



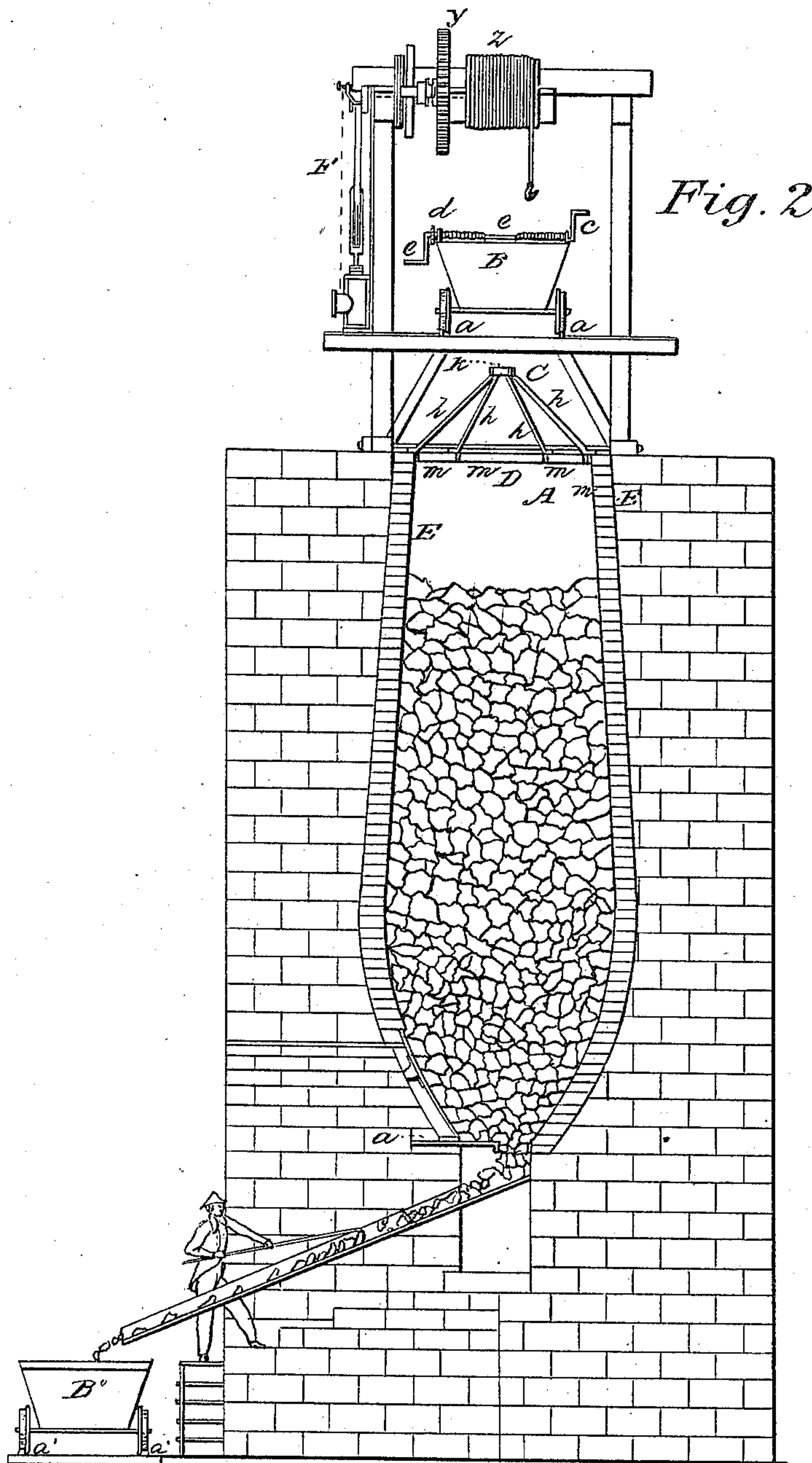


J. B. SPEED.

Lime Kiln.

No. 97,243.

Patented Nov. 23, 1869.



Witnesses:

A. P. Speed  
Wm Broster Kennedy

Inventor:

James B. Speed

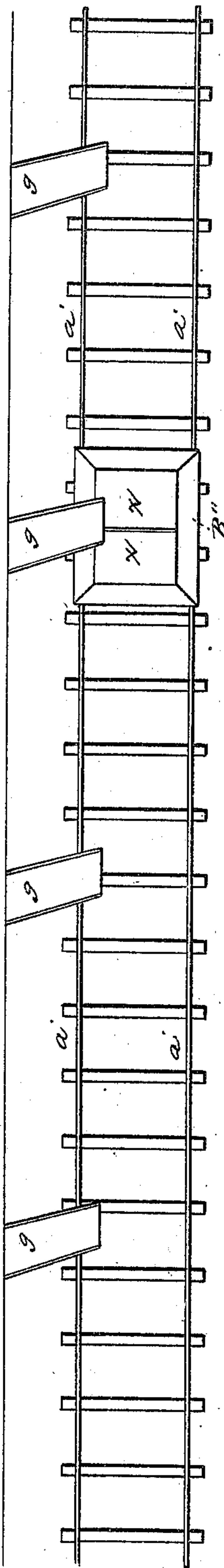
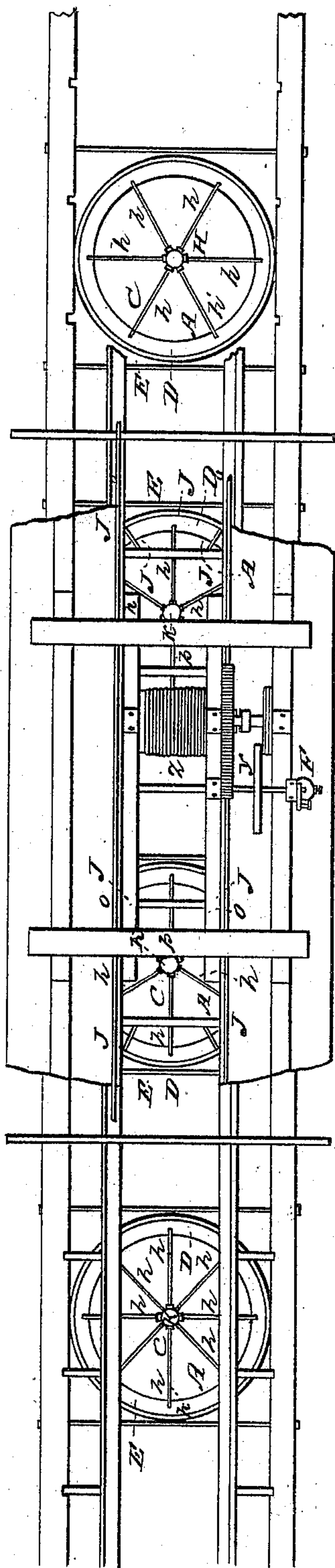


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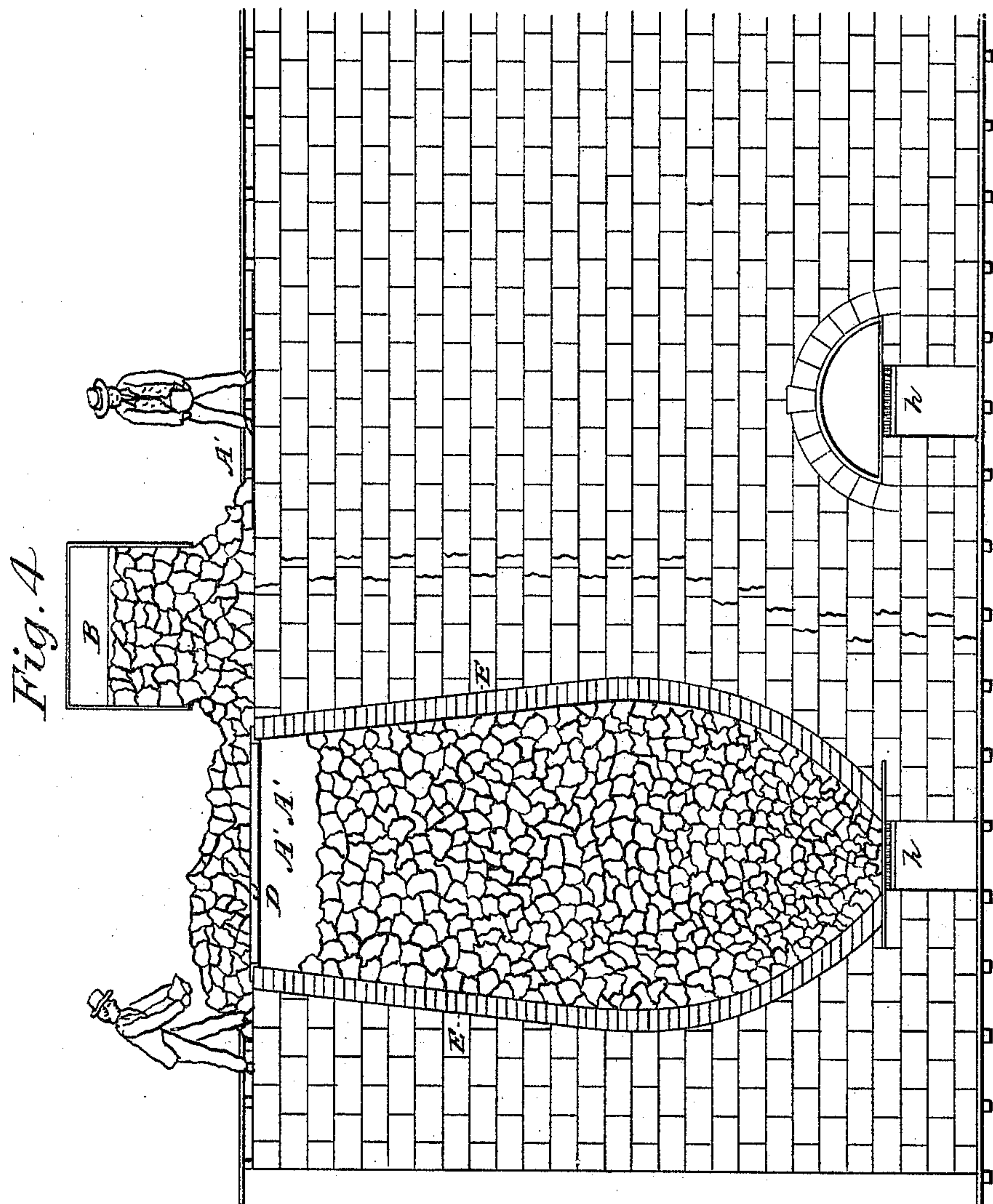
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5 Sheets—Sheet 4.

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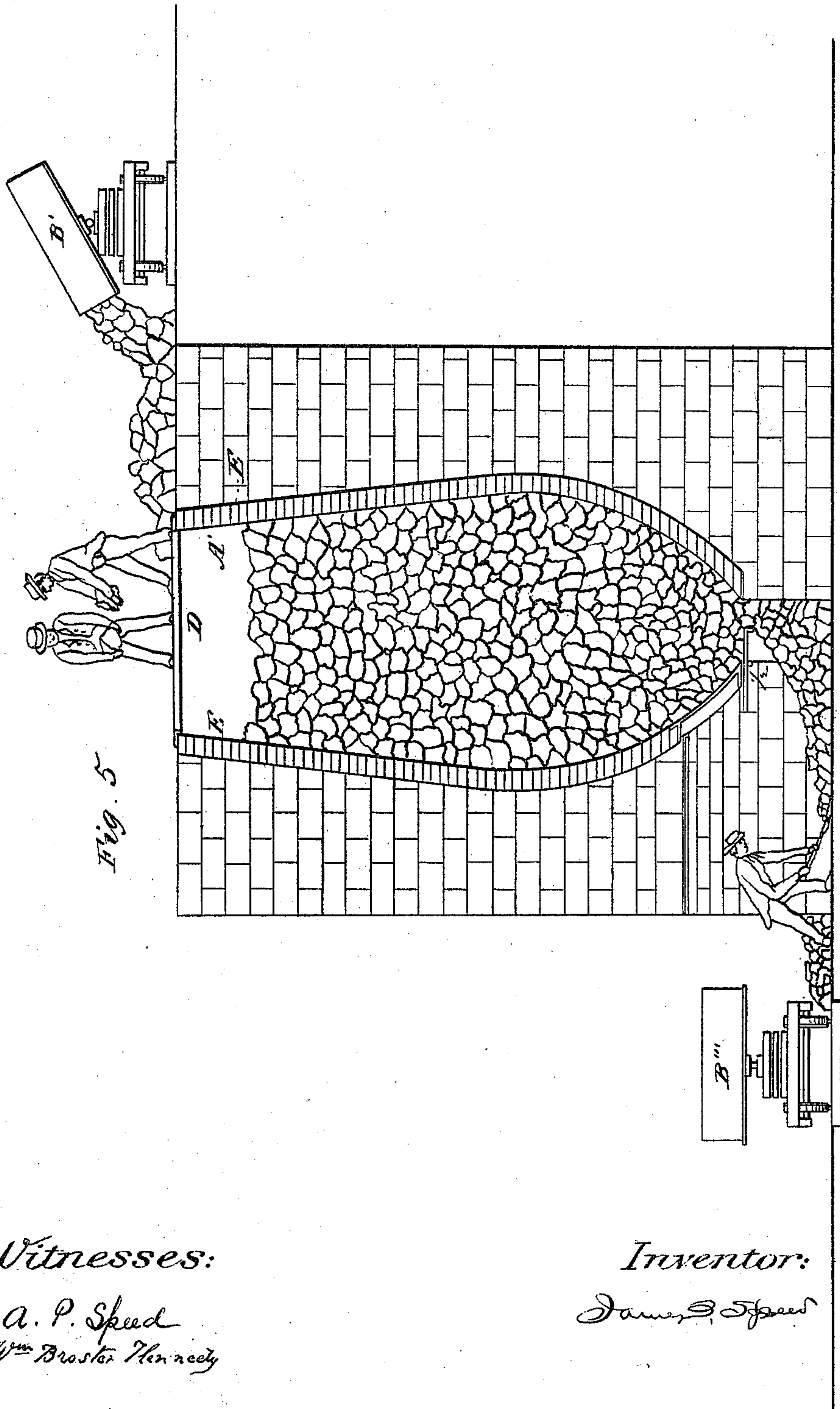


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# United States Patent Office.

JAMES B. SPEED, OF LOUISVILLE, KENTUCKY.

Letters Patent No. 97,243, dated November 23, 1869.

## IMPROVEMENT IN LIME-KILNS.

The Schedule referred to in these Letters Patent and making part of the same.

*To all whom it may concern :*

Be it known that I, JAMES B. SPEED, of Louisville, in the county of Jefferson, and State of Kentucky, have invented a new and useful Improvement in Lime and Cement-Kilns; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the annexed drawings, making part of this specification, in which—

Figure 1 is a side elevation, partly in section, of my improved kiln, showing the receptacle for the material to be burned, the distributor over the mouth of the kiln, the car for transporting the material, the machinery for receiving the same, and the chutes for delivering the same into a car after it has been burned;

Figure 2 is an end view, partly in section, of the parts shown in fig. 1;

Figure 3 is a plan or top view of a series of kilns, arranged according to my plan, together with the machinery for elevating the material to be burned;

Figure 4 is a side view, showing the method in use for filling kilns previous to my invention; and

Figure 5 is an end view, showing the same method, and also that of delivering the material after it has been burned.

Corresponding letters refer to corresponding parts in the several figures.

This invention relates to kilns for burning lime-rock, or rocks which, when burned, produce hydraulic cement, and other similar substances, the products of which are similar to those named; and

It consists in the combination and arrangement of devices for that purpose.

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

A, in the drawings, refers to a kiln or receptacle, in which the rock is to be placed to be burned. It may be of any approved form, and of any capacity to meet the requirements of the circumstances under which it is to be used.

Upon the top of this receptacle, a ring or curb, D, is to be placed, which is to be provided with a downwardly-projecting flange, as shown in fig. 1 of the drawings, the object being to protect the upper tier of bricks or stones from injury by the material as it is being dropped into the kiln, and to provide a smooth and secure foundation for the distributing-frame C to rest upon.

This frame consists of a ring or plate, *k*, of small diameter, to which are attached rods, *h*, which extend downward, at about the angle shown in fig. 1, to and are connected with the curb D by means of rivets, or they may be provided with projections, *m*, as shown in the drawings, which may rest upon the inner edge of such curb, and thus retain the frame in position

while the kiln is being filled with rock. In kilns for purposes similar to that to which mine is to be devoted, as they have heretofore been constructed, the rocks have been placed in them by being taken in the hands of the person performing the work, and dropped in promiscuously, taking care only to leave interstices between them for the passage of the products of combustion when the fire has been lighted.

The above-described operation is a slow and tedious one, as well as expensive, and this part of my invention is intended to remove these objections, by providing a distributor to be placed over the mouth of the kiln, so that when the car containing the rock, with which it is to be filled, is brought over such mouth, and its bottom opened, the rocks or stones will fall thereon, and thus be guided into the kiln, and placed in their proper positions without any manipulation by the person in attendance.

B represents a car, which is peculiarly adapted for discharging the material upon the distributor C, it having a double-hinged and folding bottom, *x x*, as shown in fig. 1, with chains, *b b*, connecting the bottom *x x* with shaft *c* on top of the car, said shaft having a crank on one or both ends thereof, and a ratchet-wheel for retaining the swinging bottoms in position when the car is being moved with its load, as well as permitting of the instantaneous emptying of the same by dropping the bottoms when it has been brought over the kiln.

The machinery for elevating the car to its position over the mouth of the kiln consists of any suitable windlass, which may be driven with a small engine, as shown in fig. 2, or it may be driven by a belt or gearing from any other motive-power, the shaft or drum around which the rope or chain passes being provided with a brake for lowering the car after it has been unloaded, as clearly shown in fig. 1.

This machinery rises above a railroad or track, upon which the car B runs, which is so arranged, that when said car is drawn up to its position over the mouth of the kiln, said car will be in a position to discharge its contents directly upon the distributor C.

The lower ends of these kilns are provided with grates in the usual way, which are so arranged that they may be withdrawn at the proper time, and the contents of the kiln be allowed to pass out into chutes, *g*, which convey the same to a car, B', which is to be arranged to run upon a track provided for that purpose, and so located as to bring the car directly under the ends of said chutes, as shown in the drawings.

Some of the advantages due to my invention may be enumerated as follows:

First, as a consequence of combining the kiln A, car B, and the distributor C, I am enabled to fill the kilns with less expense, and with an expenditure of



less time than by the former method, and hence a much greater amount of lime or cement may be burned in a given length of time. The difference between the old method and the one invented by me will be fully illustrated by a comparison of figs. 1, 2, and 3 of the drawings, with figs. 4 and 5 of the same.

Second, as a consequence of the arrangement of the chutes at the lower ends of the kilns with reference to the same, and the cars for the reception of the material to be delivered, much time is saved, and the removal of any impurities, which may be found in such material, greatly facilitated by being exposed to full view while passing through or over said chute, thus enabling the person in attendance to remove the same before they enter the car.

Having thus described my invention,

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

1. The distributor C, to be placed over the mouth of the kiln, when constructed substantially as and for the purpose specified.

2. The combination and arrangement of the kiln A, distributor C, and car B, substantially as and for the purpose set forth.

In testimony whereof, I have signed my name to this specification, in the presence of two subscribing witnesses.

JAMES B. SPEED.

Witnesses:

A. T. KENDALL,  
JOS. CLEMENTS.