(No Model.)

J. ASHCROFT.

DRAFT REGULATOR.

No. 347,550. Patented Aug. 17, 1886.

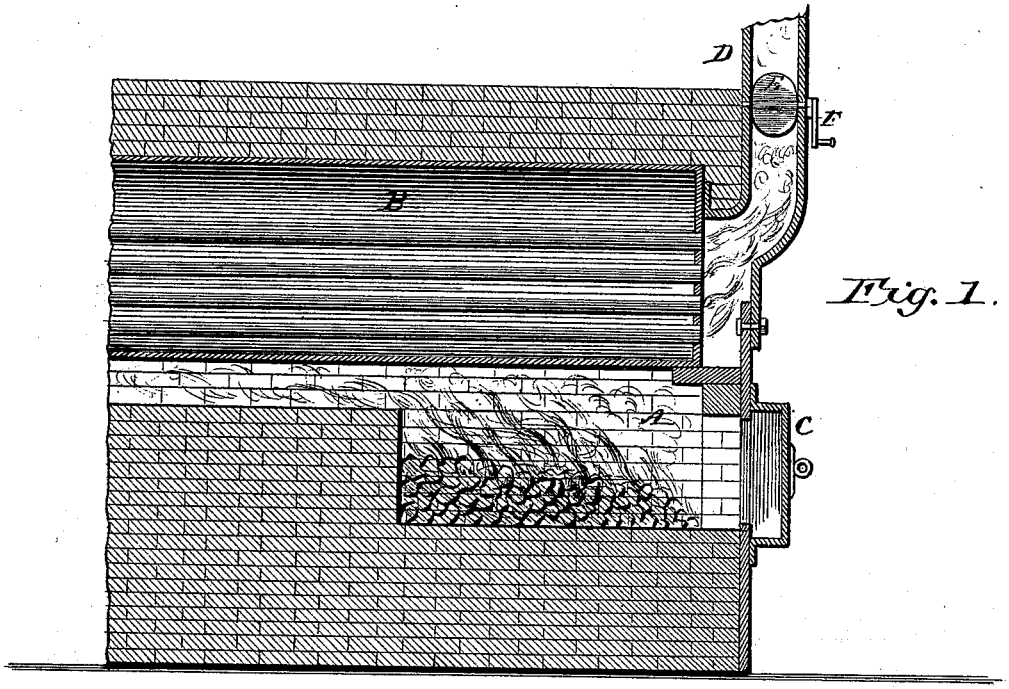

Fig. 1.

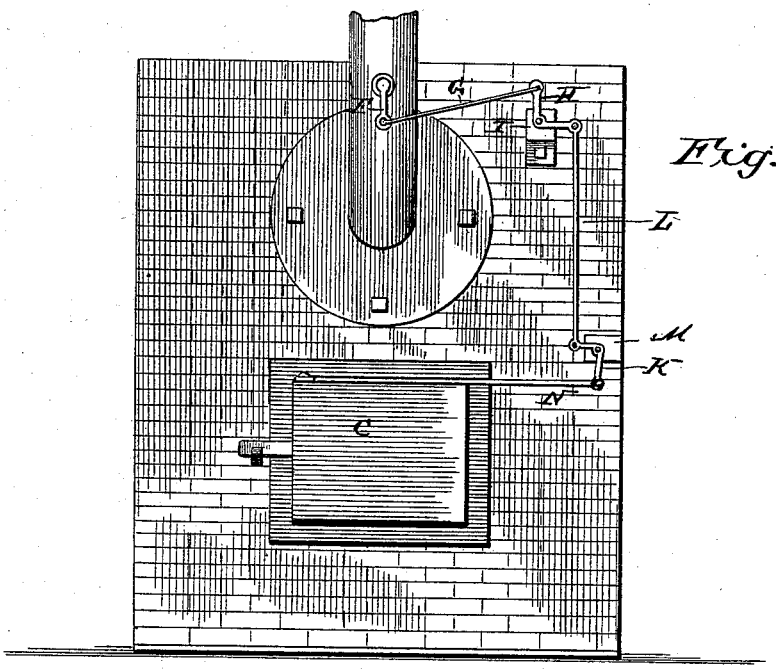

Fig. 2.

Witnesses

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UNITED STATES PATENT OFFICE.

JOHN ASHCROFT, OF NEW YORK, N. Y.

DRAFT-REGULATOR.

SPECIFICATION forming part of Letters Patent No. 347,550, dated August 17, 1886.

Application filed June 22, 1886. Serial No. 205,922. (No model.)

To all whom it may concern:

Be it known that I, JOHN ASHCROFT, a citizen of the United States, residing at New York, in the county of New York and State of New York, have invented certain new and useful Improvements in Devices for Controlling the Draft of Steam-Boiler Furnaces; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to improvements in devices for controlling the draft of steam-boiler furnaces.

The object of my invention is to provide a device by which the draft of the flue or stack is closed when the doors of the furnace are opened, thus preventing the inflow of cold air.

Referring to the drawings, Figure 1 is a vertical longitudinal sectional view of a furnace and steam-boiler with the damper or valve in the stack. Fig. 2 is a front view showing the devices for connecting the furnace-door with the damper in the smoke-stack.

A indicates the furnace, and B the steam boiler or generator, which is by preference of the type known as "return-flue" boilers.

C is the furnace-door, which is of the usual construction; and D is the smoke-stack or chimney, located at the front end of the boiler.

E is a damper or valve pivoted in the smoke-stack, so that it can be readily operated to open and close the flue of the smoke-stack. One end of the pivot-pin of the valve or damper extends through the front side of the smoke-stack, and is provided with a crank-arm, F, to which one end of the bar or rod G is secured, the other end of said rod being secured to one arm of the bell-crank lever H, said bell-crank lever being pivoted to a suitable bracket, I, secured to the furnace-front. The other end of the bell-crank lever H is connected to one arm of the bell-crank lever K by means of the rod L, said bell-crank lever K being pivoted to the bracket M, secured to the furnace-front. The other end of the bell-crank lever K is connected to the furnace-door C by means of the rod N, said rod N being connected to the bell-crank lever K by means of a ball-and-socket joint, so that the rod N will conform to the circular motion of the door without cramping or bending.

It will be noticed that when the furnace-door is opened to replenish the fire with fresh coal that the damper in the smoke-stack will close just enough to prevent any back draft, and the cold air will only enter the furnace at a moderate speed and in a limited quantity, thus preventing the refrigeration of the boiler, and the generation of steam is not seriously checked. By this means, also, the boiler-plates over the furnace will be prevented from cracking, and the sudden contractions and expansions incident to the change in temperature obviated in a great measure.

Having thus described my invention, what I claim is—

In an automatic device for closing and opening the draft of steam-boiler and other furnaces, the combination of the bar N, connected to the door of the furnace, with the bell-crank lever K, rod L, bell-crank lever H, rod G, crank-arm F, and damper E, located in the draft-flue of the furnace, as set forth.

In testimony whereof I affix my signature in presence of two witnesses.

JOHN ASHCROFT.

Witnesses:

SAMUEL P. BELL,

L. W. SINSABAUGH.