

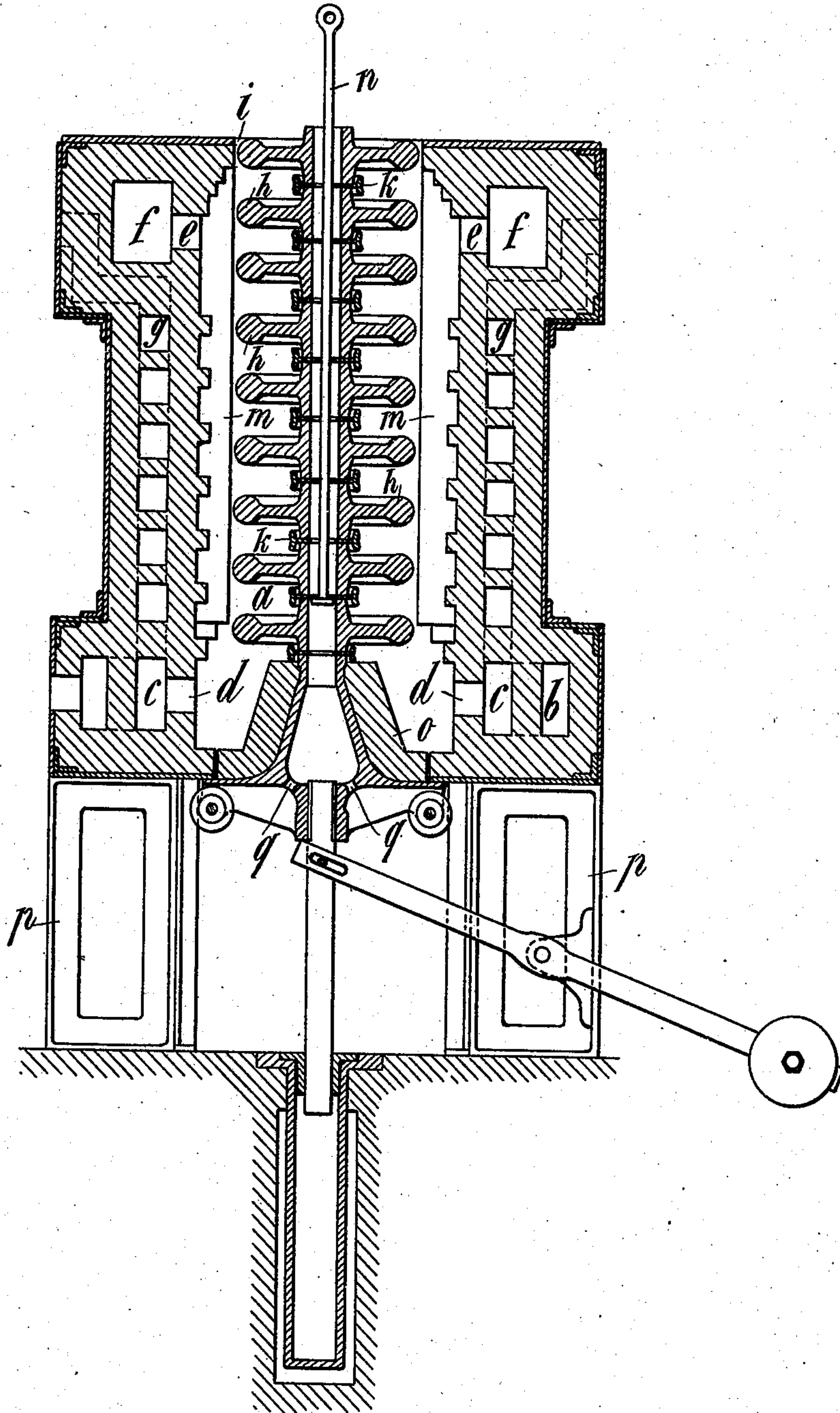
No. 854,974.

PATENTED MAY 28, 1907.

A. WIECKE.

FURNACE FOR HEATING DISK WHEELS OR THE LIKE.

APPLICATION FILED NOV. 26, 1906.



Witnesses:
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UNITED STATES PATENT OFFICE.

ADOLF WIECKE, OF DÜSSELDORF, GERMANY.

FURNACE FOR HEATING DISK WHEELS OR THE LIKE.

No. 854,974.

Specification of Letters Patent.

Patented May 28, 1907.

Application filed November 26, 1906. Serial No. 345,092.

To all whom it may concern:

Be it known that I, ADOLF WIECKE, a subject of the King of Prussia, residing at Düsseldorf, in the Kingdom of Prussia, German Empire, have invented certain new and useful Improvements in Furnaces for Heating Disk Wheels or the Like, of which the following is a specification,

This invention relates to a furnace for heating disk wheels or like bodies whose form is a figure produced by rotation, the object being to heat the peripheral part while the middle part is kept as cool as possible. The furnace is such that it may be operated continuously, the articles to be heated being introduced into the top of the furnace through which they pass in the direction contrary to that of the hot gases wherewith they are bathed, to be withdrawn from the lower end of the furnace when they have been duly heated.

A form of furnace constructed according to the invention is shown in central vertical section in the accompanying drawing.

The furnace is heated by means of combustible gases, preferably generator gas, or by any other system of firing that produces combustible gases. The gases are introduced into the lower end of the shaft *a* through an annular channel *b*, whence they pass through a series of ports to a second annular channel *c*, where they mix with pre-heated air. The mixture passes through suitable ports *d* into the shaft and are there ignited. The products of combustion rise and impart their heat to the disk wheels or the like. They then pass through ports *e* into an annular channel *f* at the upper end of the shaft, in communication with the chimney. The air for supporting combustion is drawn through openings at the upper end of the furnace and conducted through channels *g* in the brickwork of the furnace, surrounding the shaft, and opening into the mixing channel *c*. Thus the air is pre-heated in the wall of the furnace which is at the same time kept cool.

The disk wheels *h* or the like, are introduced through the opening *i* into the upper end of the shaft *a*. The diameter of this opening is, as a rule, only slightly greater than the diameter of the article to be heated, so that at this place neither combustion products can escape nor cool air be drawn in; if desirable, a cover can be provided for the upper end of the furnace. The movement of the wheels through the shaft is on the

counter current principle, that is to say the most highly heated wheels are at the hottest part of the flame. The lowest wheel rests on the bottom of the furnace and is either withdrawn laterally or removed from below with aid of a movable bottom, as soon as it is sufficiently heated.

In the construction illustrated the disk wheels are introduced continuously above and withdrawn continuously from below. They rest on one another and are carried on the bottom. Laterally they are guided by three or more vertical ribs *m*. Whenever the bottom wheel is to be removed, those resting on it must be supported in some suitable manner. In the instance shown, there is a plate *k* introduced between the nave of each wheel and that next above it. Each plate has a rectangular slot of such dimension that the hammer head of a rod *n* can pass through it only when turned in one direction, engaging with the plate when turned in any other direction. When the lowest wheel is to be removed by withdrawing the bottom of the furnace, the remaining wheels are raised a little by aid of the plate *k* and rod *n*, the latter being lifted by a crane or the like; the lowest wheel now rests on the bottom of the furnace and may be lowered therewith. After the wheel has been removed the bottom is raised again and the rod *n* lowered to allow the wheel which is now the lowest to rest upon the bottom. The rod is then turned so that its hammer head can be drawn through the slot in the lowest plate *k*. The plates are advantageously introduced into the furnace in such relative positions that the slots of successive plates are substantially at right angles to each other, so that the hammer head having been drawn through one plate cannot pass directly through the next.

The furnace bottom *o* may be lowered and raised by any suitable mechanism, such as by rack and pinion, or by hydraulic pressure. The drawing shows the furnace resting on cast iron legs *p*, the space between which serves for withdrawing the heated wheels; the legs carry ribs on which travel guide wheels mounted on the furnace bottom.

In order that the naves of the wheels may be kept cool, openings *q* are provided in the furnace bottom, through which air may pass up the middle or be blown up by a bellows. This cold air passes through the slots of plates *k* and through the hollow naves, thus cooling the middle parts of the wheels.

What I claim and desire to secure by Letters Patent of the United States is:—

1. A furnace having a heating chamber, means within said chamber for separately
5 sustaining therein a series of superposed articles to be heated, a bottom at the lower end of the chamber, and means for raising and lowering said bottom, substantially as specified.
- 10 2. A furnace having a heating chamber, means for admitting gas and pre-heated air

to said chamber, a movable perforated bottom, a series of perforated plates above the bottom, and a rod adapted to engage said plates, substantially as specified. 15

In witness whereof, I have hereunto signed my name in the presence of two subscribing witnesses.

ADOLF WIECKE.

Witnesses:

M. ENGELS,

ALFR. POHLMAYER.