

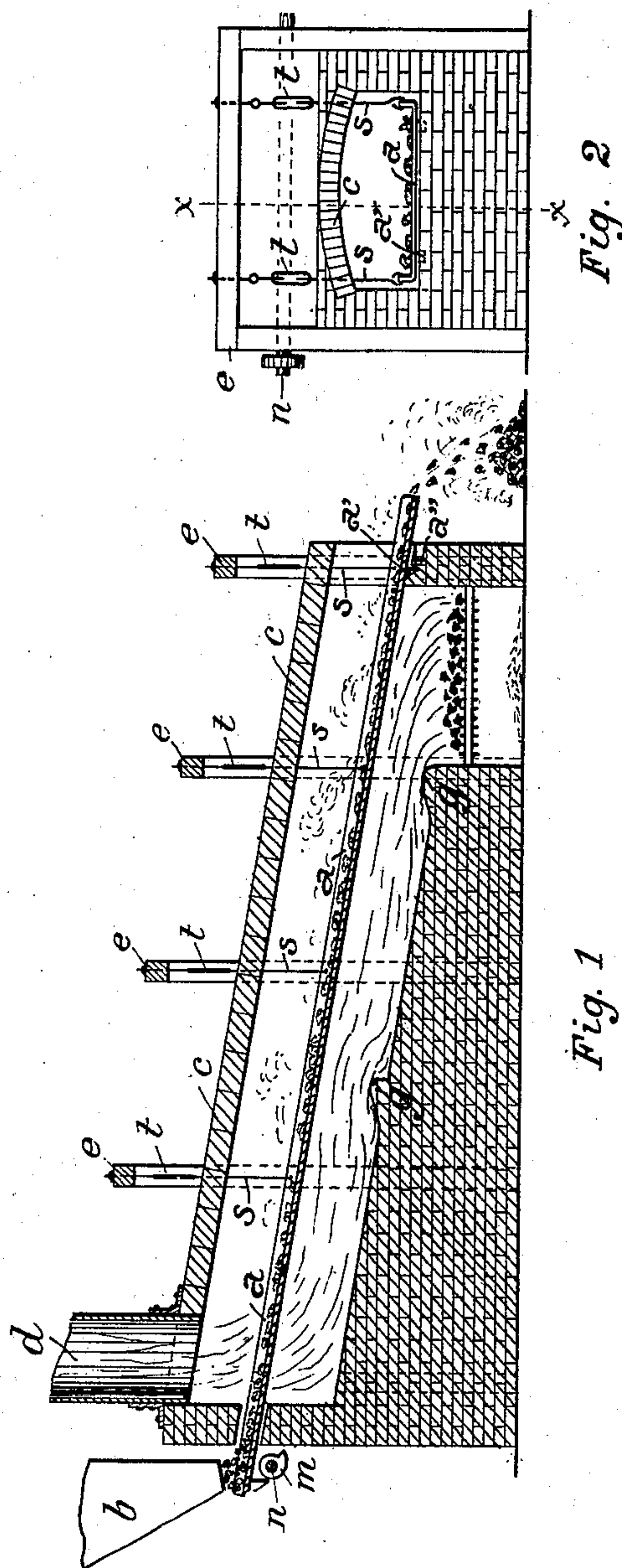
No. 708,728.

Patented Sept. 9, 1902.

**J. A. OGDEN.
ROASTER.**

(Application filed Apr. 5, 1900.)

(No Model.)



UNITED STATES PATENT OFFICE.

JAMES A. OGDEN, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR OF ONE-THIRD TO CHARLES H. CORNELL, OF VALENTINE, NEBRASKA.

ROASTER.

SPECIFICATION forming part of Letters Patent No. 708,728, dated September 9, 1902.

Application filed April 5, 1900. Serial No. 11,631. (No model.)

To all whom it may concern:

Be it known that I, JAMES A. OGDEN, a citizen of the United States, and a resident of the city and county of Philadelphia and State of Pennsylvania, have invented a new and useful Improvement in Roasters, of which the following is a clear, full, and sufficient specification, reference being had to the drawings annexed.

My invented machine consists, essentially, of a freely-swinging inclined plate which is heated and over which the ore is made to travel and means for facilitating the travel of the ore from the higher to the lower level. The means for heating the plate for giving it the freely-swinging motion and for causing the ore to travel from one end to the other are also believed to contain novelty.

Describing now the best means of which I am aware of constructing my invented device, Figure 1 is a vertical section of my invented device on line *x x* of Fig. 2, and Fig. 2 is an elevation of the lower end of Fig. 1.

The inclined plate *a*, over which the ore travels, is supported from the frames *e e* by the links *s s*, which, for convenience in adjustment, are provided with the interposed turnbuckles *t t*. The links allow the plate to swing so that it will have a free and active motion. To jar the plate, so that the ore will be aided in traveling down the same, I move it by the cam *m*, which works with the plate or with the abutment *n*, and after it is disengaged therefrom allows the plate to swing and bump against the abutment *a''*, and for convenience the plate is provided with the projection *a'* for this purpose. The cam can also bump against the plate or the abutment *n*, if desired. I heat the plate *a* by the furnace B through a slanting flue in which, formed beneath the plate-arch *c*, the plate *a* passes. Near the lower end of the flue is the fire-box and near the upper end the smoke-stack *d*. I make the plate *a* to extend in practice above the upper end of the furnace to receive the ore and below the lower end of it to deposit same free of the furnace. By placing the fire-box near one end of the flue the portion of the plate over which the ore will travel last will be more intensely heated than the parts over which it had pre-

viously traveled, and hence a gradually-increasing heating be given to it during its travel downward to the lower end of the plate. The protuberances *g g*, arising from the bottom of the flue, may serve to contract the flues at these points and concentrate the heat at these parts. A hopper or trough *b* or other suitable means can be provided to feed the ore onto the plate *a*, and the edges of the plate *a* can be raised slightly to prevent the ore from flowing over the edges into the flue.

The operation of the device is as follows: As the ore passes from the hopper it falls on the plate *a* and the bumping given to the plate makes it travel slowly down to the end of the plate. The plate *a* is heated to the desired temperature by the furnace and the volatilized substances will pass off through the smoke-stack *d*.

Having now described my invention, what I claim, and desire to secure by Letters Patent, is—

1. The combination, in a roaster, of a furnace having a flue, an inclined plate situated in said flue, supports for said plate, swinging links connecting said plate with said supports, and mechanism for positively moving said plate in one direction, and means for suddenly checking its motion in the other; substantially as described.

2. The combination in a roaster, of a furnace having an inclined flue, a fire-box situated at one end of the flue, a plate for containing the ore to be roasted situated in said flue, said plate projecting completely through said fire-box, and means for suspending said plate, and giving it a freely-swinging motion, substantially as described.

3. In a roaster the combination of a furnace having an inclined flue, an inclined plate passing through the said flue, and projecting at either end, supports for the plate exterior to the furnace, and swinging links provided with turnbuckles, connecting the said plate with the said supports; substantially as described.

4. In a roaster, the combination with a furnace having an inclined flue, of an inclined plate passing through the said flue, supports above the plate, swinging links connecting said plate to said supports, and mechanism

for bumping said plate; substantially as described.

5 5. The combination in a roaster, of a furnace having an inclined flue, a fire-box situated in said flue, a plate for containing the ore to be roasted, situated in said flue, a portion of said plate being situated over the said fire-box, means for suspending said plate and giving it a freely-swinging motion and mech-

anism for bumping said plate substantially as described.

In token whereof I have hereunto set my hand this 16th day of March, 1900.

JAS. A. OGDEN.

Witnesses:

NORMAN T. MASON,
B. B. SHEPHERD.