

C. STEWART.

REEL OVEN.

No. 377,965.

Patented Feb. 14, 1888.

FIG. 1

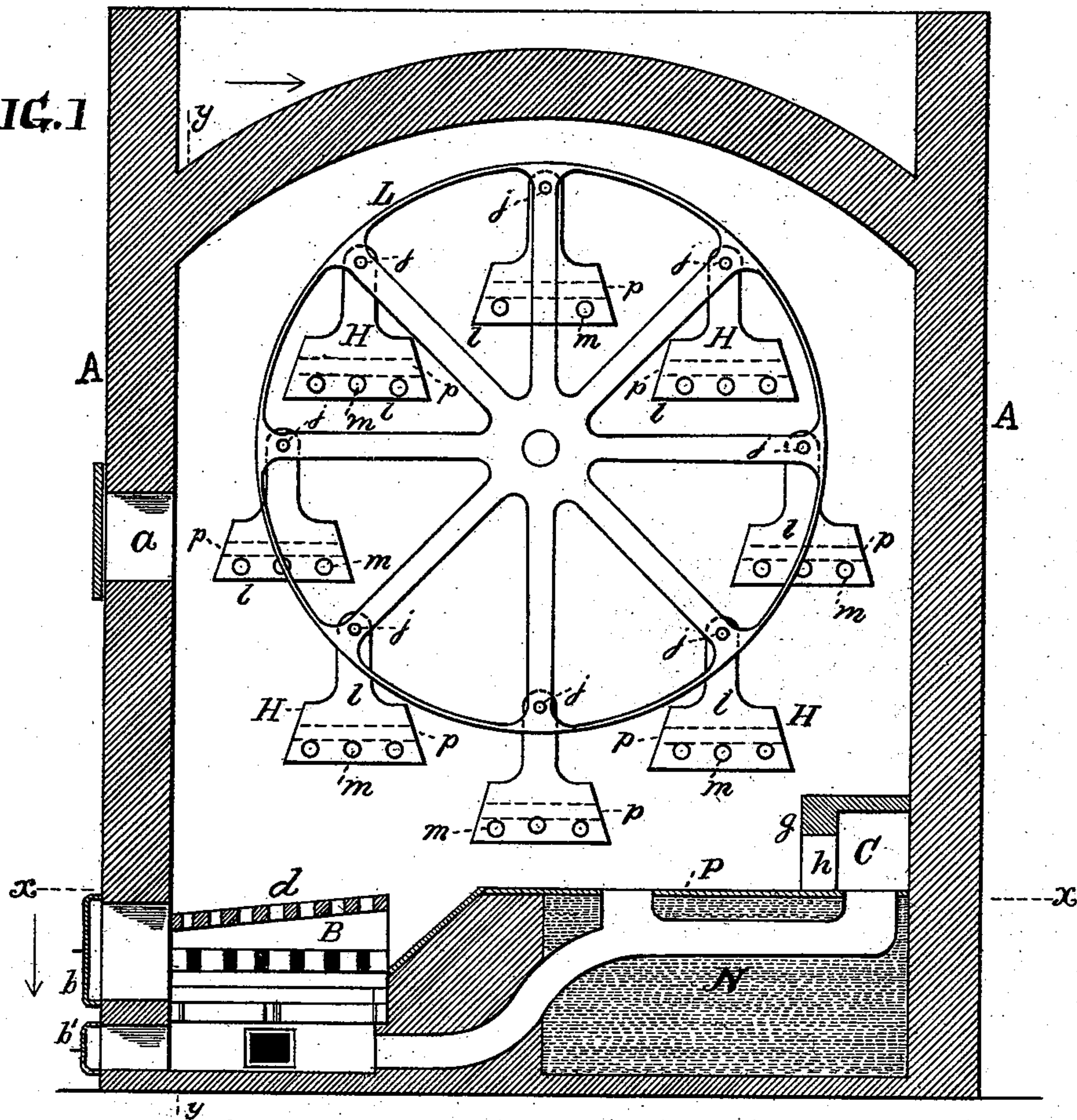
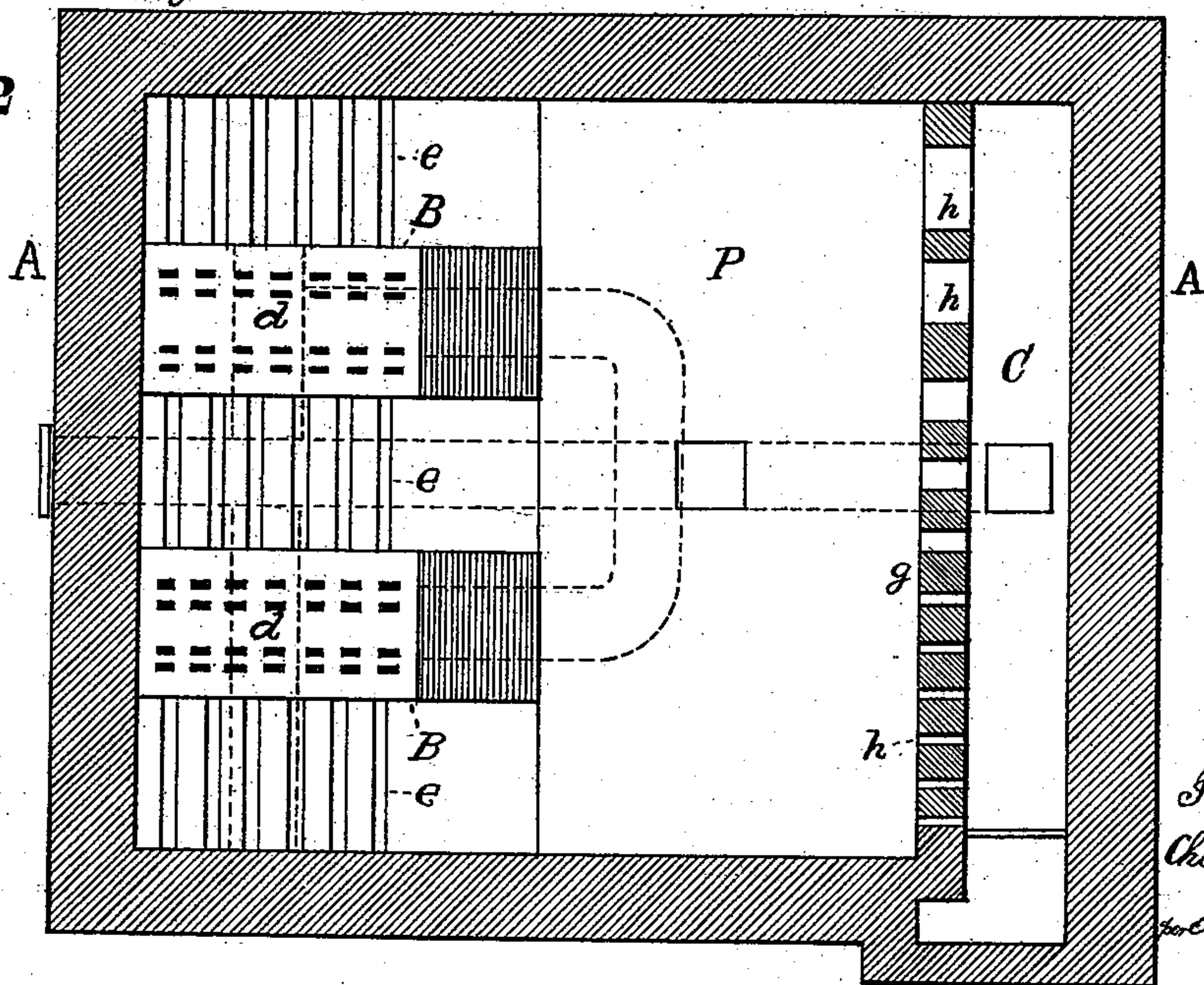


FIG. 2



Witnesses
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A. M. Bewley.

Inventor
Charles Stewart.
By Thomas J. Bewley,
Att'y.

(No Model.)

2 Sheets—Sheet 2.

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FIG 3

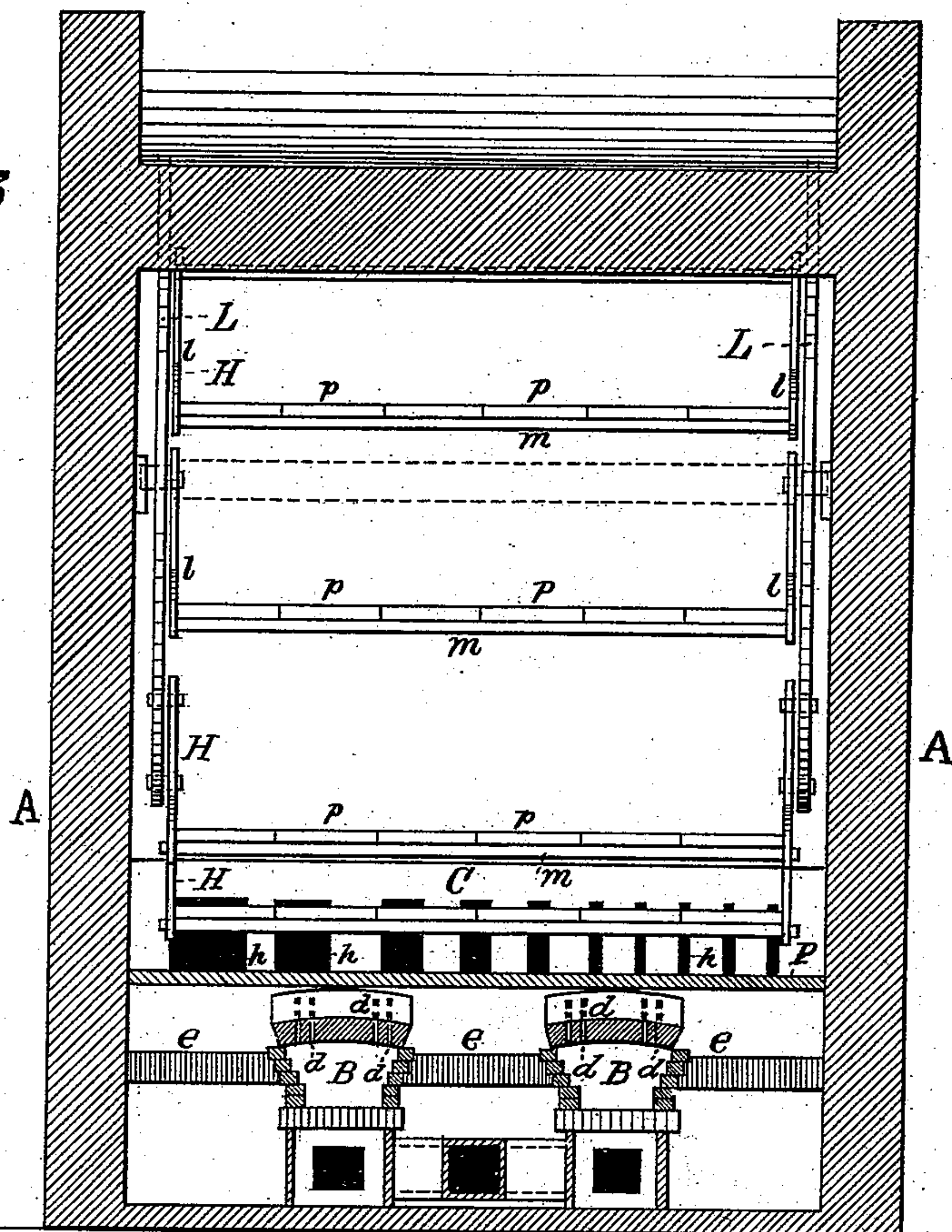
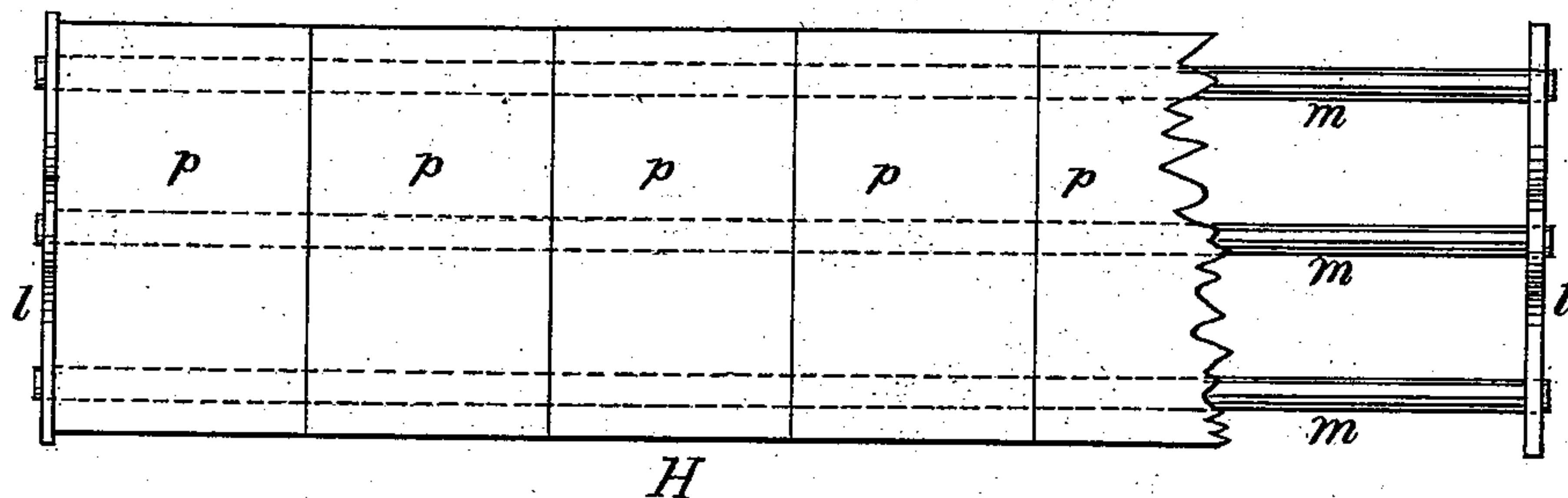


FIG.4



Witnesses

C. M. Hoover.

A. M. Bewley.

Inventor

Charles Stewart.

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UNITED STATES PATENT OFFICE.

CHARLES STEWART, OF PHILADELPHIA, PENNSYLVANIA.

REEL-OVEN.

SPECIFICATION forming part of Letters Patent No. 377,965, dated February 14, 1888.

Application filed April 18, 1887. Serial No. 235,261. (No model.)

To all whom it may concern:

Be it known that I, CHARLES STEWART, a citizen of the United States, residing at Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented certain new and useful Improvements in Reel-Ovens, of which the following is a specification.

The object of the invention is to cause the radiation and diffusion of heat and equalization of temperature within an oven; and it consists in such a construction of the upper wall or roof of the fire-receptacle at an elevated angle inward as will permit of a rapid exit from the receptacle of the products of combustion to the oven, a wall at inner end of oven having flues of graduated sizes of opening, whereby it is designed to control and prevent rapid exit of heat from oven out of chimney and cause diffusion and radiation over the area when regulated by a damper.

In the accompanying drawings, which make a part of this specification, Figure 1 is an elevation of the oven with the side wall removed and the fire-receptacle being shown in section. Fig. 2 is a sectional view taken through the broken line *x x* of Fig. 1 in the direction of the arrow. Fig. 3 is a vertical sectional view taken through the broken line *y y* of Fig. 1. Fig. 4 is a plan view, on an enlarged scale, of one of the pivoted frames *H* and its floor-tiling.

Like letters of reference in all the figures indicate the same parts.

A are the inclosing brick walls of the oven, with the opening *a* in its front for access to the interior, and the fire-box and ash-pit doors *b b'*.

B is the fire-receptacle, that is provided with openings in its side walls that communicate with the open-top flues *e*, that are arranged in the spaces between a series of fires. The arch top of the fire-receptacle is elevated in height at its inner end to that of the front and a consequent rise of the sides, in order to give greater heating-surface and a free unobstructed passage outward therefrom of the products of combustion. A series of orifices, *d*, in the arch also serve to aid in the escape of heat from the fires.

The horizontal flue C in the rear of the oven, leading into the stack, has its wall *g* perforated by a series of openings, *h*, those near the stack being contracted in width, while the farthest removed are enlarged, the object of this con-

struction being to cause the volume of heat or products of combustion (as the case may be, by the regulation of dampers in the draft and exit flues) to traverse the area of the oven previous to escape through and into the stack.

The frames *H* are hung by means of pins *j* upon the arms of the reel-wheels *L* and pivot thereon in the usual manner. The metallic end plates, *l*, are provided with bores near their lower edges, into which the opposing ends of the rods *m* are inserted and secured therein, thereby forming a frame for the reception upon the rods of the sections of vitrified or steatite tiles *p*, upon which the raw biscuit-dough is placed for baking. The vitrified or steatite bed will retain heat for a greater period of time than the metallic beds heretofore used, insuring cleanliness with a decreased liability to sticking and scorching. The tiles may be secured in position in any convenient manner.

A chamber, *N*, is formed beneath the floor *P* in the base of the rear of the oven, the sand contained therein absorbing heat to a high degree, that is again returned to the oven by the natural law of ascension when a lower temperature than that in previous use is required to help maintain the equalization—as, for instance, one kind of biscuit requires, owing to its composition, a high degree of heat. When the baking of the required amount is accomplished and it is desired to use the oven for the baking of those that require a lower temperature, the dampers are opened to cool off the oven, and when the degree of heat is lowered and the dampers again regulated the chamber of sand parts with its contained heat and assists to regulate and maintain the proper temperature.

A series of dampers are so arranged in the inlet and exit draft-flues as to permit by their opening or closing of either a direct exit to the stack or the volume of heat as well as the volatile products of combustion turned directly into the oven to circulate within its area, and also a direct draft through a flue directly under the grate-bars permits at will the heat to enter the oven.

The system of draft-regulation by dampers in flues is well understood and forms no part of my invention.

I claim as my invention and desire to secure by Letters Patent—

1. The combination, with a baking-oven having a fire-pot situated in the lower front part of the oven-space and an exit-flue leading from a remote portion of oven-space, of an
5 arched perforated cover for said fire-pot, said cover being inclined from the front of the fire-pot toward the exit-flue, as herein shown and described.

2. A baking-oven having a fire-pot in the
10 front thereof communicating with the interior

of the oven-space and a wall in the rear of the oven between the oven-space and the outlet-flue, said wall having graduated openings, the larger openings being farther from the outlet-flue than the smaller openings.

CHARLES STEWART.

Witnesses:

THOMAS J. BEWLEY,
JNO. HARTMAN, Jr.