W. SPARROW.

Charcoal-Kiln.

No. 163,700. Patented May 25, 1875.

Fig: 1

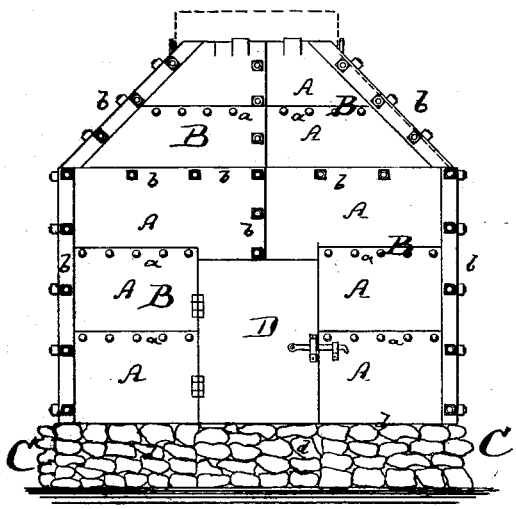


Fig: 2

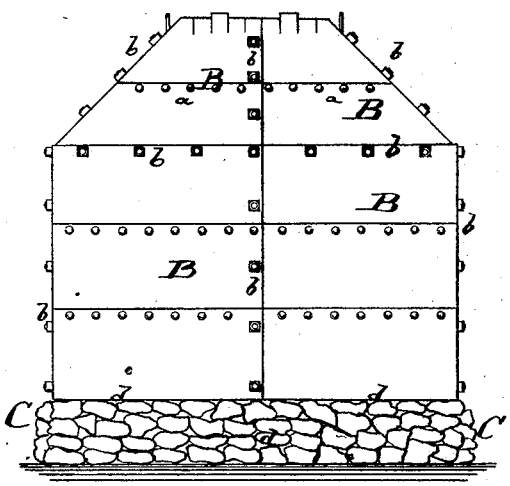
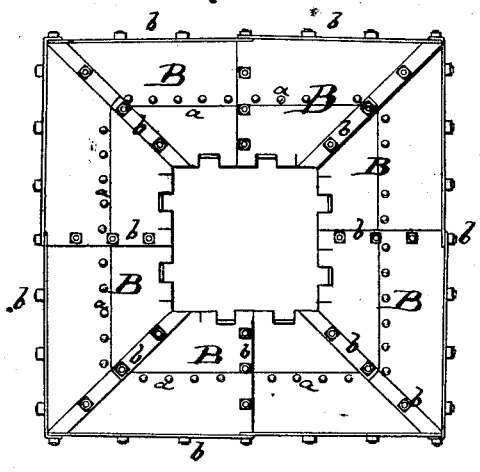


Fig: 3



Witnesses:

A. Moraga.
E. C. Wells.

Inventor:

Warren Sparrow
by his attorney
A. V. Briesen

UNITED STATES PATENT OFFICE.

WARREN SPARROW, OF HANCOCK, MASSACHUSETTS.

IMPROVEMENT IN CHARCOAL-KILNS.

Specification forming part of Letters Patent No. **163,700**, dated May 25, 1875; application filed October 30, 1874.

To all whom it may concern:

Be it known that I, WARREN SPARROW, of Hancock, Berkshire county, Massachusetts, have invented a new and Improved Charcoal-Kiln, of which the following is a specification:

Figure 1 is a front elevation, Fig. 2 a side elevation, and Fig. 3 a top view, of my improved charcoal-kiln.

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

The object of this invention is to produce a portable charcoal-kiln for use in mountainous districts.

The charcoal kilns or furnaces which are now in use are of two kinds. In flat sections of the country where the soil is soft the wood to be charred is simply piled up and covered with earth, which covering serves as a kiln, and in such sections any other kind of kiln will not be requisite than the one which can be furnished by the soil itself; but in the mountainous districts, such as are frequent in the northern part of the State of New York, and in several of the New England States, and at other places where there is no soft soil that can be dug up, but where the ground is formed of stones or rocks, it has been the custom to build charcoal furnaces or kilns of brick into solid structures. The brick used in these furnaces had to be conveyed from the places where made, and built up with the aid of cement, and served then to form a stable and immovable structure. When, after a few weeks, the wood surrounding such a kiln had been consumed, the kiln would either be useless, owing to its distance from the remaining woods, or it would have to be broken to pieces, removed, and rebuilt at great expense. Frequently such removal is entirely impossible, owing to the immense weight of the material constituting such a kiln, the same weighing, on an average, from eight to ten tons.

Now, my invention consists in producing a kiln of metal, which will altogether not weigh more, perhaps, than half a ton, and which can be easily taken to pieces and transported without difficulty to any suitable place.

In carrying my invention into effect I use plates A A of sheet metal, or thin cast metal, and connect the same into sections B B by means of rivets *a a*. The several sections B B are united by bolts and nuts *b b* into a structure or house of rectangular or other suitable form, such structure or house having straight sides and a slanting roof, something like that indicated in the drawing, or other suitable outline, and an opening in the top for receiving the cover usually required in charcoal-kilns.

For use, I collect at first a suitable number of stones as they are found on the field or in the woods, and produce by their means a foundation, C, upon which the walls of the metal structure B rest. These stones C are so arranged that holes *d d* are formed through the foundation for admitting the requisite quantity of air to the interior of the kiln. In the kiln I put sleepers of wood on the ground, and upon these sleepers I pile the wood which is to be converted into charcoal.

Whenever the locality of the kiln thus constructed does no longer yield the requisite quantity of wood, I can easily take the kiln to pieces by unscrewing the bolts and nuts *b b*, and thereby obtaining the separate sections B B, which are not too heavy nor too bulky for convenient transportation. At the requisite place the sections can be readily re-united into a new kiln; and thus by my invention a very large sum of money can be saved to every producer of charcoal, as he will be able henceforth to use but one kiln of light weight and cheap construction, where heretofore he would use a large number of kilns, each one costly and difficult to put up.

In Fig. 1 I have also represented the door D, which is usually left in such kilns for the purposes of putting in the wood, and for inspection, removal of the wood, &c.

The kiln when put up may, if desired, be braced to posts, driven around it into the ground, so that the interior heat may not bulge the metal plates outwardly.

I am aware that sectional furnaces, stoves, and even buildings have been constructed of sheet metal previous to my invention, and I do not claim to have invented such; but, inasmuch as there never has been, previous to my invention, a sheet-metal sectional charcoal-

kiln placed on a perforated stone foundation, and as, in fact, previous to my invention wood has never been converted into charcoal in a metal kiln between metallic surfaces,

I claim as my invention—

A sectional charcoal-kiln for the dry distillation of wood, composed entirely of thin metal sheets which are formed into sections B B, and adapted to be placed on, and combined with a perforated foundation, C, of stone, substantially as specified.

The above description of my invention signed by me this 27th day of October, 1874.

WARREN SPARROW.

Witnesses:
F. V. BRIESEN,
E. C. WEBB.