

# UNITED STATES PATENT OFFICE.

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## IMPROVEMENT IN APPARATUS FOR BURNING BRICK, &c.

Specification forming part of Letters Patent No. **215,904**, dated May 27, 1879; application filed  
June 12, 1878; patented in England, August 23, 1877.

### *To all whom it may concern:*

Be it known that we, JOHN FOSTER, of Leeds, and CHARLES JAMES FOSTER, of Normanton, both in the county of York, England, have invented new and useful Improvements in Kilns and in Apparatus Employed in Burning Bricks and other Plastic Forms, which improvements are fully set forth in the following specification, reference being had to the accompanying drawings.

Our invention has reference to kilns and other apparatus employed in burning bricks and other forms.

The object of our improvements is to effect a saving of labor, better burning, and less damage to the bricks or other plastic forms, also economy in fuel and in the construction of the kiln.

Figure 1 is a longitudinal elevation; Fig. 2, an end elevation; Fig. 3, a transverse section, enlarged, through A B, Fig. 1. Figs. 4, 5, and 6 represent the means employed for joining or connecting the wagons; Fig. 7, a sectional plan through C D, Fig. 1; and Fig. 8, a sectional plan, on a reduced scale, through E F, Fig. 1.

The kiln consists of one long parallel chamber, *a*, into which the bricks or other plastic forms are passed on wagons *b*, constructed entirely of metal, the surfaces or tops of which are covered with fire-brick or fire-clay, *c*, to resist the heat. These wagons are constructed so as to fit the sides *d* of the interior, in order to be as air-tight as practicable, and are shown at *e*.

When in operation the burning part occupies the center part of the kiln, stationary fires being provided at *f*. When required, fuel may be fed among the bricks being burned through holes *g* at the top of the kiln.

The wagons are passed into the kiln and "scarfed" onto each other, or overlap, as shown at *h*, preserving thereby the wagons, and also preventing cold air from rushing in where not required.

In order to keep the wagons cool at the burning part of the kiln, we provide air-holes *i*, through which a current of air passes to the various parts thereof. The kiln also is provided with openings at each end, sufficiently

large to allow a current of air to pass under the wagons. A progressive motion is given, when required, to the wagons *b*, containing the bricks or other forms, from some suitable motive power.

The chamber *a* may be made of any required length on an incline, though not necessarily so, and to contain a convenient number of loaded wagons at one time. After the bricks or other forms on each wagon are sufficiently burned, the wagon is pushed forward, and another containing unburned forms takes its place at the burning part of the kiln.

As each wagon containing unburned forms is admitted at the end *j* of the kiln, another containing burned forms may simultaneously be passed out of the end *k*. We by preference close the end *j* with a sliding or other door, *l*, and leave the end *k* open, and provide the stack or chimney *m* at any suitable distance from the end *j*, into which openings or flues are made from each side of the kiln at *n*. By this arrangement the cool air passes into the kiln through outlet end *k*, (whereby the burned bricks or other forms are gradually cooled,) thence to the fires *f*. The inlet end *j*, for unburned forms, acts as the flue for the heated gases, from whence they pass through *n* to the chimney or stack. By this arrangement the forms or bricks are gradually heated before being submitted to the intense heat of the firing part *f*.

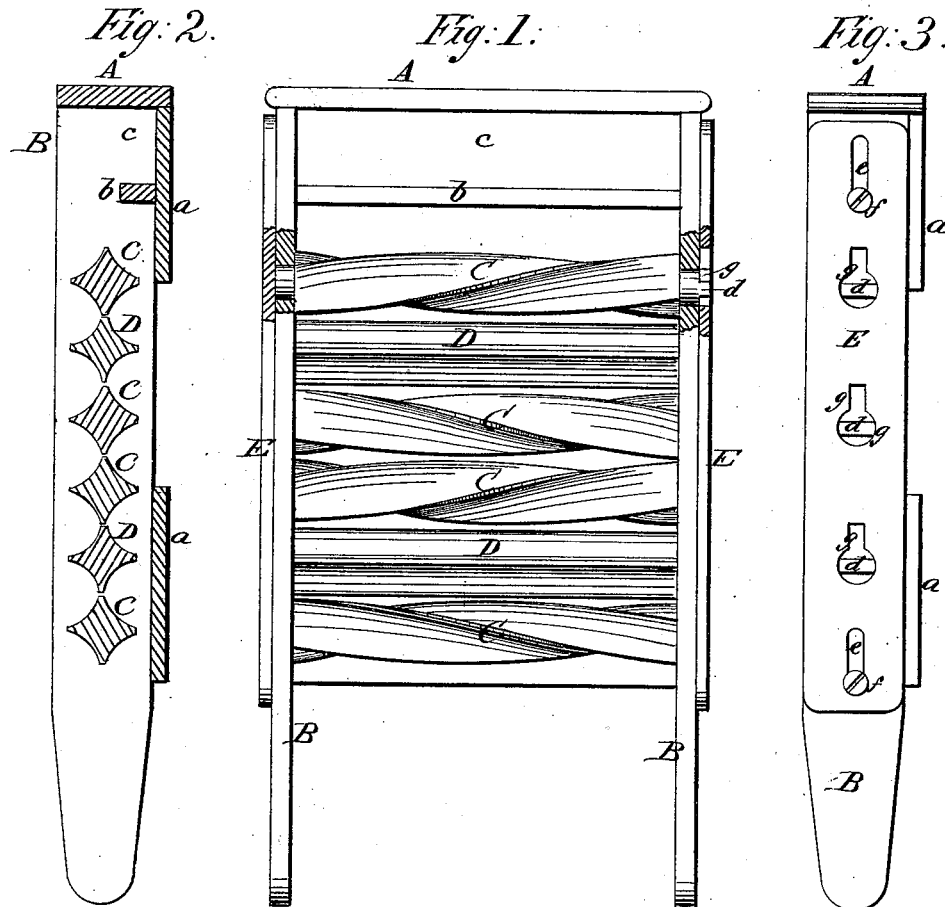
When the wagons are drawn from the kiln they may be taken to any convenient place for unloading, and for the purpose of conveniently passing or conducting the wagons from one end of the kiln to the other, and through it, we provide the rails *o*, which are of ordinary construction. The brick-machines may be arranged as shown at *p*.

In some cases, instead of the arrangement shown at Fig. 1, for forming the connection between the wagons for the purpose of preventing the heat on the top side passing below, or for confining the same to the upper part of the kiln, we couple or connect the ends of the wagons so as to fit as air-tight as may be required, as shown at Figs. 4, 5, and 6. The ends are formed of H-iron *q* and *q'*. (Shown at Fig. 4, and representing the ends of two

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No. 215,905.

Patented May 27, 1879.



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