

J. C. BREWSTER.
Desulphurizing Ovens.

No. 159,384.

Patented Feb. 2, 1875.

Fig. 1.

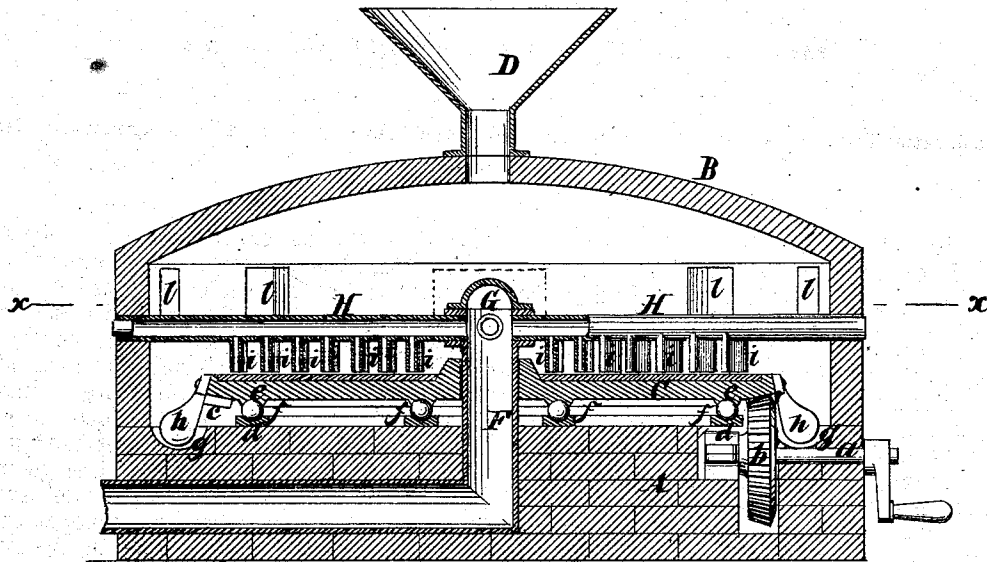
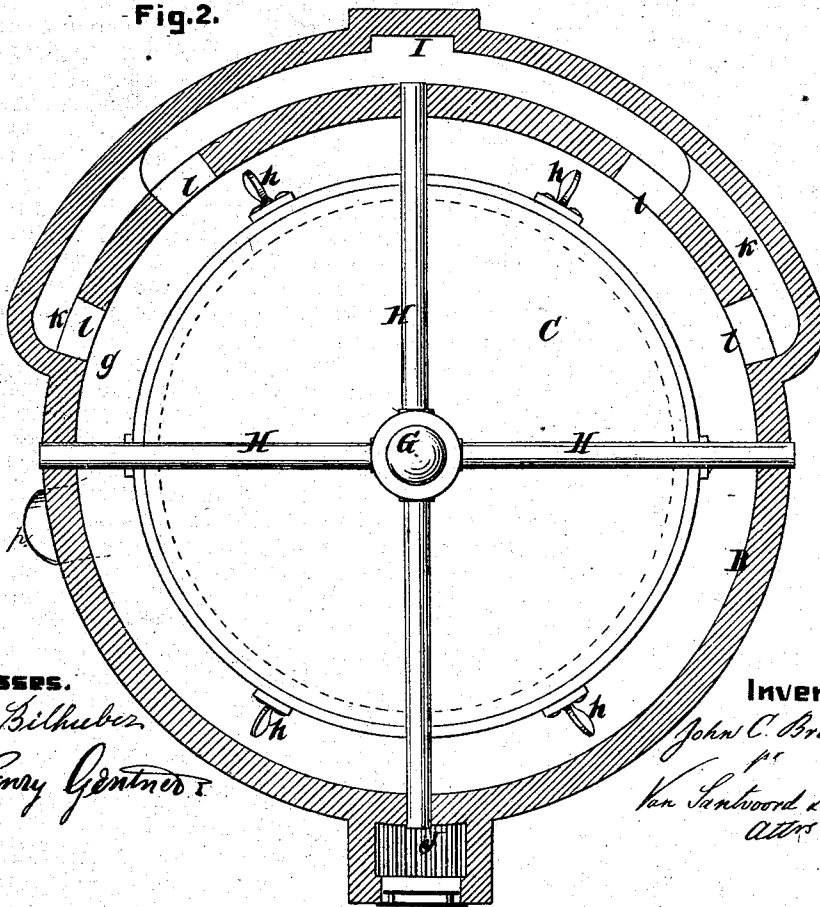


Fig. 2.



Witnesses.

Ernst Bilhuber
Henry Gentner

Inventor.

John C. Brewster
per
Van Santvoord & Hauff
Attors

UNITED STATES PATENT OFFICE.

JOHN C. BREWSTER, OF NEW YORK, N. Y.

IMPROVEMENT IN DESULPHURIZING-OVENS.

Specification forming part of Letters Patent No. **159,384**, dated February 2, 1875; application filed January 2, 1875.

To all whom it may concern:

Be it known that I, JOHN C. BREWSTER, of the city, county, and State of New York, have invented a certain new and useful Improvement in Desulphurizing-Ovens, of which the following is a specification:

This invention is illustrated in the accompanying drawing, in which Figure 1 represents a vertical central section. Fig. 2 is a horizontal section in the plane *x x*, Fig. 1.

Similar letters indicate corresponding parts.

This invention relates to an improvement on that class of desulphurizing-ovens which I have described in my Patent No. 99,143, dated January 25, 1870, and which contain a revolving table, on which the ore is spread, and a pipe extending across said table for the purpose of injecting air on the ore.

My present improvement consists in the combination, with an oven containing a revolving table, of an air-pipe extending up through the center of said table, and supporting one or more radiating tubes, for the purpose of spreading the air uniformly over the entire surface of the table; also, in the combination, with an oven containing a revolving table, of one or more air-pipes situated above said table, and provided with tubular nipples, which extend close down to the surface of the table, so that the currents of air escaping from said nipples are blown under and up through the ore spread on the revolving table, and thereby the desulphurizing process is materially promoted; further, in the combination, with an oven containing a revolving table, of one or more air-pipes provided with flat oblique fingers or agitators, for the purpose of stirring the ore spread on the table, and of working said ore gradually out over the edge of said table.

In the drawing, the letter A designates the base of the oven, which is constructed, preferably, of a circular form, and provided with the necessary fire-place and chimney. B is the top or crown of my oven, constructed of an arched shape to deflect the heat upon the ore, and provided with a hopper, D, for introducing the ore. The revolving table C rests upon the anti-friction rollers *f f*, which play in the grooves *d e*, the former situated in the base of the oven, and the latter in the under

surface of the table. Said table receives its motion through a shaft, *a*, carrying a pinion, *b*, which engages with cogs *c* on the under surface of the table. The center of the table is raised, and through this raised center extends a pipe, F, which terminates in a head, G, from which extend two or more radiating tubular arms, H, and each of these tubular arms is provided with a series of hollow fingers or nipples, *i*, which extend close down to the surface of the table, so that they sweep through the ore spread on the table, and that their orifices are situated beneath the upper surface of the stratum of ore. If air is forced in through the pipe F, therefore, the currents of air which issue from the orifices of the nipples *i* are forced beneath and up through the ore, and at the same time, as the table revolves, the ore is agitated by said nipples, and the air is brought in intimate contact with all the particles of ore. Furthermore, the air, in passing through the pipes F and H, is heated to a high degree, so that the oxygen contained therein, when brought in contact with ore, readily combines with the sulphur, and the process of desulphurization is accomplished to perfection.

By the central air-pipe, F, the tubular arms H are firmly supported and retained in the required position. The fingers *i* are, by preference, made flat, and they are set in oblique positions, so that by their action the ore contained on the revolving table is gradually worked off the edge of said table, whence it falls into a channel or trough, *g*. A series of sweeps, *h h*, attached to the under side of the table, then act upon it to discharge it through an orifice, *p*, in the base of the oven. The chimney I is opposite the fire-place J, and it communicates with the interior of the oven through flues *k k* and apertures *l l*, (see Fig. 2,) so that the fire will spread laterally over the table, and the interior of the oven will be uniformly heated.

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

1. The combination, in an oven provided with a revolving table, of an air-pipe extending up through the center of the table, and supporting and communicating with a series of stationary radiating tubular arms, which

have their ends embedded in the walls of the oven, and communicating with the external air, substantially as described.

2. The combination, with an oven containing a revolving table, of one or more air-pipes situated above said table, and provided with tubular fingers or nipples extending close down to the surface of the table, substantially as and for the purpose set forth.

3. The series of fixed radiating tubular arms, supported at their inner ends by the central

air-pipe, and at their outer ends by the walls of the oven, in combination with the flat agitators and depending nipples, and the revolving table, substantially as described.

In testimony that I claim the foregoing I have hereunto set my hand and seal this 23d day of December, 1874.

JOHN C. BREWSTER. [L. s.]

Witnesses:

W. HAUFF,

CHAS. WAHLERS.