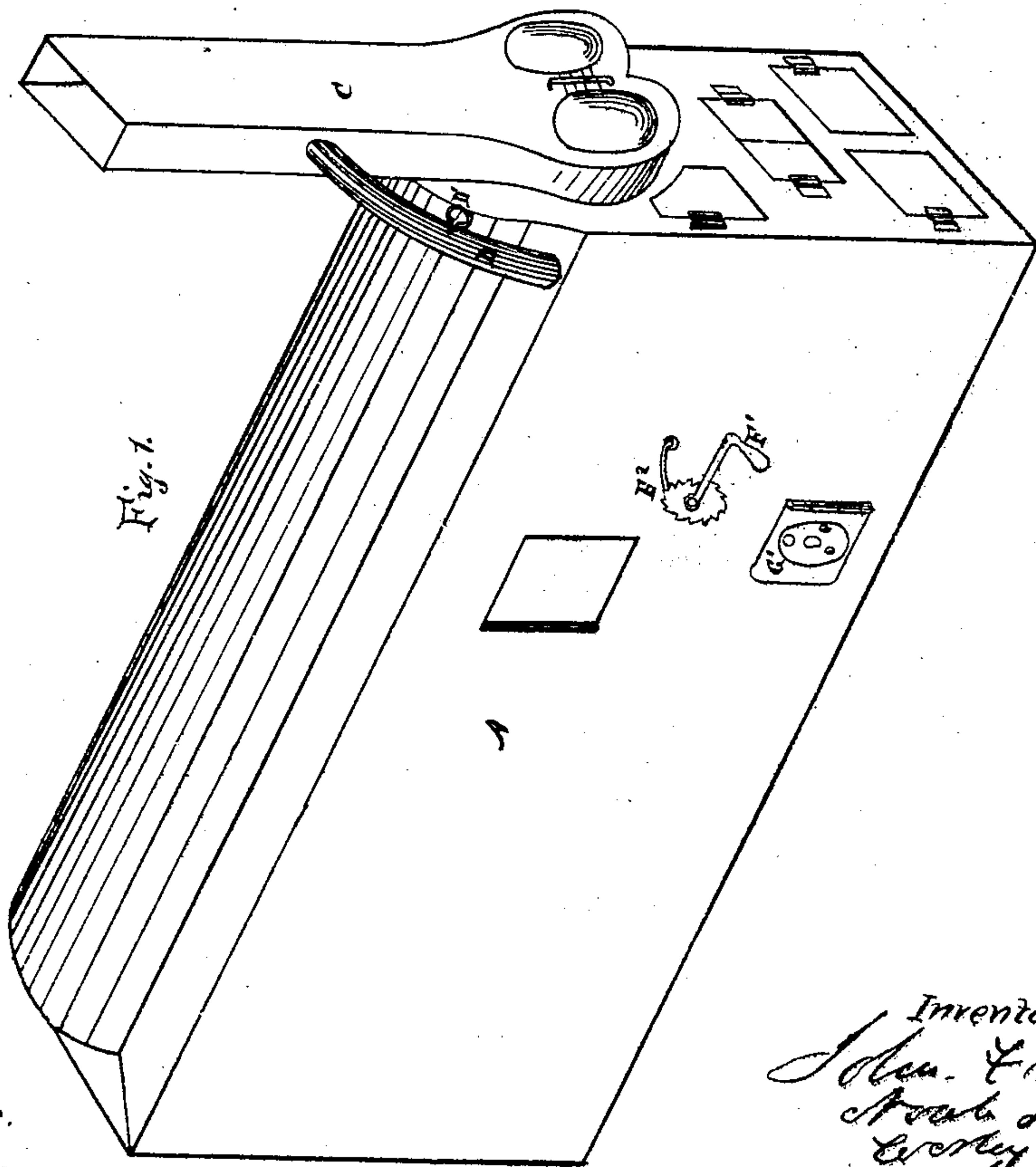
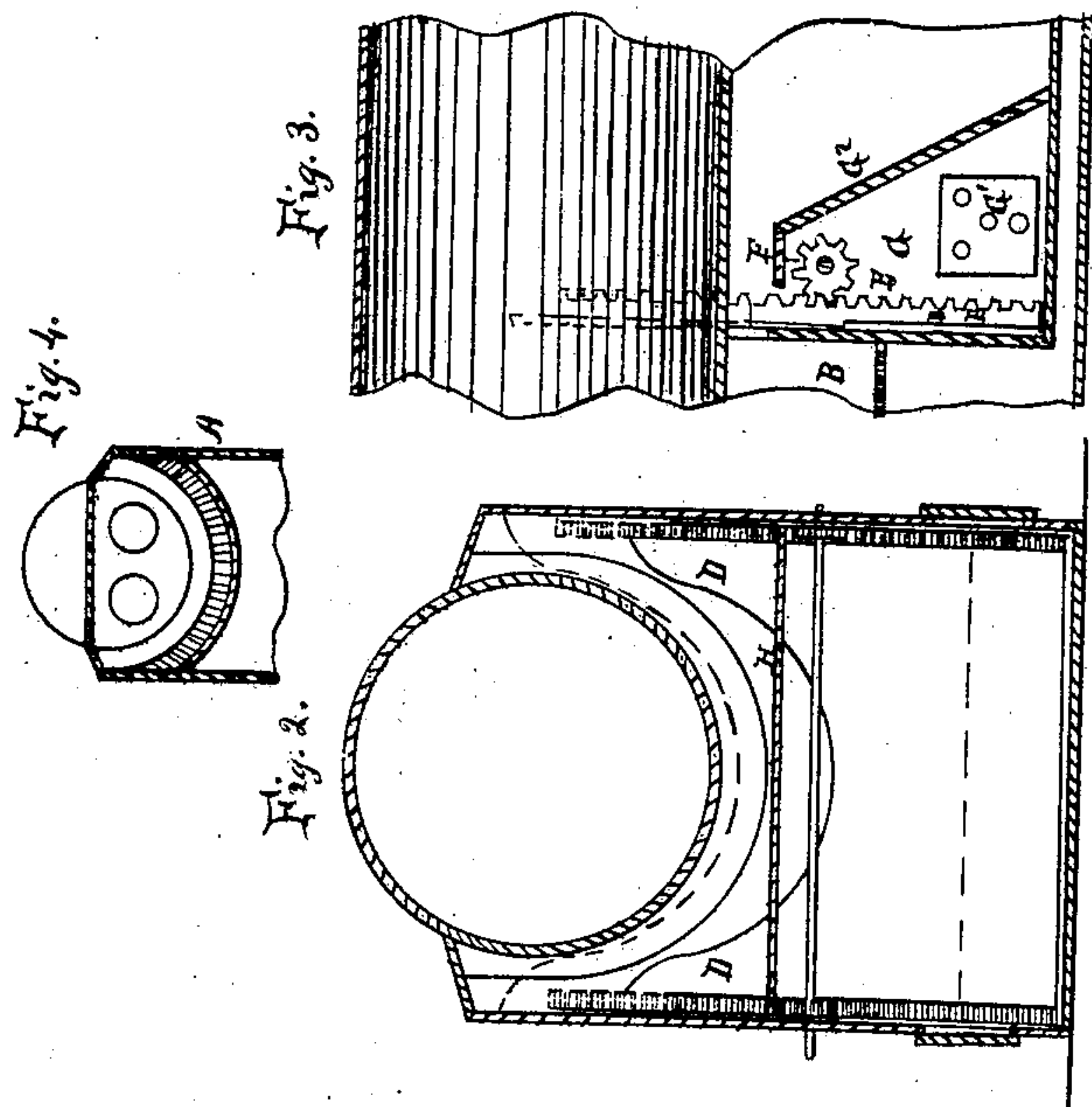


J. F. Myers, N & W. Leas.

Furnace for Steam-Boilers.

N<sup>o</sup> 71501

Patented Nov. 26, 1867



Witnesses.  
John Clausen  
James Campbell

Inventors  
J. F. Myers  
N & W. Leas  
By  
D. P. Halloway  
their atty

# United States Patent Office.

JOHN F. MYERS, NOAH LEAS, AND WORLEY LEAS, OF KOKOMO, INDIANA.

*Letters Patent No. 71,501, dated November 26, 1867.*

## IMPROVEMENT IN FURNACES FOR STEAM-BOILERS.

*The Schedule referred to in these Letters Patent and making part of the same.*

### TO ALL WHOM IT MAY CONCERN:

Be it known that we, JOHN F. MYERS, NOAH LEAS, and WORLEY LEAS, of Kokomo, in the county of Howard, and State of Indiana, have invented a new and improved Furnace for Steam-Boilers; and we do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the annexed drawings, making part of this specification, in which—

Figure 1 is a perspective view,

Figure 2 is a vertical cross-section, and

Figure 3 is a vertical longitudinal section.

Figure 4 is a vertical section through the hearth and rear part of the boiler.

The same letters are employed in all the figures in the indication of identical parts.

A is the furnace-wall; B is the fire-chamber, under the front of the boiler; C is the chimney, into which the smoke passes through the flues leading from the rear of the boiler. It is also connected, by the pipes D<sup>2</sup>, with the fire-chamber. These pipes are ordinarily closed by a valve, D<sup>1</sup>, but are to be opened whenever the draught through the boiler-flues is cut off. D is the damper, which is a flat sheet of metal, having the upper edge concave, so as to fit against the shell of the boiler when the damper is raised. It is placed immediately behind the fire-chamber, and is intended to cut off the draught, and prevent the passage of the heat to the rear end of the boiler, whenever a reduction of temperature is desired. It slides up and down, being controlled by the racks E, placed upon each end, and the pinions F, set upon a shaft turned by the winch F<sup>1</sup>, outside the furnace-walls. A ratchet and pawl, F<sup>2</sup>, holds the damper in place when raised. By raising the damper, and opening the valve D<sup>1</sup> in the pipes D<sup>2</sup>, the draught may be turned directly into the chimney, and the boiler cooled by opening doors opening through the furnace-walls, and admitting cold air to the exterior surface of the boiler, thus forming a safeguard against the danger of explosion. G is an open space below the front part of the hearth, and behind the damper, into which doors, G', are made to open, so that air may be admitted to the products of combustion on leaving the fire-chamber, supplying fresh oxygen, and promoting the entire combustion of the inflammable products of the fuel.

In order that the heat may be brought into immediate contact with the boiler, the back plate of the fire-box or bridge-wall is made concave, to correspond with the form of the boiler, as is also the hearth, extending from the damper back to the end of the boiler, leaving a space between them and the boiler of, say, about six inches, through which the heat passes, in close proximity to the shell of the boiler.

What we claim as our invention, and desire to secure by Letters Patent, is—

1. The combination of the vertically-sliding damper D, chamber G, and doors G', for the regulation of the draught, said parts being arranged substantially as set forth.

2. The combination of the vertical sliding damper D with the pipes D<sup>2</sup>, having valves D<sup>1</sup>, when arranged to control the course of the draught, substantially as set forth.

In testimony whereof we have signed our names to this specification in the presence of two subscribing witnesses.

Witnesses:

C. RICHMOND,

GEO. W. DEARINGER.

JOHN F. MYERS,  
NOAH LEAS,  
WORLEY LEAS.