

No. 692,339.

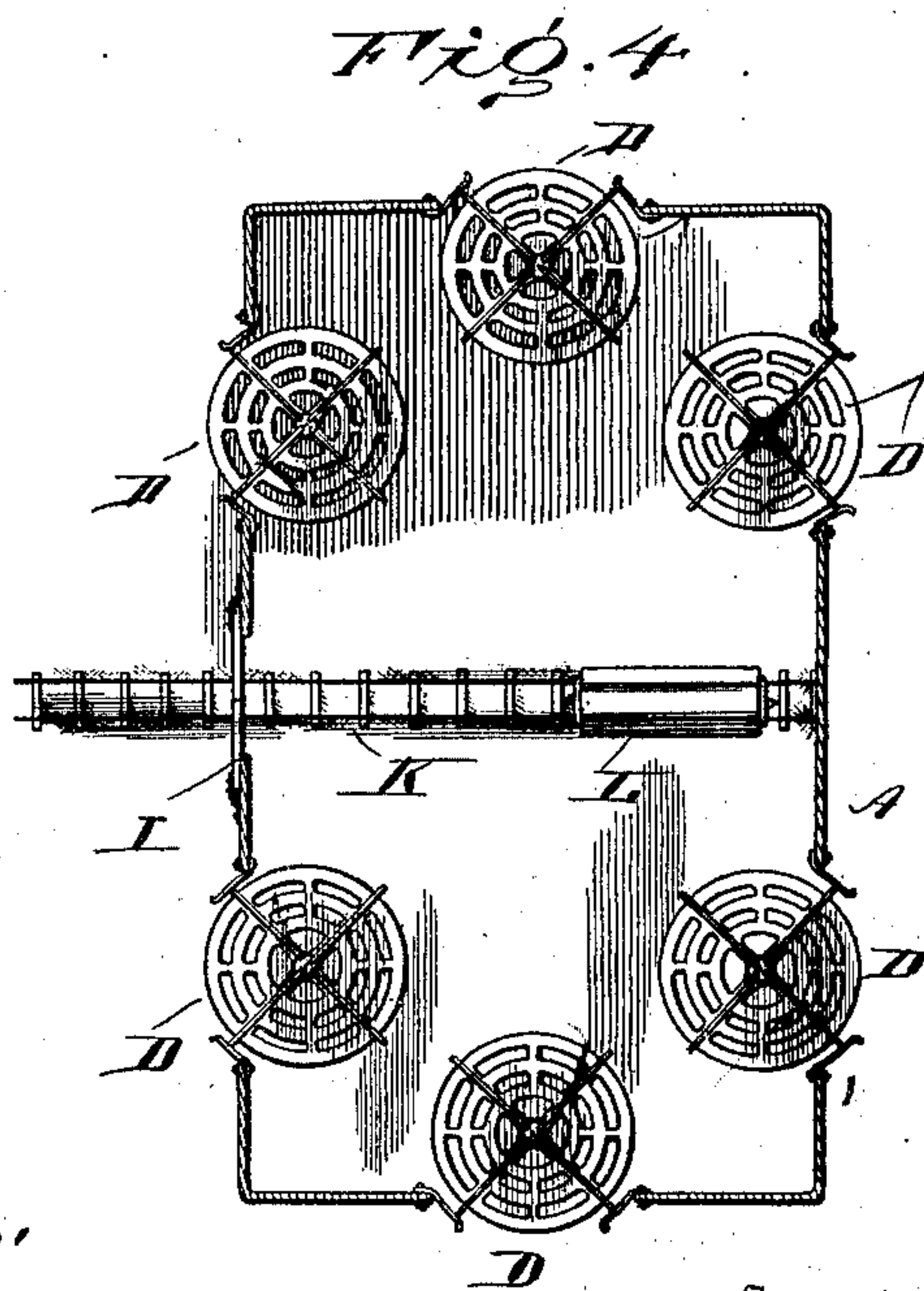
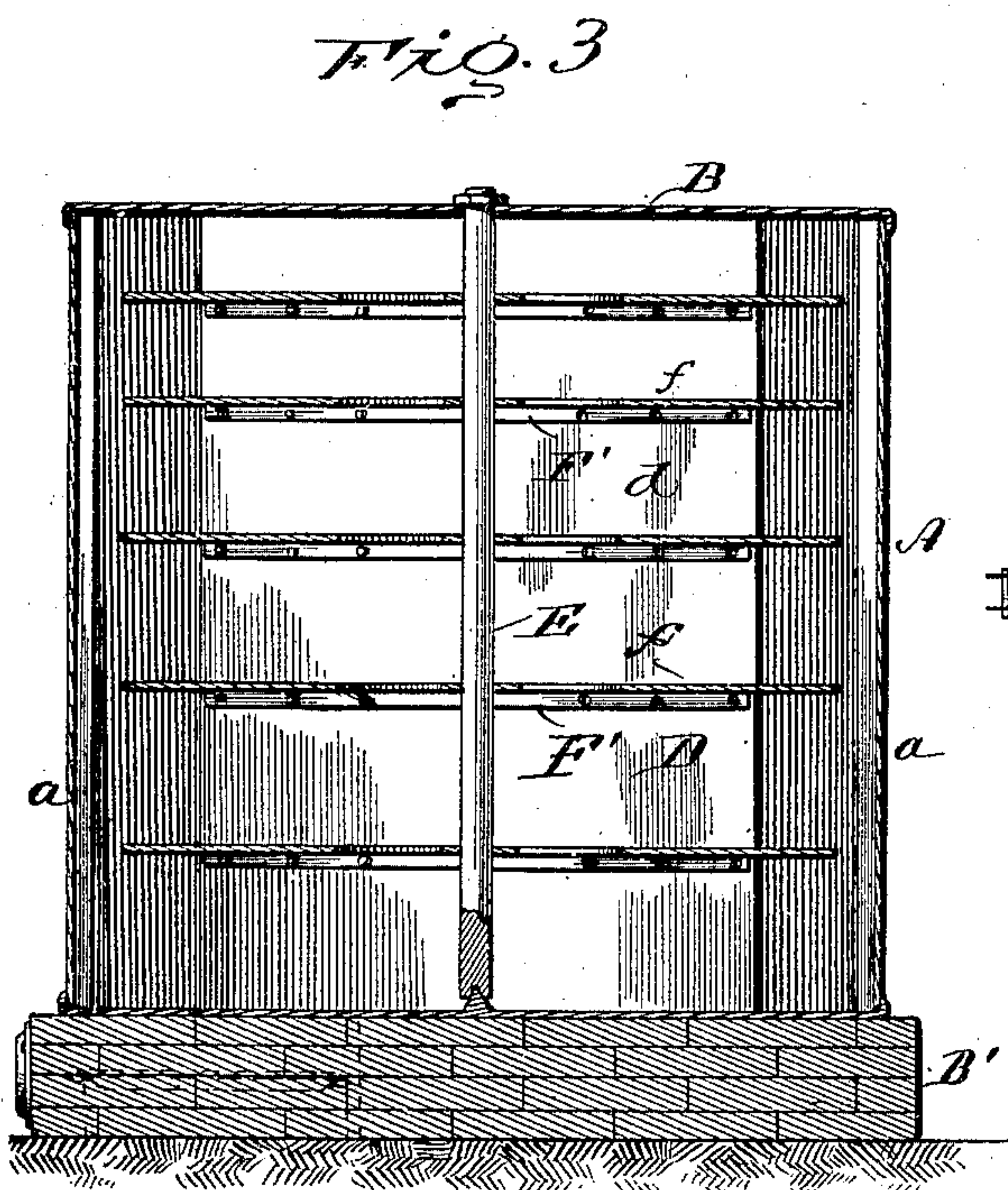
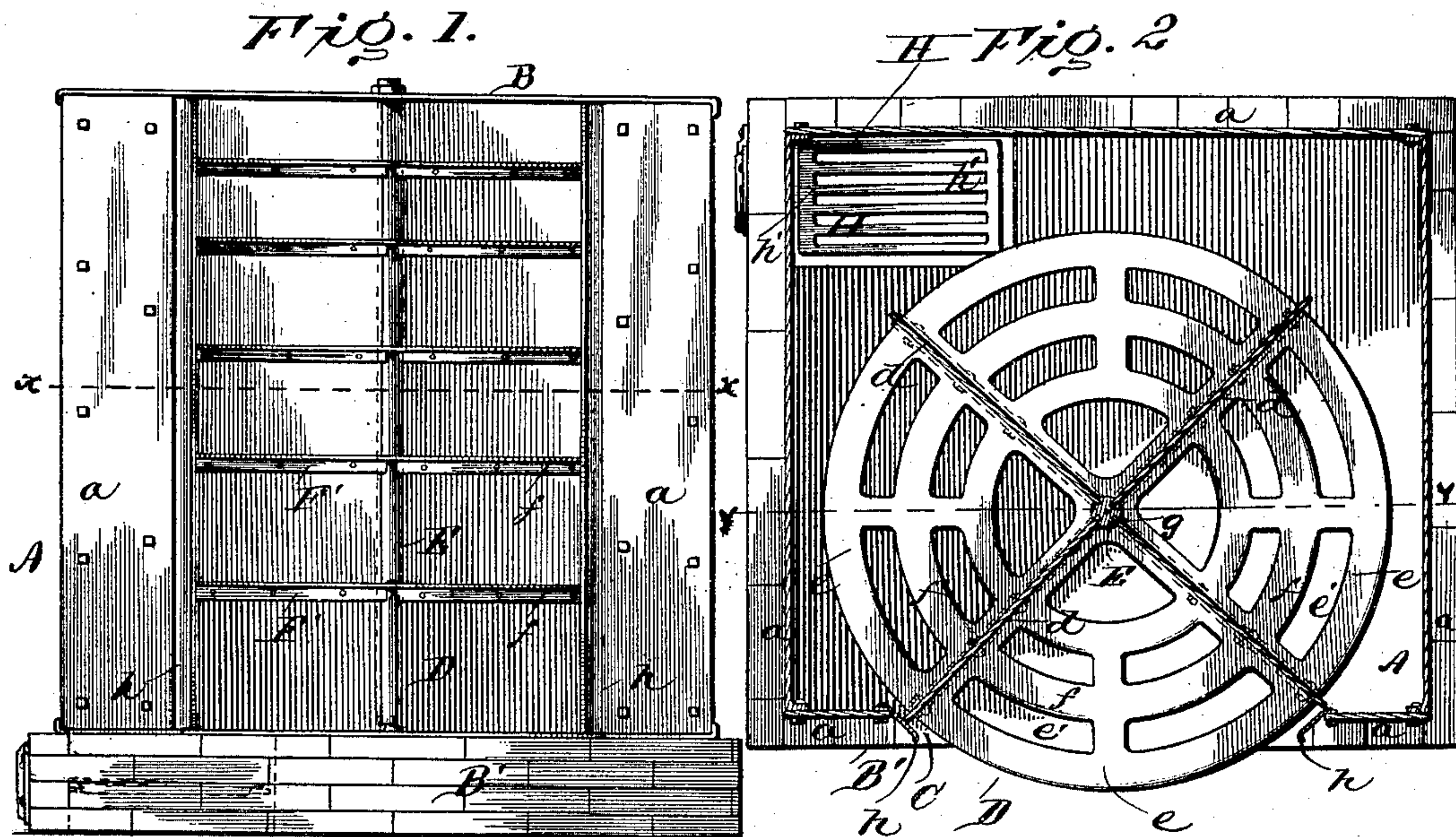
Patented Feb. 4, 1902.

R. F. PHILLIPS.

KILN FOR DRYING GREEN SAND CORES.

(Application filed June 9, 1900.)

(No Model.)



Witnesses

Johnnie  
George Kane

By

Connelly Bros

Attorneys

Inventor  
Robert F. Phillips



# UNITED STATES PATENT OFFICE.

ROBERT F. PHILLIPS, OF PITTSBURG, PENNSYLVANIA.

## KILN FOR DRYING GREEN SAND CORES.

SPECIFICATION forming part of Letters Patent No. 692,339, dated February 4, 1902.

Application filed June 9, 1900. Serial No. 19,746. (No model.)

*To all whom it may concern:*

Be it known that I, ROBERT F. PHILLIPS, a citizen of the United States, residing at Pittsburgh, in the county of Allegheny and State of Pennsylvania, have invented certain new and useful Improvements in Ovens or Kilns for Drying Green Sand Cores; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention has relation to ovens or kilns for drying and baking green sand cores for metal-molds, and has for its object the provision of a novel construction in which the essential feature is a vertically-journaled rotary reel or rack divided by radial partitions into compartments having horizontal shelves to support the cores while the same are being dried, said reel being so arranged within a suitable oven having an opening in one of its walls, opposite which the reel or rack is arranged, so that by turning the reel one compartment at a time may be exposed and access had to its contents without opening the oven or allowing the heat thereof to escape.

This invention consists in the novel construction, combination, and arrangement of parts hereinafter described and claimed, reference being had to the accompanying drawings, wherein—

Figure 1 is a front elevation of an oven or kiln embodying my invention. Fig. 2 is a horizontal section of the same on the line *xx* of Fig. 1. Fig. 3 is a vertical section on the line *yy* of Fig. 2. Fig. 4 is a horizontal section of an oven of modified construction on a reduced scale.

The oven A (shown in Figs. 1, 2, and 3) may be of any desired character; but for convenience and economy I prefer a box-like structure of rectangular form and of suitable size composed of cast-metal plates *aa*, bolted together at the corners and covered by a roof plate or plates B, bolted to the side walls, the whole resting on a foundation of masonry B'. An opening C is provided in the front wall, extending from top to bottom of the oven.

Within the oven is arranged the reel D, consisting of the central shaft E, journaled at top and bottom of the oven, the radial plates *dd*,

forming partitions between which are located compartments *ee*, and the shelves *ff*, secured at their ends to the partitions and preferably formed with openings *e'e'* for the circulation of hot air through the shelves. The shaft E is channeled lengthwise at *gg* to receive the inner edges of the partitions *dd*, which are held in place by the shelves, the latter being segmental cast-metal plates with flanges *F'F'* at their ends, through which they are bolted to the partitions. The reel D is so located and proportioned to the front opening in the oven that its peripheral line extends some distance outside the oven, as shown in Fig. 2. The reel therefore turns partly through the opening, the front wall-plates of the oven terminating at their inner edges close enough to the reel to produce a sufficiently close joint to prevent the undue escape of heated air around the partitions of the exposed compartment of the reel. To render the front opening nearly air-tight and prevent the reel from turning too freely, I secure spring-plates *hh* to the front wall-plates at their inner edges and bend the same outwardly on curves nearly concentric with the reel and extend the partitions *dd* outwardly beyond the front edges of the shelves, so that the edges of the partition will press against the springs, thus forming a sufficiently close joint to confine the heated air within the oven during the exposure of one of the compartments and at the same time prevent the reel from being accidentally turned while the cores are being arranged on the shelves or removed therefrom. Ample space is left within the oven and around the reel for the free circulation of heated air. The front opening is not absolutely air-tight, so that sufficient space is left at the joints for the escape of sufficient air to promote circulation within the oven and for the escape of the moisture or vapors arising from the cores.

The oven may be heated in any convenient way, as from a gas or other furnace forming the foundation of the oven. I have illustrated such a furnace at H, and where coke or other solid fuel is used grate-bars *h'h'* are employed. If coal or other smoke-giving fuel is used, the furnace will be provided with a stack passing through the oven and a casing



sufficient to radiate the required amount of heat without allowing the smoke to escape into the oven.

Fig. 4 illustrates an oven adapted for the reception of sand cores which on account of their size or shape cannot be conveniently arranged on the shelves of the reel. The oven is large enough to accommodate sand cores on stationary shelves or on the floor and has a doorway I in one of its walls, through which the oven is entered. A track K may be laid on the floor running from the mold-room into the oven through the doorway and a car or truck L employed to convey the cores into and out of the oven.

Any desired number of reels may be arranged at different points, as shown, their relation to the oven being the same as the reel shown in Figs. 1, 2, and 3, and such reels may be used to hold the smaller cores or those which for any reason it may be desired to inspect, insert, or remove without opening the oven.

Having described my invention, I claim and desire to secure by Letters Patent—

1. In an oven for drying green sand cores consisting of a rectangular metallic casing, having an opening in one of its walls, and

friction-plates at the edges of said opening, a rotary reel or rack having vertical radial partitions projecting beyond the edges of the shelves, and horizontal shelves, the partitions arranged to contact with said plates and to press against the same.

2. An oven for drying green sand cores, consisting of the base B', having a furnace or heater located at the back part thereof, a rectangular box-like structure A resting on said base, and composed of plates bolted together, one of which, forming the front of the oven, is formed with an opening D, a reel arranged within the oven so as to project partly through said opening and consisting of a central shaft, a series of radial partitions, and a series of segmental shelves arranged in alined sets forming circles, and spring-plates h, h, attached to the edges of the opening D, against which the partitions contact, the edges of said partitions projecting beyond the edges of the shelves, substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

ROBERT F. PHILLIPS.

Witnesses:

J. A. BLEICHNER,

H. A. ALBERTTE.