

No. 754,559.

PATENTED MAR. 15, 1904.

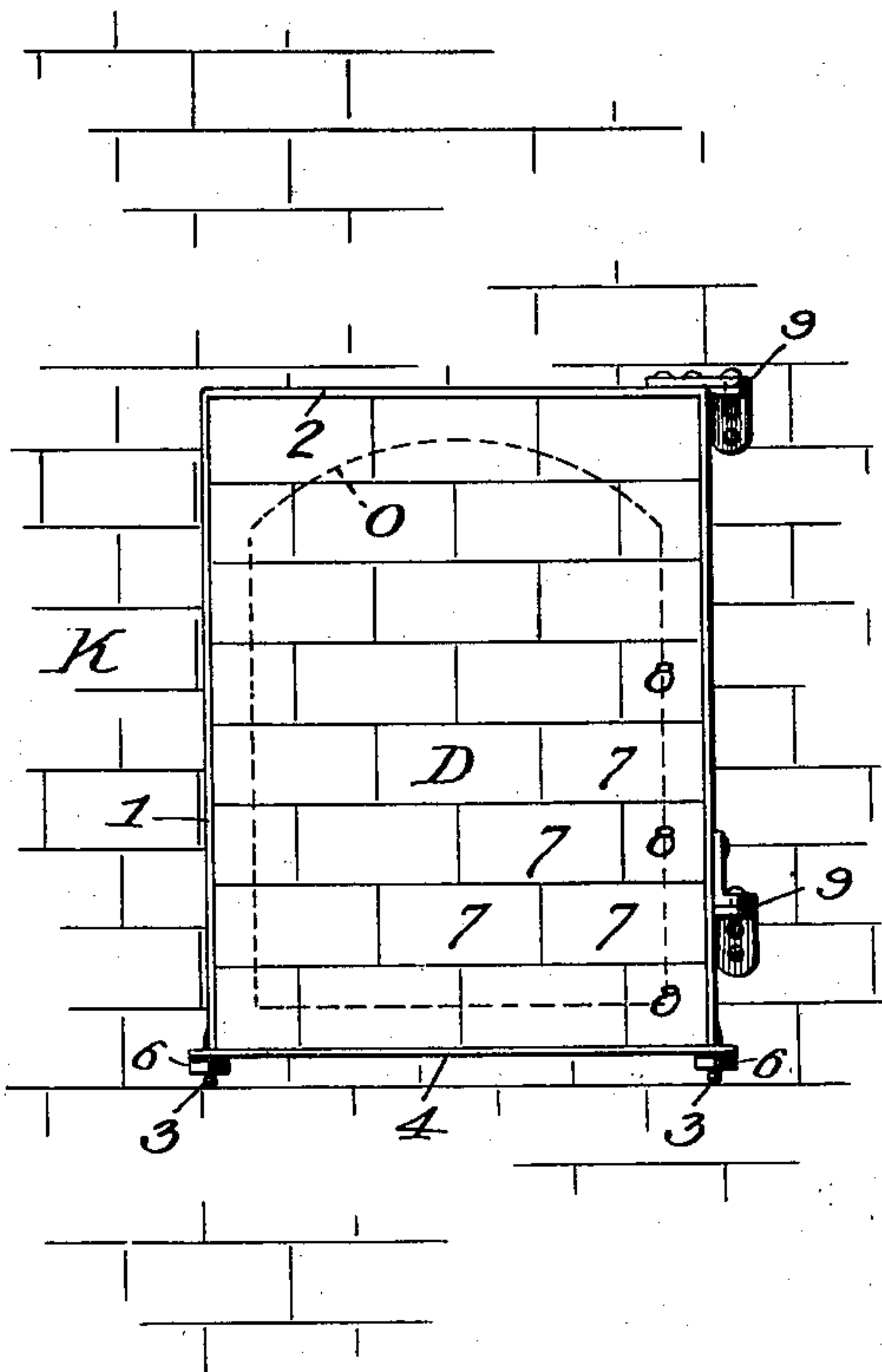
H. H. HACKERD.

KILN DOOR.

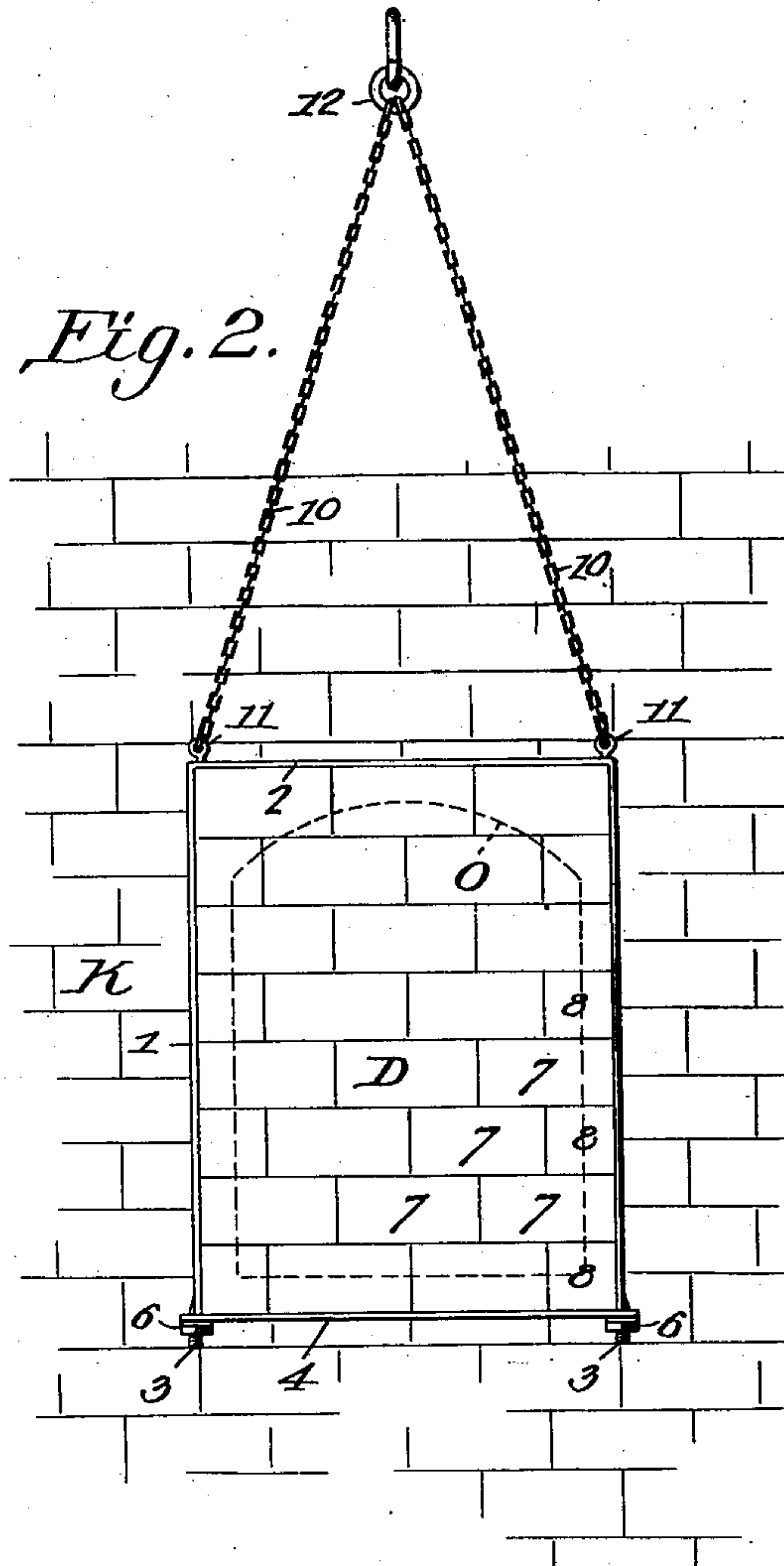
APPLICATION FILED SEPT. 10, 1903.

NO MODEL.

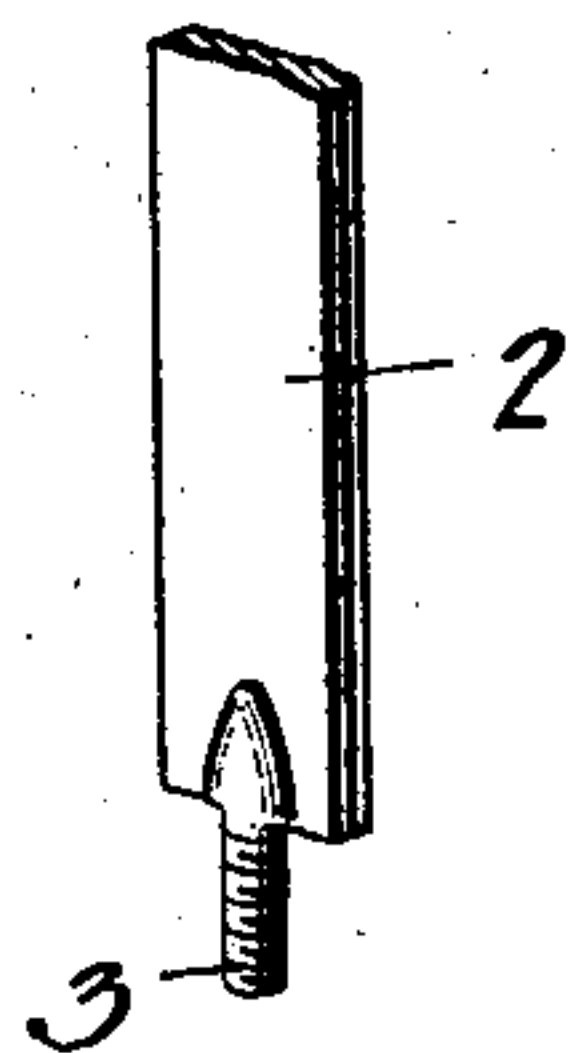
*Fig. 1.*



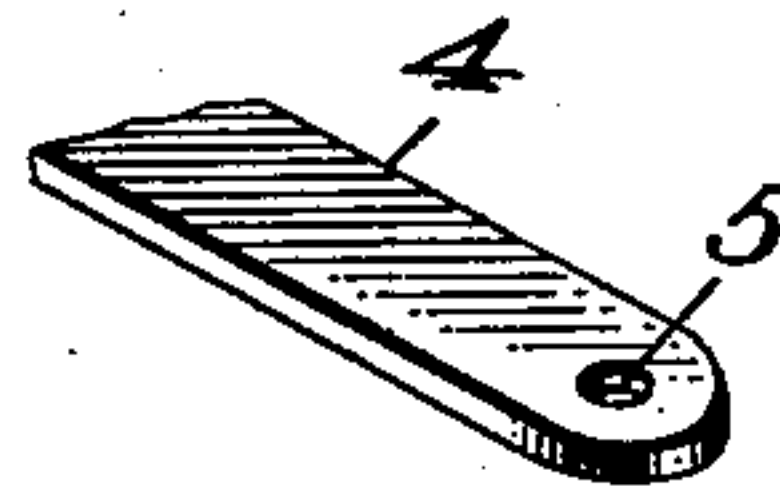
*Fig. 2.*



*Fig. 3.*



*Fig. 4.*



Witnesses  
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# UNITED STATES PATENT OFFICE.

HENRY H. HACKERD, OF MANSON, INDIANA.

## KILN-DOOR.

SPECIFICATION forming part of Letters Patent No. 754,559, dated March 15, 1904.

Application filed September 10, 1903. Serial No. 172,677. (No model.)

*To all whom it may concern:*

Be it known that I, HENRY H. HACKERD, a citizen of the United States, residing at Manson, in the county of Clinton and State of Indiana, have invented a new and useful Door for Kilns or Furnaces, of which the following is a specification.

This invention relates to kiln-doors, and is desired for use upon brick-kilns, pottery-kilns, and all other kilns in which the temperature produced is so high that a door of refractory material is rendered necessary.

The object of the invention is to provide a kiln-door consisting almost entirely of refractory material which is a poor conductor of heat, which will be cheap to manufacture, and in which the refractory material which is exposed to the heat may be easily replaced when burned out.

With the objects above stated and others in view, as will appear when the invention is fully disclosed, the same consists in the construction and combination of parts of a kiln-door hereinafter described and shown in two slightly-modified forms in the accompanying drawings, forming part of this specification, it being understood that changes in the form and proportions of the parts, as well as in their mode of assemblage, may be resorted to without departing from the spirit of the invention or sacrificing its advantages.

In the drawings, Figure 1 is a view in front elevation of one form of embodiment of the invention. Fig. 2 is a similar view of a modified form of the invention. Fig. 3 is a detail view showing one end of the member forming the top and side portions of the frame. Fig. 4 is a detail view of the member forming the bottom of the frame.

Referring to the drawings, in which corresponding parts are designated by the same characters of reference, K designates generally the body of the kiln having an arched fire-opening O. (Indicated in dotted lines.)

D designates the door, which consists of an outer frame (designated generally as 1) and comprising, preferably, the member 2, extending around three sides of the door and terminating at its ends in threaded portions 3.

As best seen in Fig. 3, the member 2 is throughout the greater portion of its length in the form of a wide flat strap and is adapted to fit smoothly against the ends and sides of bricks. The bottom of the frame consists of a bar 4, provided at its ends with eyes 5 for the passage of the threaded terminals 3 of the member 2, and the bar is secured in position by means of nuts 6, screwed upon the threaded terminals 3 of the member 2. The body portion of the door consists entirely of brick arranged in the manner shown. The width of the door will ordinarily be equal to the length of three whole brick, which will be used in forming alternate courses, and the intermediate courses will be made up of two whole brick and two half bricks or bats, the whole brick being designated as 7 and the bats as 8. The arrangement of brick and bats shown is designed to break joints in the body of the door, and consequently to give it greater solidity than it would otherwise possess. The door so constructed may be mounted on hinges 9, as shown in Fig. 1, or the door may be supported by means of chains 10, as shown in Fig. 2. The chains 10 engage with eyes 11 at the upper corners of the door and with a ring 12 at the upper ends of the chains, which is adapted for suspension from a hook 13, fixed in the kiln structure.

In the manufacture of the door fire-brick will preferably be employed on account of the greater resistance to high temperature; but in the absence of fire-brick ordinary brick may be employed and may be renewed from time to time as needed. The frame will of course be formed of iron or steel and will be made of dimensions corresponding to the size of the opening to be covered by the door.

When the brick forming the body of the door have been burned out or cracked from the excessive heat to which the door is subjected, the nuts 6 will be loosened, so that the damaged brick may be removed and fresh brick will be arranged in the frame and clamped therein by screwing the nuts into contact with the bar 4, forming the bottom of the frame.

Having thus described the construction and



advantages of my invention, what I claim as new, and desire to secure by Letters Patent, is—

5 1. A kiln-door comprising a body formed wholly of ordinary brick and a frame within which said brick are secured, said frame consisting of a wide, flat strap extending around the body of the door except at one side and having threaded extensions at its ends, a bar  
10 extending across the other side of said body and having eyes through which said extensions pass, and nuts on said threaded extensions to clamp said bar in contact with the body of the door.

15 2. A kiln-door consisting of a body formed wholly of ordinary brick and a frame within which said brick are secured, said frame con-

sisting of wide, flat members disposed around said body of brick, and means for clamping said frame members in close contact with the  
20 body of brick.

3. The combination with a kiln or furnace, of a door and suspension devices comprising converging members attached to the upper  
25 corners of the door, and a stationary supporting member fixed in the wall of the kiln from which said converging members hang.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

HENRY H. HACKERD.

Witnesses:

AB BRANDON,  
J. H. STEWART.