(No Model.)

J. R. MOORE.

SUPERHEATER.

No. 271,651. Patented Feb. 6, 1883.

FIG. 1.

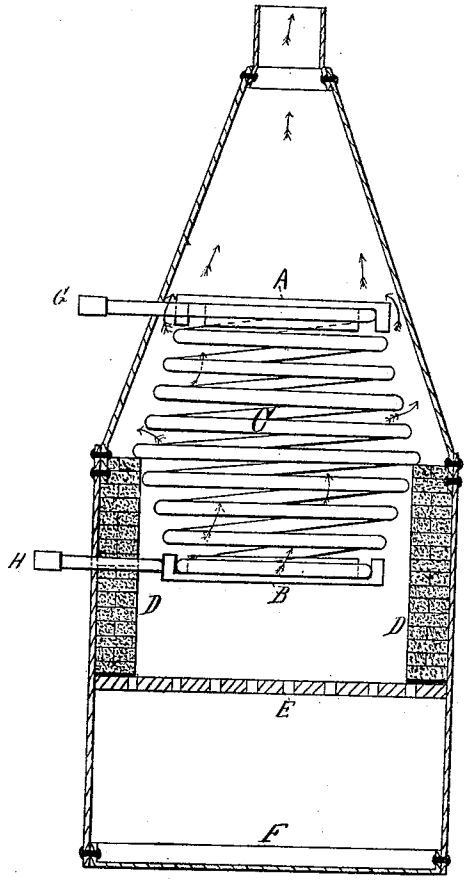


FIG. 4.

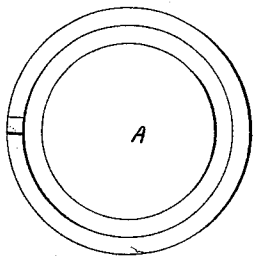


FIG. 5.

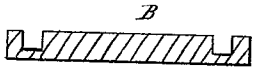


FIG. 2.

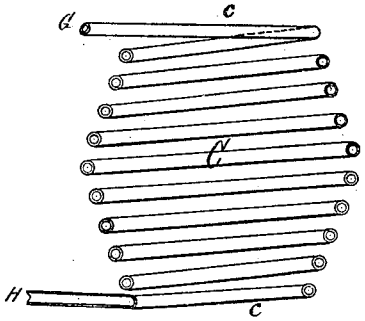
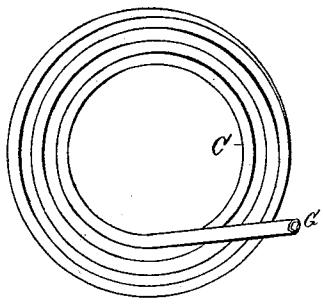


FIG. 3.



ATTEST.

John Buckler

Wm. A. Osgood

John R. Moore

INVENTOR.

By Crawford & Drew

ATTORNEYS

UNITED STATES PATENT OFFICE.

JOHN R. MOORE, OF BROOKLYN, NEW YORK, ASSIGNOR TO JOSEPH ANNIN, OF SAME PLACE.

SUPERHEATER.

SPECIFICATION forming part of Letters Patent No. 271,651, dated February 6, 1883.

Application filed August 12, 1882. (No model.)

To all whom it may concern:

Be it known that I, JOHN R. MOORE, of the city of Brooklyn, county of Kings, and State of New York, have invented a certain new and useful Improvement in Superheaters, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, and to the letters of reference marked thereon.

My invention relates to superheaters wherein the steam, after it leaves the boiler where it is generated, is reheated or superheated, and I construct said superheater in such a manner as to present as large a surface as possible to the action of the heat. I attain these objects by the apparatus illustrated in the accompanying drawings, in which—

Figure 1 is a vertical section of the furnace, showing an elevation of the superheater C. Fig. 2 is a vertical section of the superheater through the center. Fig. 3 is a plan view of the superheater C. Fig. 4 is a plan view of the caps A B. Fig. 5 is a cross-section of the caps A B.

The superheater C is constructed of one continuous piece of wrought-iron tubing coiled in a volute shape from the center upward, and in a similar manner from the center downward, having the central ring of the coil the largest, as shown in Figs. 1, 2, and 3, this latter construction being used for the purpose of resting the coil on the brick-work D of the furnace, and thus sustaining the superheater in place, as shown in Fig. 1. Each ring of the coil, as it rises from the center, is made smaller than the preceding ring, and each ring of the coil, as it descends from the center, is also smaller than its predecessor, thus leaving a space between each ring, as shown in Figs. 1 and 2.

Fig. 1 is a furnace having grate-bars E and a fire-brick lining, D, and when the coil or superheater C is constructed as described, having the caps or plugs A B placed over or inserted into the circular openings formed by the last ring of the coil at both top and bottom, it is then placed in the furnace, as shown in Fig. 1.

The caps or stoppers A B are made of any suitable fire-proof material, and may be made of any desirable shape. The office of these caps or stoppers is to prevent the heat and products of combustion from passing directly through the center of the coil C from bottom to top. When these caps or stoppers are placed in position, as shown in Fig. 1, they deflect the heat and flame to the sides of the coil, thereby causing the products of combustion to circulate around and between each of the rings of the coil, thus presenting the entire surface of each ring of the coil to the action of the flame and utilizing all the heat from the furnace.

Having thus described my invention, what I claim, and desire to secure by Letters Patent, is—

1. A superheater composed of one continuous piece of tubing, the center or middle ring the largest in diameter, the top part of the center rising above and from the center ring in the form of a volute-shaped spiral, and the part descending from and below the center in a volute-shaped spiral coil, having each circular opening on the top and bottom, which is formed by the last ring of the spiral tubing on each end, fitted with and closed by a cap or stopper for the purpose as shown and described.

2. A superheater composed of one continuous piece of tubing in the form of a volute spiral coil, each ring of the spiral smaller in diameter from the center toward each end, having the small circular openings formed by the ends or last two rings of the spiral volute-shaped coil closed by caps or stoppers, having the middle or center ring of the superheater the largest and projecting outward and beyond the other rings of the coil for the purpose of resting the same on the brick-work of a furnace to sustain the superheater over the fire, as shown and described.

In testimony that I claim the foregoing I have hereunto set my hand in the presence of two witnesses.

JOHN R. MOORE.

Witnesses:

JOSEPH ANNIN,

GEORGE L. BENTON.