

B. F. HOLLAND.
Lime and Cement Kiln.

No. 224,912.

Patented Feb. 24, 1880.

Fig. 1.

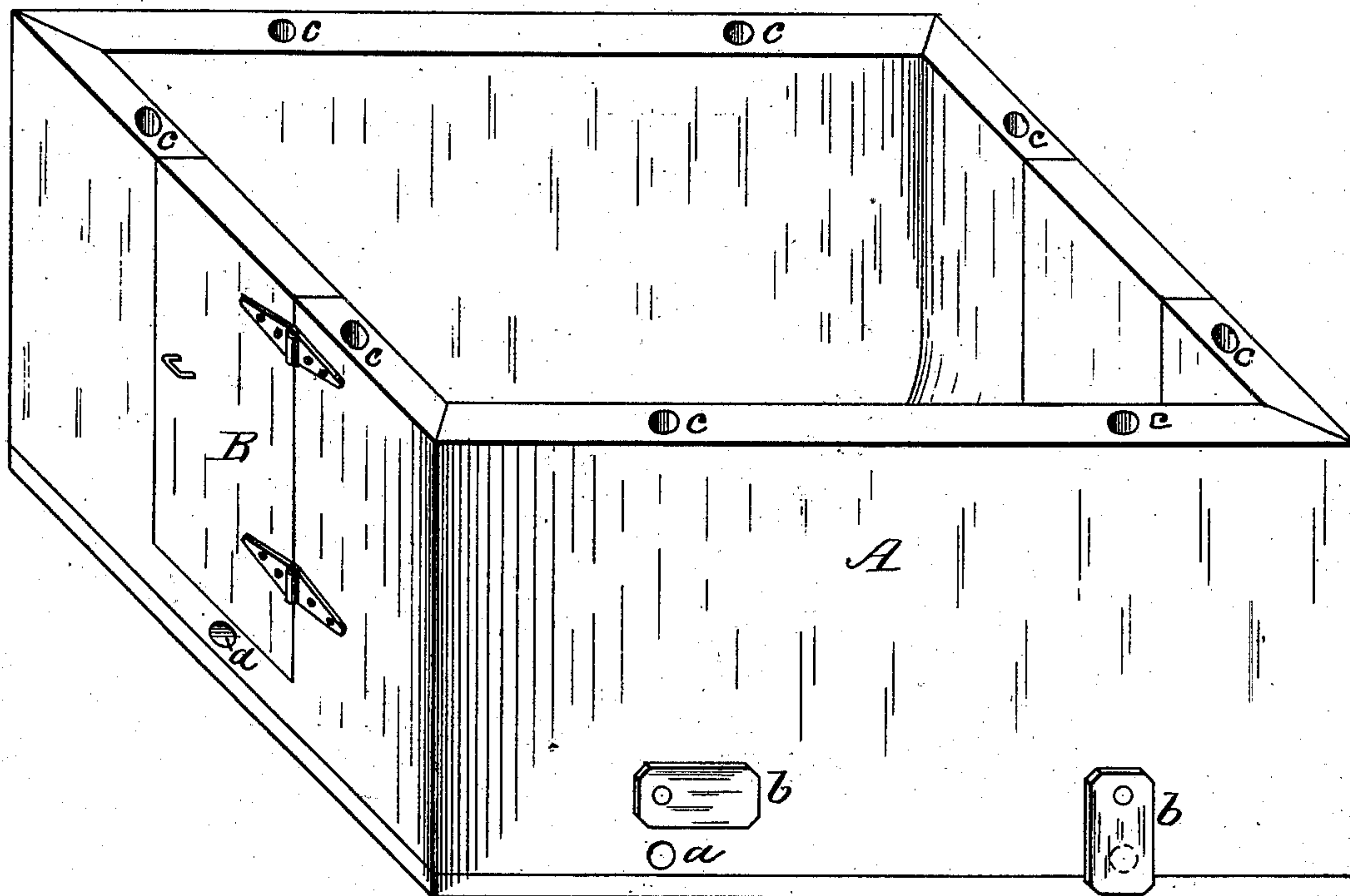
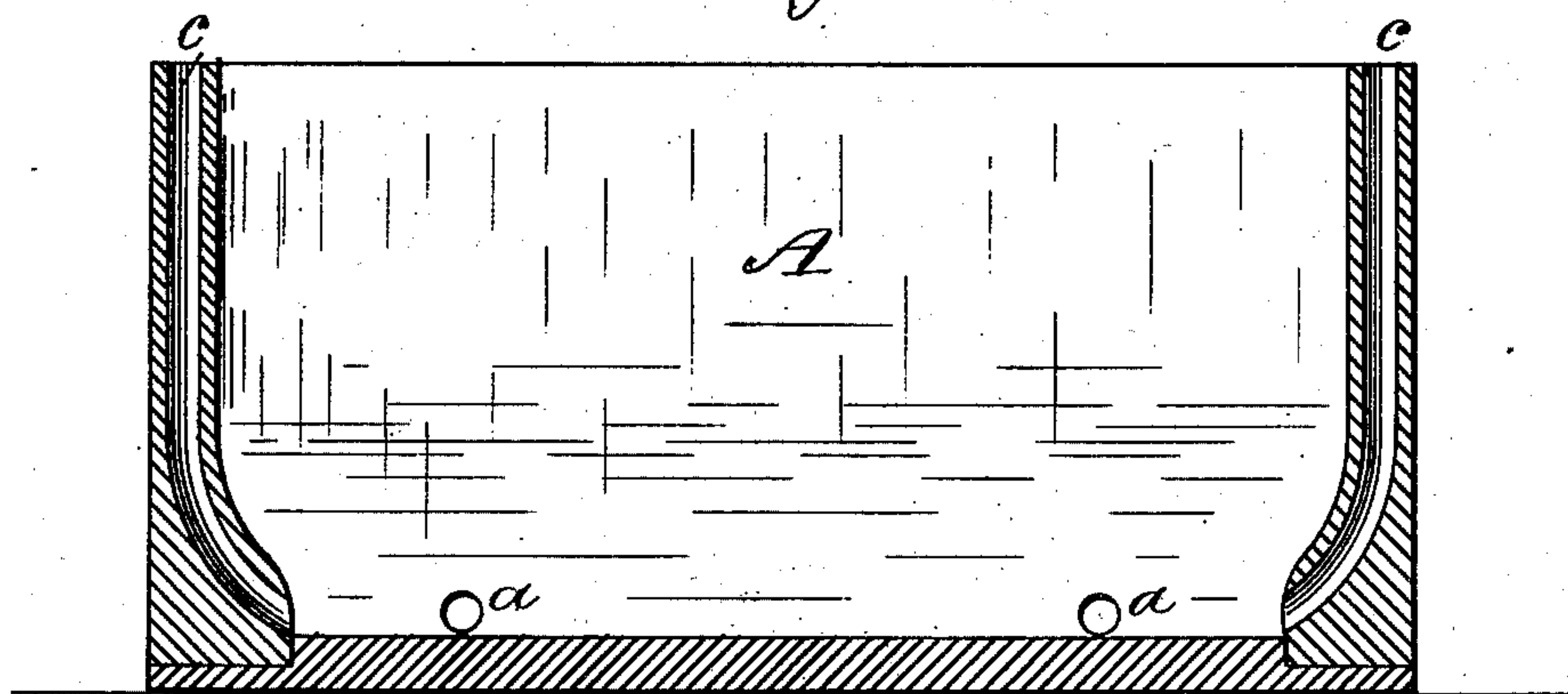


Fig. 2.



WITNESSES

Nat. E. Oliphant.

Geo. R. Porter.

INVENTOR

Benjamin F. Holland,

per Cha. H. Fowler,

Attorney.

UNITED STATES PATENT OFFICE.

BENJAMIN F. HOLLAND, OF UTICA, ILLINOIS.

LIME AND CEMENT KILN.

SPECIFICATION forming part of Letters Patent No. 224,912, dated February 24, 1880.

Application filed January 5, 1880.

To all whom it may concern:

Be it known that I, BENJAMIN F. HOLLAND, of Utica, in the county of La Salle and State of Illinois, have invented a new and valuable Improvement in Lime and Cement Kilns; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the annexed drawings, making a part of this specification, and to the letters and figures of reference marked thereon.

Figure 1 of the drawings is a representation of a perspective view of the kiln, and Fig. 2 is a vertical longitudinal section taken on line *x x* of Fig. 1.

The present invention has relation to lime and cement kilns; and it consists in the peculiar manner of constructing the kiln, whereby a more uniform draft is obtained and the rock burned more evenly with comparatively a small quantity of fuel, as will be hereinafter described, and subsequently pointed out in the claim.

In the accompanying drawings, A represents the kiln, of any convenient size and shape, and may be composed of stone, brick, or iron, as found most desirable. The bottom of the kiln A is filled up on the inside to a greater height than on the outside, and is covered with fire-brick to form a smooth surface to shovel from, also to prevent dampness from penetrating the rock after burning, and, also, the air is prevented from penetrating the bottom, which would tend to consume the heat.

The kiln A, near its bottom, is provided with draft or fire holes *a*, regulated by suitable doors *b*, said holes running horizontally from the outside to the inside of the kiln. The kiln is also provided with holes *c*, passing down diagonally through the walls thereof, and opening into the interior at the bottom of the kiln.

In using the kiln, suitable kindling is first placed upon the bottom thereof, at the mouth of the fire or draft holes *a*, also at the center of the kiln, upon the bottom, and in different directions. The kindling being thus placed upon the floor or bottom of the kiln, the floor is next covered with coal, after which

a layer of rock is placed thereon, and upon this a layer of coal, and then rock, and so on until the top of the kiln is reached, using less coal as the top is neared.

In filling the kiln suitable posts are first placed upon the floor in a vertical or upright position and the coal and rock filled in around them, the posts being withdrawn after the kiln is filled, thus leaving a hole or chimney. After the kiln is thus charged with kindling, coal, and rock, it is then ready for firing, which is accomplished by first dropping fire down through the openings at the center of the kiln formed by the vertical posts. The fire, passing down these openings, ignites the kindling at the bottom or floor of the kiln, and when the coal becomes thoroughly lighted I then light through the fire or draft holes *a* from the outside of the kiln. The kiln is now completely under way, and the heat from the center thereof draws that from the outside over the bottom or floor. The holes formed by the posts through the rock and coal at the center of the kiln are now filled up with fine coal and rock, thus compelling the kiln to obtain its draft through the main body of the rock and coal, after which the top of the kiln is covered over with fine slack-coal, and is allowed to remain until it is burned out. When the kiln is ready to draw or empty the doors B are opened and the burned rock shoveled out.

The holes *c*, passing down diagonally through the walls of the kiln, may also be used for firing when it is desired to quicken the burning of the coal and rock.

Having now fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

The lime or cement kiln A, having horizontal openings *a* near its bottom, and openings *c* through the vertical walls of said kiln, substantially as and for the purpose set forth.

In testimony that I claim the above I have hereunto subscribed my name in the presence of two witnesses.

BENJAMIN F. HOLLAND.

Witnesses:

JAMES KIORDAN,
JOHN C. WALKER.