# United States Patent Office.

JOSEPH VALE, OF BELOIT, WISCONSIN.

Letters Patent No. 107,984. dated October 4, 1870.

## IMPROVEMENT IN ROTARY BAKE-OVENS.

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

I, JOSEPH VALE, of Beloit, in the county of Rock and State of Wisconsin, have invented a certain Improvement in Ovens, of which the following is a specification.

*The Nature and Object of my Invention.*

My invention relates to the open walls of the fire-place or furnace of the oven, and dispensing with the bottom of the baking-chamber, so that the heat and smoke will pass directly through the walls of the furnace on all sides into the baking-chamber of the oven. I save the expense of a bottom-plate to the baking-chamber, also of flues; and my furnace is constructed at a less expense. I also admit all the heat of the fire directly into the baking-chamber, or space, from all sides of the furnace. I further claim the combination of the arms H, secured to the shaft by collars around the shaft, and braced by braces extending from the arms to the shaft below the collars, by which the arms are secured to the shaft.

By this construction I support the entire weight of the baking-hearth by the center-shaft, and brace it so rigidly thereto that it will not sag, and the arms are easily attached to the shaft without weakening it.

*Description of the Drawing.*

Figure 1 represents a perspective view of my invention;

Figure 2, a perspective view of the same with the front and hearth removed; and

Figure 3 represents a vertical sectional view.

*General Description.*

A is the wall of the oven, made of any suitable material;

B is the door opening into the baking-chamber;

C are the doors of the furnaces; and

D, the doors of the ash-pits.

E is an arch over the top of the oven.

*h* is the shaft of the rotary baking-shelf or hearth. It has a step, *g*, and passes through the arch E, in which it has a bearing.

*i* is a pinion-wheel, rigidly attached to the shaft *h*, for the purpose of revolving it.

H are arms, with an upward projection at one end, as shown.

These arms are firmly secured to the shaft *h* by means of the collars *h'*, the ends of the arms resting upon the lower collar *h'*, and the upward projection extending up under the upper collar *h'*.

The arms H do not pass through the shaft *h*, but simply abut against it, so that, when a weight is placed upon the outer ends of the arms, the projections press upward, and pull outward on the upper collar *h'*.

It will be observed that the weight on opposite arms H are sustained in part by the projections on the ends of the arms, pulling outward on the collar or ring *h'* in opposite directions, and the shaft is thereby somewhat relieved.

*k* are braces bracing the arms H, by extending from the arms to a collar on the shaft *h*, below the arms.

The object of this method of attaching the arms to the shaft, and bracing them, is to prevent the baking-shelf or hearth from sagging and becoming uneven.

*c c* are the grate-bars of the fire-place, and

L, the walls with the brick or tile, laid a little distance apart, leaving a space between them for the heat and gases to pass directly through into the baking-space, in all directions, directly from the fire.

The revolving baking-hearth is entirely supported by the shaft *h*, and revolves above the open furnaces, and subjects all the bread to the same amount of heat in making the revolution.

The arms H are secured to the shaft *h* in a simple manner by the collars, and are held firmly by the braces *k*, extending to the shaft below.

I have a simple, cheap, durable oven, and one requiring less fuel than my oven formerly patented upon which this is an improvement.

I am aware that there are other ovens in which the products of combustion are admitted into the baking-chamber thereof, viz: Hosea Ball's patent, of September 23, 1856, shows a chamber beneath the bottom of the baking-chamber, through which the products of combustion pass into a space in the wall of the oven, and from which they are admitted directly into the baking-chamber; and Duncan McKenzie's patent, of May 1, 1860, shows a "system of flues" for conveying the products of combustion from the fire-place through the bottom of the baking-chamber.

I disclaim the devices described in the aforesaid patents, for conveying the products of combustion to the baking-chamber of the oven, as I use neither the chamber or hollow walls of the former, nor the system of flues of the latter, but build open-wall fire-places directly in the baking-chamber.

*Claims.*

I claim—

1. The fire-places or furnaces L, constructed with open sides, substantially as described, in combination with a bake-oven, constructed with no partition or division between the furnaces and baking-chamber, but the furnaces arranged directly within the baking-chamber or space, substantially as and for the purposes specified.

2. The collars *h'*, shaft *h*, arms H, provided with an upward projection at the inner end, as described, and braces *k*, when all are constructed and arranged substantially as described.

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Witnesses:

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## Sharpening Mach.

No 107,985. Patented Oct. 4. 1870.

Fig. 1.

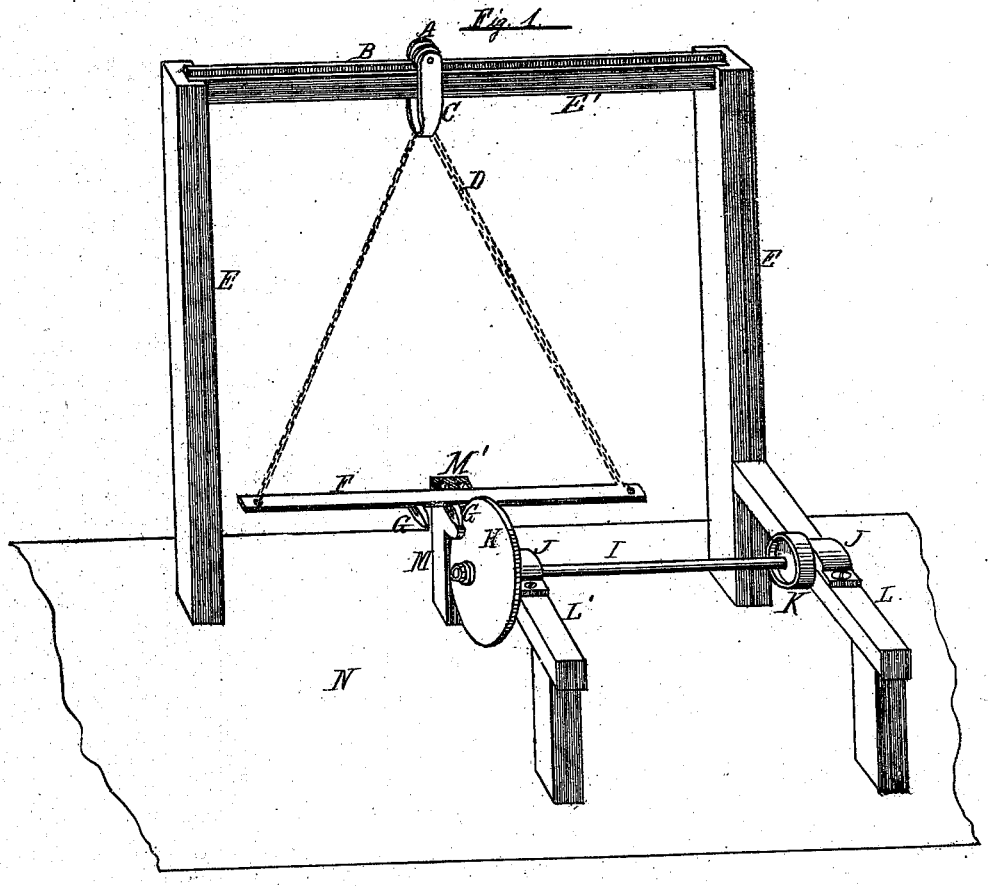
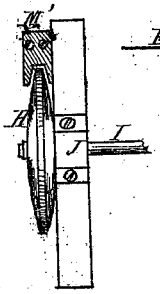



Fig. 2

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