(No Model.)

D. SANDSTROM & J. H. ANDERSON.

BLAST FURNACE.

No. 313,537. Patented Mar. 10, 1885.

Fig. 2

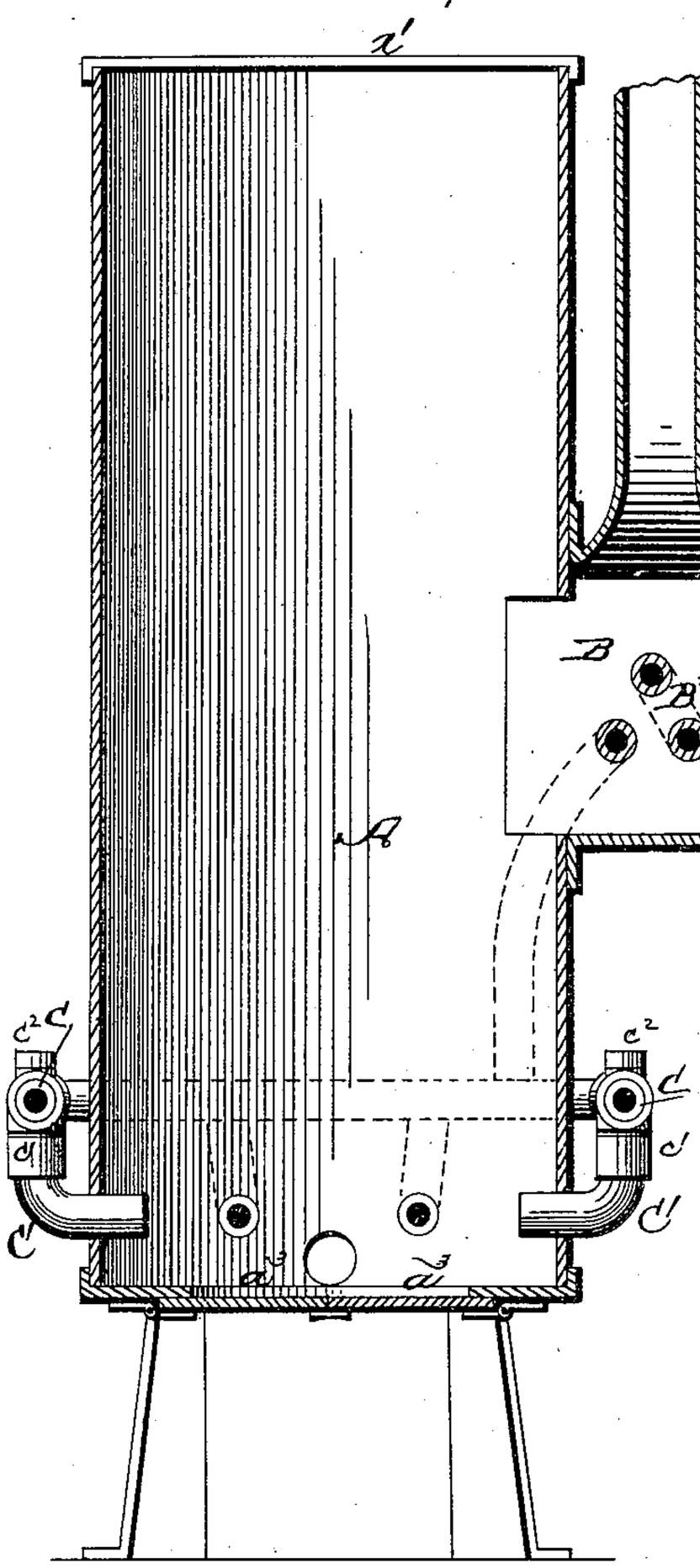
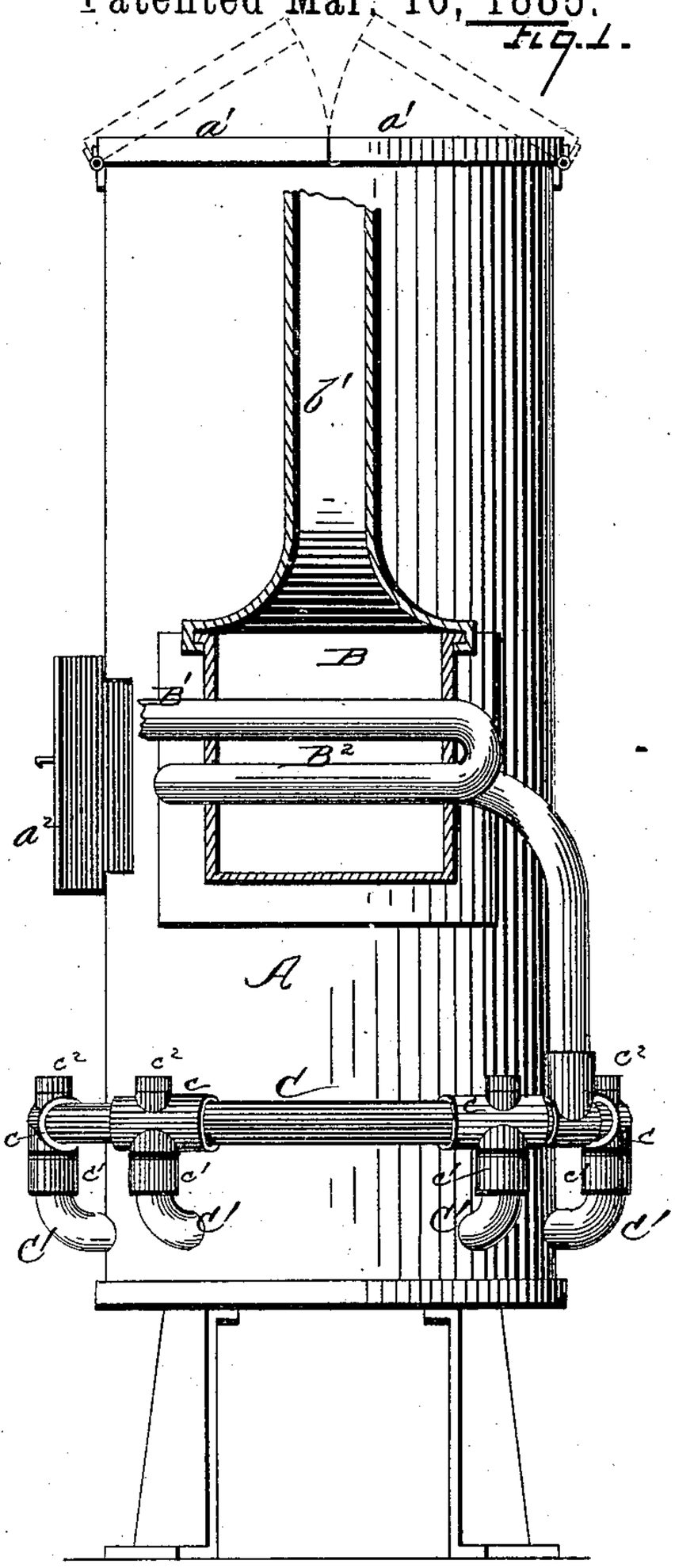


Fig. 1.



Witnesses

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DANIEL SANDSTROM AND JOHN H. ANDERSON, OF PULLMAN, ILLINOIS.

BLAST-FURNACE.

SPECIFICATION forming part of Letters Patent No. 313,537, dated March 10, 1885.

Application filed April 21, 1884. (No model.)

To all whom it may concern:

Be it known that we, DANIEL SANDSTROM and JOHN H. ANDERSON, citizens of the United States, residing at Pullman, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Blast-Furnaces, of which the following is a specification, to wit:

This invention relates to blast-furnaces; and it consists in certain peculiarities of construction and operation whereby a hot-air blast is supplied after being heated in an offset of the main body of the furnace, substantially as will be hereinafter more fully set forth and claimed.

In order to enable others skilled in the art to which our invention appertains to make and use the same, we will now proceed to describe its construction and operation, referring to the accompanying drawings, in which—

Figure 1 is a side elevation, partly in section, and Fig. 2 a central vertical section, of our furnace.

A represents a cupola or blast furnace of the usual and well-known shape, and lined with fire-brick, as usual. This furnace is at its top supplied with hinged doors a' to regulate the draft, and also with a fire-door, a^2, and the usual hinged bottom, a^3, by means of which it may be cleaned out. Upon one side the main body of the cupola or furnace is provided with a small extension or chamber, B, also lined with brick, and having a chimney or other suitable outlet, b', as shown. Into this chamber is led the pipe B′, into which a cold blast is forced by connection with any device most suitable for the purpose, and which was not deemed of sufficient importance to be shown herein. This pipe passes back and forth through the chamber B a number of times and forms a coil, B^2, the end of which is carried down and connected with a pipe, C, encircling the furnace near its lower end. This pipe C is formed in sections connected by T-joints c, each of which is connected by a union, c', with a short section of pipe, C′, running into the interior of the furnace, as seen in Fig. 2. Each T-joint c is also provided with a plug, c^2, which may be readily removed to admit of cleaning out the short section of pipe C′ at any time.

It will be evident to those versed in the art that when a fire is started in the furnace beneath layers of charcoal and iron scraps in the usual manner a part of the intense heat of the main body of the furnace will be circulated around the coil of pipe B^2 in the chamber B, and the inflowing air-blast in this pipe will be thereby heated to an intense heat before being discharged into the furnace, rendering it possible to obtain the best results with the least expense and without danger of destroying the heating-coil, as would be the case if it were located in the main body of the device. In the drawings this coil is represented as passing entirely through the heating-chamber and its return-bends formed outside of the same; but, if desired, it is evident the whole coil may be inclosed within the chamber.

The construction of the circle C in sections and its connections and plugs render repairs and cleansing easy, and its removable plugs c^2 may, if found more desirable, be placed in the short pipe-sections C′ with equal effect. The hinged doors a' are used to regulate the draft through the heating-chamber, it being evident that when they are opened less heat will pass through this chamber.

Having thus fully described our invention, what we claim as new, and desire to secure by Letters Patent, is—

1. The furnace A and its auxiliary chamber B, lined with fire-brick, in combination with the coil B^2, distributing-pipe C, and its connections C′, all constructed and arranged to operate substantially as and for the purpose set forth.

2. In a blast-furnace, the main body A, having hinged doors a' at the upper end, in combination with a chamber secured at one side and opening into the main body, and provided with a stack or chimney, whereby the draft is directed through this chamber in a greater or less degree, as may be desired, substantially as and for the purpose set forth.

In testimony whereof we affix our signatures in presence of two witnesses.

DANIEL SANDSTROM.
JOHN H. ANDERSON.

Witnesses:
W. C. MCARTHUR,
CHAS. KRESSMANN.