2 Sheets—Sheet 1.

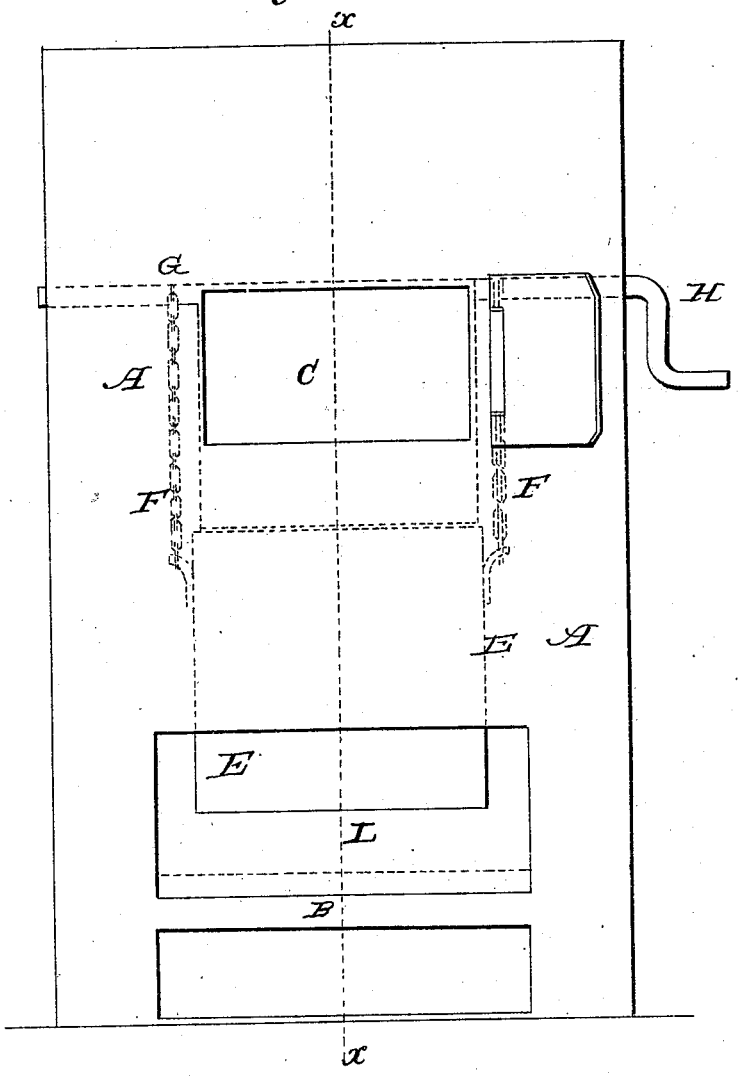
S. W. NORTON.

Hot Air Furnace.

No. 52,738.

Patented Feb. 20, 1866.

Fig. 1



Witnesses

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2 Sheets—Sheet 2.

S. W. NORTON.

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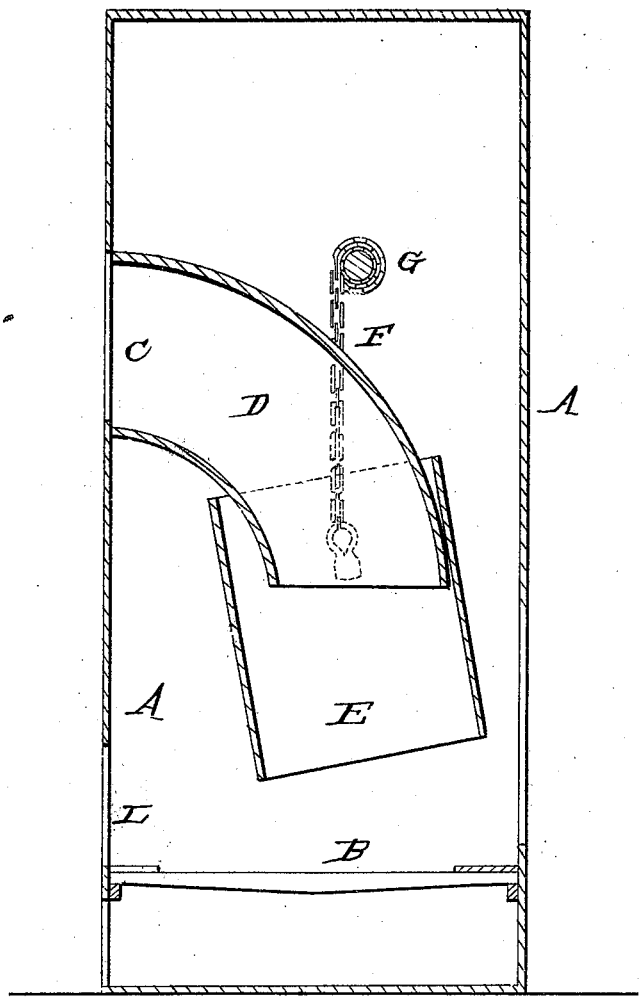
Fig. 2



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UNITED STATES PATENT OFFICE.

S. W. NORTON, OF LEMONT, ILLINOIS.

IMPROVEMENT IN HOT-AIR FURNACES.

Specification forming part of Letters Patent No. **52,738**, dated February 20, 1866.

To all whom it may concern:

Be it known that I, S. W. NORTON, of Lemont, in the county of Cook and State of Illinois, have invented a new and useful Improvement in Hot-Air Furnaces; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable those skilled in the art to make and use the same.

This invention relates particularly to a hot-air furnace to be used in connection with grain-drying apparatuses, and it is especially adapted to a grain-drier which forms the subject of a separate application for Letters Patent bearing even date herewith; and it consists in passing an air-blast through the products of combustion contained in the fire-pot of the furnace, the amount or quantity of which it comes in contact with being regulated by means of a novel arrangement within the fire pot or chamber, which, as it is raised or lowered, exposes a greater or lesser quantity of the combustible products of the fire-chamber to the action of the air-blast, as will be hereinafter explained, reference being had to the accompanying plate of drawings, of which—

Figure 1 is a front elevation of my improved hot-air furnace, and Fig. 2 a central transverse vertical section taken in the plane of the line *x x*, Fig. 1.

A in the drawings represents the fire-pot or combustion-chamber of the furnace; B, the fire-grate; C, the feed-door, having extending from its inside down toward the fire-grate a curved or bent spout, D, through which the coal or other combustible material used, when thrown through the door C, passes to the grate-bars E, a sleeve surrounding the said spout D, which sleeve is hung by chains F F at each end to a windlass or shaft, G, of the fire-pot, having a winch-handle, H, for convenience in turning it, and by turning which to the right or left the said sleeve is either raised or lowered, as the case may be, the chains by which the sleeve is suspended either then winding upon or unwinding from the said shaft C.

The front of the fire-pot A is open at L, and to such opening any suitable fan-blower or other similar device for creating an air-blast is connected, the rear of the fire-chamber directly opposite to its open front L being also made open and connected with the interior of the grain-drying apparatus with which it is intended to be used, whereby, as is obvious, the air-blast forced into the furnace will pass across and over the fire-grate thereof, consequently mingling with such portions of the combustible material of the fire-chamber as are exposed to its action, the amount of which will be regulated by raising or lowering the said sleeve E, as is obvious without further explanation. By thus subjecting a greater or lesser quantity of the combustible products in the fire-pot to the action of the air-blast forced across and through the same, it is manifest that the degree to which the air-blast is heated as it passes through the furnace is correspondingly regulated—a result of much importance in the use of hot-air blasts for the drying of grain.

What I claim as new, and desire to secure by Letters Patent, is—

The sleeve E, so arranged with regard to the feed-spout D of the furnace and the air-blast forced through and across the same as to be susceptible of being raised or lowered, substantially in the manner described, and for the purpose specified.

S. W. NORTON.

Witnesses:

JAMES A. BORLAND,

E. T. SINGER.