Jan. 7, 1930. C. E. BUYSSE 1,742,646

FURNACE

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Fig. 1

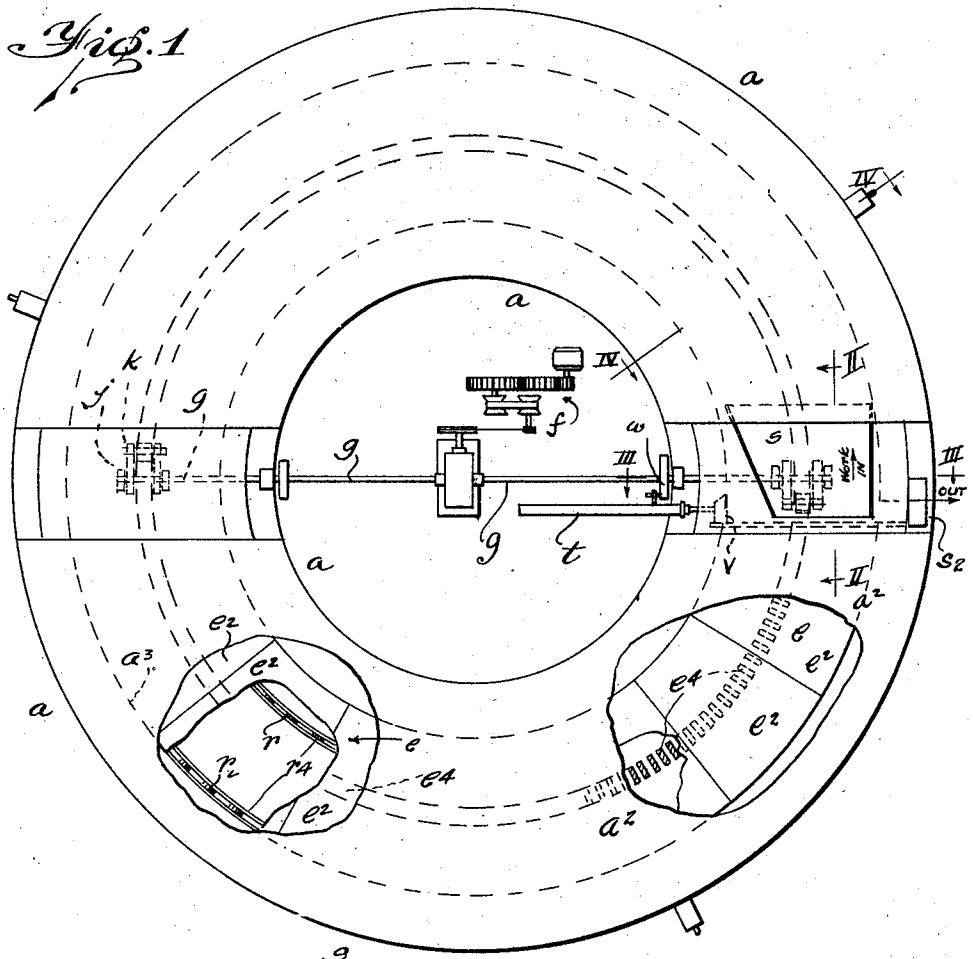
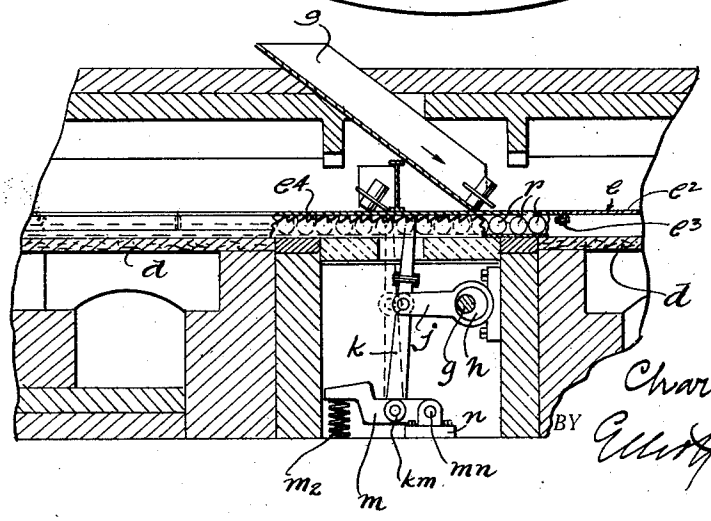


Fig. 2



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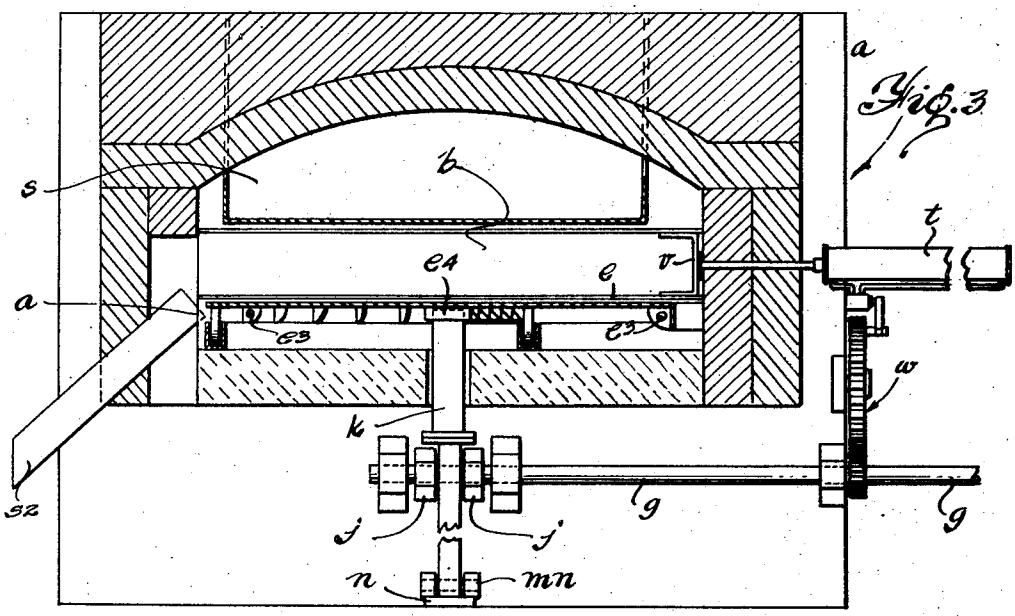


Fig. 3

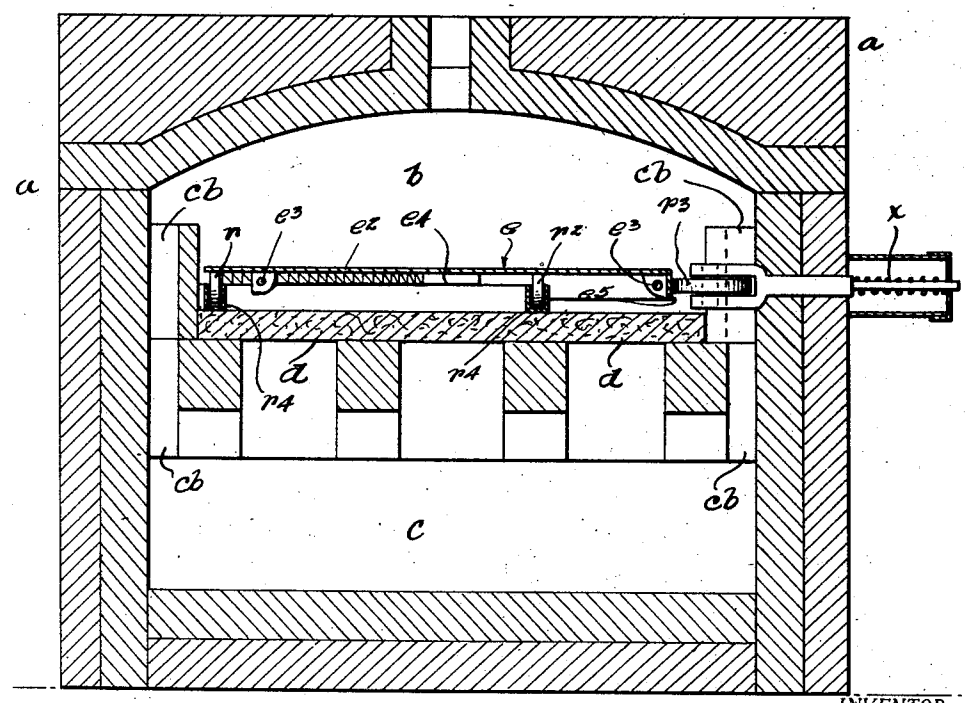


Fig. 4

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UNITED STATES PATENT OFFICE

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FURNACE

Application filed March 19, 1928. Serial No. 262,694.

My invention relates to furnaces and an object of my improvements is to provide a continuously moving carriage for the articles to be heated that is easy to construct, easily operated and that does not get out of order and to provide a furnace construction that is efficient in its operation and effective in its treatment of the articles.

I secure this object in the apparatus illustrated in the accompanying drawings, in which:—

Figure 1 is a plan view of the entire apparatus, the roof of the furnace being broken away at a^2, a^2, to show the carrier plate and at a^3, the carrier plate is also broken away to show the construction beneath said plate.

Figure 2 is an enlarged detail section on the line II, II, Figure 1.

Figure 3 is an enlarged section on the line III, III, Figure 1.

Figure 4 is a similar section on the line IV, IV, Figure 1.

a, a, a, a, is a casing annular in form, as shown in Figure 1, constituting the walls of the furnace. b is the heating chamber. c is the fire-place, or space in which the flame is produced and cb indicates flues leading from the chamber c to the chamber b along the lateral interior walls of the furnace. d is the floor plate of the heating chamber b preferably made of carborundum, or other material that shall easily transmit heat while shielding the carrier plate and articles thereon from the direct action of the flame.

e is a carrier plate. This is made up of sections e^2, e^2, which fit together to form the annular plate, which sections are bolted together by means of ears e^3, e^3, formed thereon. e^5 is a flange turned downward and extending around the periphery of the plate e. e^4 is a series of rack-teeth extending downward around the center of the annular carrier plate e. n is a stationary plate secured at the bottom of the furnace.

m is an arm extending horizontally and pivoted at mn to the plate n. m^2 is a spring tending to raise the outer end of the arm m. k is a vertically extending lever arm shaped at its upper end to form a pawl to engage the rack e^4. The lower end of the arm k is pivoted at km to the arm m. Thus the spring m^2 acts through the arm m tending to force the arm or pawl k upward and hold it in engagement with the rack e^4.

f indicates the motor as a whole. This rotates a horizontal shaft g which carries, towards its outer end, an eccentric h. j is an eccentric rod its strap fitting around the eccentric h and its outer end pivoted to the arm k.

r indicates a series of roller discs fitting and adapted to roll upon a hollow track r^4, located around and below the inner edge of the plate e. r^2 is a second series of roller discs located further from the center of the furnace than the first series and adapted to roll in a similar track r^4. The tracks r^4 are U-shape in cross-section and are supported on the floor plate d in a suitable position to receive the roller discs r^2.

The carrier plate e is made of a thin metal that will endure the high temperature and rests upon the series of roller discs r, r^2, so that it can be easily rotated, rolling upon said discs. There are a number of roller discs r^3 adapted to turn with their axis vertical and provided with yieldingly actuated means x to press them against the outer surface of a flange e^5 and centralize the carrier plate e. The discs and tracks are, of course, also made of a heat enduring metal.

s is the inlet chute and s^2 the outlet chute. t is a pneumatic cylinder adapted to operate a pusher head v. w indicates a series of gears connecting the shaft g with the valve of the cylinder t, so that said valve shall be operated at suitable times to discharge the articles from the carrier plate e.

The operation of the above described device is as follows:

The articles to be heated are fed through the chute s upon the plate e. The engine f is then set in motion rotating the shaft g and oscillating the pawl, or arm, k which arm acting upon the rack-teeth e^4 moves the carrier plate along one notch, or more, as the case may be, at each oscillation. When the articles come opposite the discharge chute f^2 the pusher plate v is oscillated by the pneu-

matic cylinder t to push the articles off the plate and discharge them into the chute f^2.

Should the plate e warp out of its normal shape the pawl k will adapt itself to this condition and still engage the rack teeth and actuate the plate.

What I claim is:

1. In an apparatus of the kind described, the combination of a stationary heating chamber, a fire-place beneath the said chamber and a flat carrier made of thin heat enduring metal rotatable in said chamber, said chamber having a bottom permeable to heat but adapted to shield said carrier from the direct contact of the flame, said carrier plate being provided with a circular rack at its lower surface, a vertically movable pawl engaging said rack, and yieldingly held in engagement therewith and means for oscillating said pawl for the purpose described.

2. In an apparatus of the kind described, the combination of a rotatable carrier plate having a toothed rack, a pawl engaging said rack at one end, the other end of said pawl being pivoted to a part that is movable toward and away from said plate but restrained from other movement, means for yieldingly forcing said part toward said plate, and means for actuating said pawl about said part.

In testimony whereof, I sign this specification.

CHARLES E. BUYSSE.