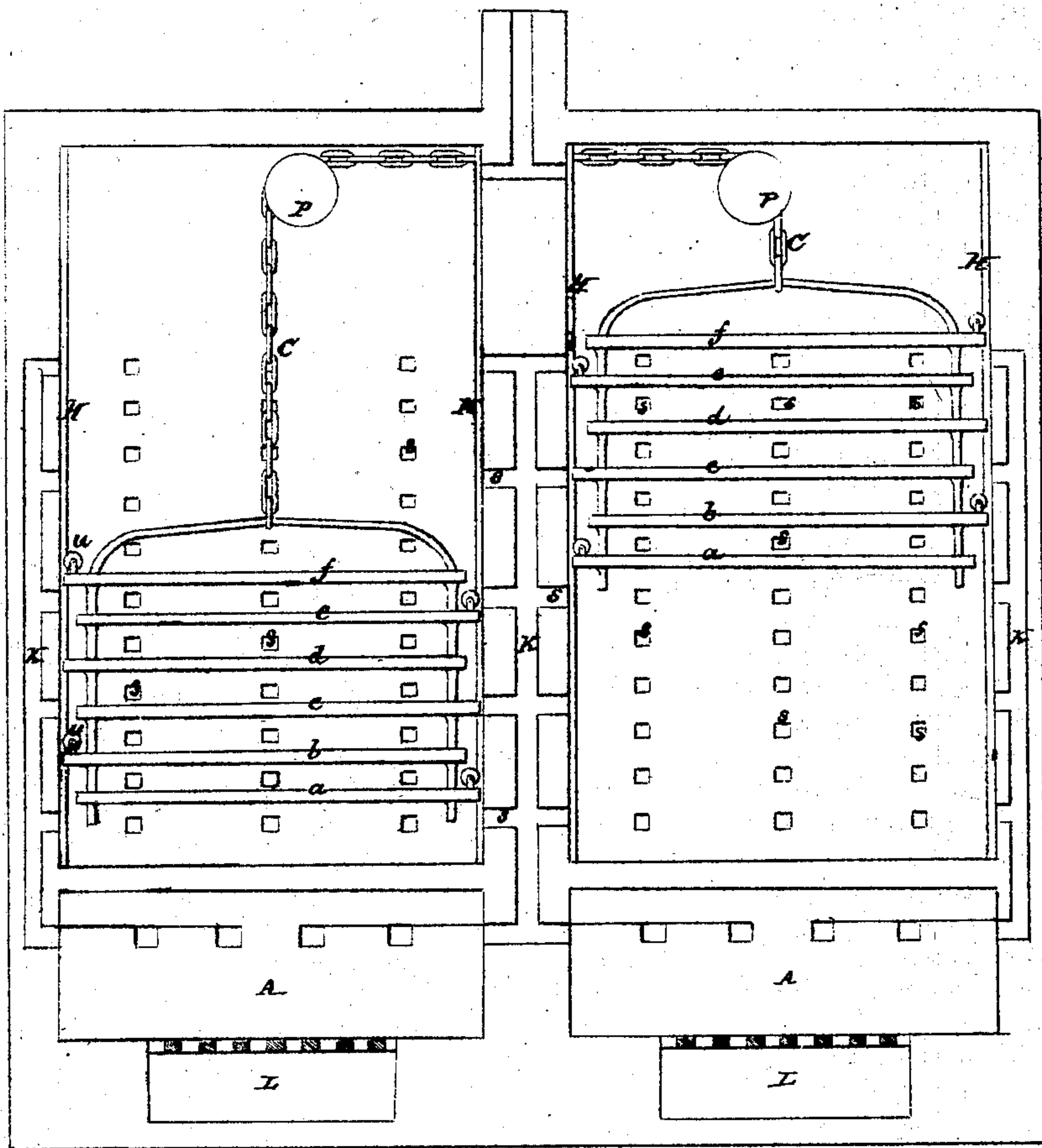


*I.H. Shaver.*  
*Bakery Ovens.*

116762

PATENTED JUL 4 1871



Witnesses,  
*A. B. Stoughton.*  
*Edmund Masson.*

*I. H. Shaver,*  
*By his Attorney,*  
*Horatio King*



# UNITED STATES PATENT OFFICE.

ISAAC H. SHAVER, OF CEDAR RAPIDS, IOWA.

## IMPROVEMENT IN OVENS.

Specification forming part of Letters Patent No. 116,762, dated July 4, 1871.

*To all whom it may concern:*

Be it known that I, ISAAC H. SHAVER, of Cedar Rapids, county of Linn and State of Iowa, have invented a new and Improved Method of Constructing Bakery Ovens; and I hereby declare the following to be a full and exact description thereof, reference being had to the accompanying drawing, and to the letters and figures of reference marked thereon.

My invention relates to the arrangement of the oven-plates, the compact form in which I build my oven, the equal and uniform distribution of heat throughout the oven, and economizing the fuel required to heat the same; and in order that others may properly understand my invention and the manner in which my improved apparatus is to be used, I will proceed to describe the same in detail.

I build my oven in the form of a rectangular parallelogram and of any desired dimensions, the walls generally about two feet in thickness; the one represented in the drawing being about twenty feet high, twenty-one feet wide, and six feet in depth, with a division-wall in the middle running from top to bottom, thereby forming the oven into two sections or apartments. In each of these sections I place a series of oven-plates of soap-stone or other material, and of any desired number, as shown in the drawing by *abcd ef*, and arranged in a peculiar manner as follows: Plate *a*, in the right-hand section of the drawing, is made to fit the oven-wall nicely at the left end, but leaving an open space of about four inches at the right end, while the next plate *b* fits at the right-hand, leaving the opening at the left end, and so on alternately through the whole series of plates, so that a zigzag flue is thus formed of the plates, through which the heat as it rises from the furnaces *A A* through the flues *K K K* must pass, coming in contact with the whole surface of all the plates. These plates are supported and held in position by an iron frame-work in each section, formed by a succession of cast-iron frames of the proper size and strength, placed in a horizontal position, extending across and fitting in the oven, except the space at each alternate end, as before described. Each frame is supported and kept in its place by four iron rods, one at each of the four corners, with a set-screw on each rod under each frame, and on which the frame securely rests. The said plates are fitted to and laid on

these frames. The plates and frame-work in each section are connected together by an iron chain, *C*, passing over the pulleys *P P*, each section nicely balancing the other, so that they are easily raised or lowered in the oven at will by mechanical connection at either pulley; and, to prevent friction and cause them to move freely and steadily in the oven, I place in the middle of the oven, at each end of each section, a perpendicular bar of iron, *H H H H*, with a groove in the same forming a guide or track, in which runs a small wheel, *u*, attached to the projecting ends of the frames *a b* and *e f*. The whole are further arranged in such a manner that plate *a* in one section is always in the same horizontal plane with plate *f* of the other section when at the oven-mouth, and the same is true of all the other corresponding plates. The result of this is that, in operating the oven, when the top plate of one section is at the mouth of the oven the bottom plate of the other section will also be at the mouth, so that both sections are readily operated at the same time. In addition to conducting the heat over the plates, as above described, and that the same may be carefully equalized throughout the whole oven, I build from the furnace a connected system of flues, *K K K*, extending around the oven and up through the division-wall in the center, and up to within about five feet of the top, with numerous openings from the same into the oven, as shown in the drawing by *s s*, and to be more or less numerous as in each case may be desired, so that as the plates are being constantly raised and lowered each one is receiving an equal amount of heat over its entire surface, whether it be in the top or bottom of the oven, and at the same time great economy of heat is obtained.

The draught is formed by the opening from each section into the chimney, and may be closed by the damper.

*L L* are ash-boxes beneath the grating *A A*.

The oven may be built any desired height, and a greater number of plates may be used than here described.

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

1. The above-described frame-work of iron running upon the guides *H H*, substantially as and for the purpose set forth.

2. The system of oven-plates *a b c d e f*, con-

structed of soap-stone or its equivalent, and arranged as set forth and described.

3. The combination of the frame-work in each section of the oven with the pulleys P P and chain C to bring the plates to the oven-doors, in the manner and for the purpose herein set forth and described.

4. The combination of the frame-work and

oven-plates with the system of flues K and openings s, substantially as herein described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses this 25th day of June, 1870.

Witnesses:

I. H. SHAVER.

H. BENNETT,

H. B. STIBBS.