W. S. WRIGHT.

Charcoal Furnace.

No. 40,207. Patented Oct. 6, 1863.

Fig. 1.

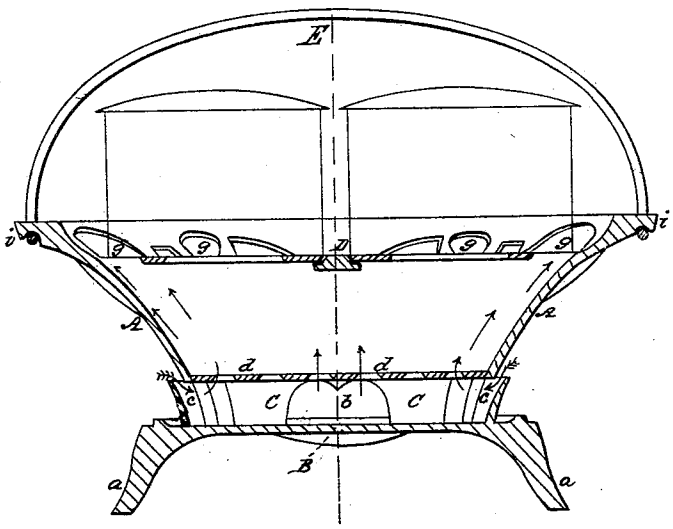


Fig. 2.

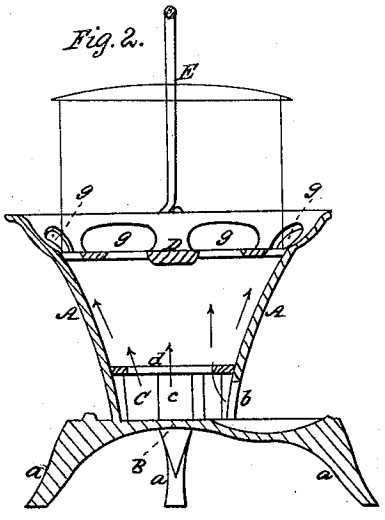
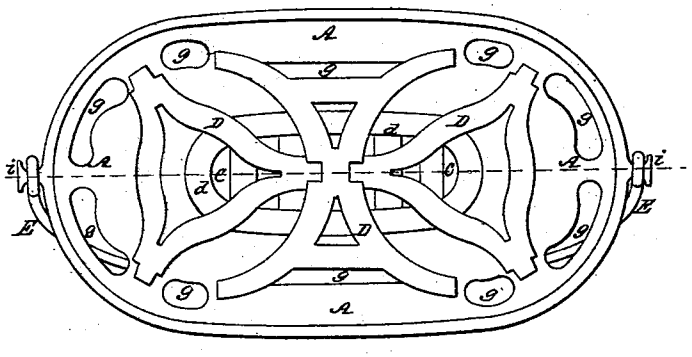


Fig. 3.



Witnesses:

R. T. Campbell

Inventor

Wiley S. Wright

by his Attys

Munn & Howard & Lawrence

N. PETERS. Photo-Lithographer. Washington, D. C.

UNITED STATES PATENT OFFICE.

WILEY S. WRIGHT, OF ST. LOUIS, MISSOURI.

IMPROVEMENT IN CHARCOAL-FURNACES.

Specification forming part of Letters Patent No. **40,207**, dated October 6, 1863.

To all whom it may concern:

Be it known that I, WILEY S. WRIGHT, of St. Louis, in the county of St. Louis and State of Missouri, have invented a new and useful Improvement in Charcoal-Furnaces; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, making a part of this specification, in which—

Figure 1 is a longitudinal vertical section through the center of my improved furnace. Fig. 2 is a vertical transverse section through the same. Fig. 3 is a top view of the furnace complete.

Similar letters of reference indicate corresponding parts in the three figures.

This invention relates to a new and useful improvement in the construction of portable charcoal-furnaces.

The difficulty experienced in using charcoal-furnaces of the circular form arises from the fact that two or more large cylindrical vessels, or an elliptical vessel, cannot be placed upon them and properly exposed to the heat of the furnaces, and those which are made with a cylindrical body and an elliptical top, bolted together with a view to obviate this difficulty, have so little of their top surface exposed to the direct heat of the fire that they consume large quantities of fuel in heating large vessels which are placed upon them. Besides, in such furnaces, where the top chamber extends over the sides of the cylindrical body, it is obvious that the fire must be confined within this latter portion, otherwise it would not be supplied with sufficient draft to support combustion.

The object of my invention is to combine in a portable charcoal-furnace the advantages of the open flaring shape of the circular furnaces to obtain the necessary draft, with the elliptical top, so that large cylindrical or elliptical vessels placed upon my furnace will have their bottoms exposed to the direct heat of the bed of coals. At the same time the entire bed of coals will be subject to a bottom draft, which will keep up a free and even combustion, all as will be hereinafter described.

To enable others skilled in the art to make and use my invention, I will proceed to describe its construction and operation.

A represents the body of the furnace, and B the bottom thereof, which is extended out so as to form a hearth, which, together with the body A, is mounted on legs *a a a*. The shape of the body A is such that a horizontal section taken at any point through it is of the form of an ellipse, as shown in Fig. 3, though the size of this body increases in its lateral as well as longitudinal dimensions as it rises from the hearth B, so as to give somewhat the shape of a bell compressed in one direction. This gradually curved and flaring shape which is given to the body of the furnace allows the air which is admitted into it through the side door *b* and end openings, *c c*, as indicated by the arrows in Figs. 1 and 2, to pass up along the sides inside of the furnace as well as up through the center thereof, and it will be seen that there are no obstructions to the free passage of air upward and outward in my furnace. The grate *d*, near the bottom of the furnace, forms beneath it an ash-pit, C, and upon this grate the charcoal is put, filling the space above it to the upper grate, D, which latter is made up of sections that fit each other and the elliptical shape of the flaring top of the furnace, as shown in Fig. 3. This latter grate is made of open-work or narrow bars, and the vessels which are to be subjected to the heat of the furnace are placed upon it, it forming a proper support for round or cylindrical vessels as well as vessels of an elliptical shape. It will thus be seen that in whatever position a vessel may be placed on the grate D, whether in the center or at its ends, its bottom will be directly over a bed of coals which are supplied freely with air, and, in order to insure a more perfect supply of air to the coal at the extreme ends of the furnace, I have made the end openings, *c c*, above referred to, in addition to the side opening *b*, for the purpose of igniting the coal rapidly and more evenly than would be the case if merely a side draft were allowed and a current of air carried up through the center of the bed of coals. By this form of furnace the greatest amount of heat will be brought directly under the vessels placed on the grate D, and there will be very little heat radiated from the sides of the furnace. I thus obtain a saving in fuel and economy in the time required to heat large vessels. Besides, I am enabled to keep all the coals in the furnace evenly ignited directly under the grate D at the ends as well as in the center of the furnace. The openings *g g g*, which surround the

grate D, are intended for the escape of gas and other products of combustion, and to keep up a draft when the top of the furnace is nearly if not wholly closed by large vessels. These openings are made through the flaring body A at its ends for the purpose of facilitating the draft at these points.

The projecting lugs *i i* at the semicircular ends of the furnace are intended to receive the eyes which are formed on the ends of the bail E, which is used in moving the furnace from place to place.

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

1. A charcoal-furnace of elongated form and with a flaring mouth, the flare being both in a lateral and longitudinal direction, and continuations of the curves of the base portion of the furnace, all in the manner and for the purpose described.

2. An elliptical charcoal-furnace provided with front and end drafts, *b c c*, substantially as and for the purpose set forth.

3. An elongated flaring charcoal-furnace constructed with end drafts, *c c*, substantially as and for the purpose set forth.

Witness my hand in the matter of my application for Letters Patent on improved charcoal-furnace.

WILEY S. WRIGHT.

Witnesses:
E. C. QUINBY,
GEO. H. STUMPF.