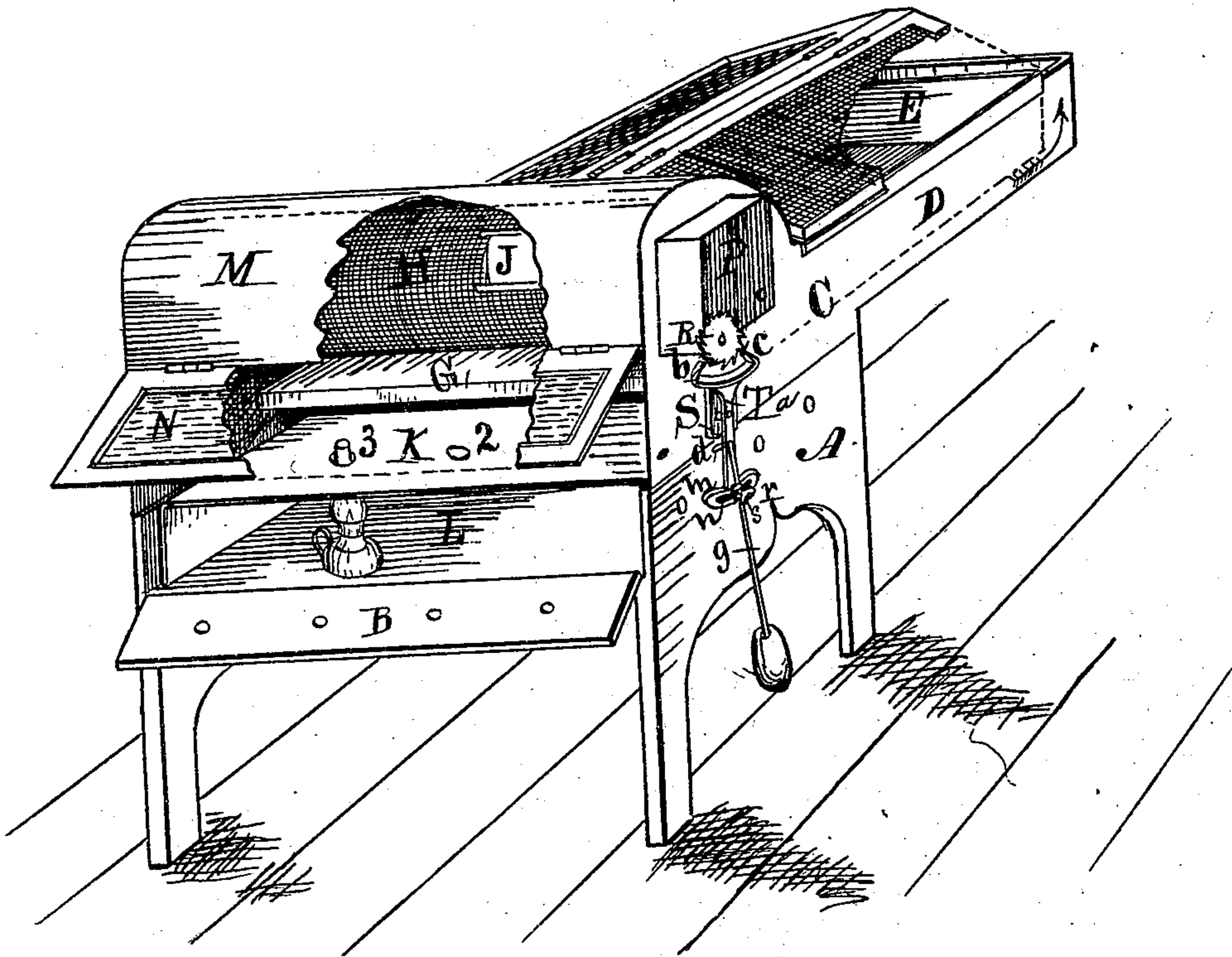


H. S. GRAHAM.
ROASTER AND WARMER.

Patented March 20, 1877.

No. 188,463.



Witnesses,
C. A. Johnson
M. E. Orwig

Inventor,
Henry S. Graham,
By Thomas G. Orwig,
Attorney

UNITED STATES PATENT OFFICE

HENRY S. GRAHAM, OF INDIANOLA, IOWA.

IMPROVEMENT IN ROASTER AND WARMER.

Specification forming part of Letters Patent No. 188,463, dated March 20, 1877; application filed October 28, 1876.

To all whom it may concern:

Be it known that I, HENRY S. GRAHAM, of Indianola, in the county of Warren and State of Iowa, have invented a Combined Pea-Nut Roaster and Warmer, of which the following is a specification:

The object of my invention is to construct a portable apparatus in such a manner that pea-nuts can be conveniently and uniformly roasted and kept warm therein by means of common movable lamps. It consists in forming and combining a lamp-chamber, a rotating roasting-cylinder, a movable warming-pan, clock-work gearing, and a pendulum-adjuster, as hereinafter fully set forth.

My drawing is a perspective view, illustrating the construction and operation of my invention.

A is a portable wooden stand and base, that may vary in form and dimensions as desired. It has a tray-formed top, which is part of the lamp-chamber in the complete apparatus.

B is a hinged section and perforated door, opening to the lower part of the lamp-chamber, to gain access to the movable lamps, and to regulate the draft. The perforations in the door B and the contiguous sides of the tray-formed top of the stand constantly admit cold air into the lamp-chamber, to aid combustion in the lamps.

C is a sheet-metal case, the base of which corresponds in size and shape with the top of the stand A, upon which it is secured in any suitable way.

D is a rear extension of the case C, designed to receive a warming-pan, and to form a hot-air flue underneath the warming-pan.

E is a movable warming-pan, that can be readily lifted in and out of the extension D. It may have hinged wire-screen covers, as represented, through which the roasted nuts may be seen and protected.

G is a sliding plate, secured in suitable bearings attached to the under side of the pan E, and serves to conduct the heat of the lamps from the roasting-cylinder and its chamber to the warming-pan, when properly adjusted.

H is a rotating sheet-metal cylinder, in which nuts are placed (and removed) through the

sliding door J. The cylinder is mounted in suitable bearings formed in or attached to the sides of the case C.

K is the movable top of the lamp-chamber L, and has a series of openings, 1 2 3, through which the tops of the lamp-flues extend, to convey the products of combustion against the surface of the rotating cylinder H. This movable top or partition may be fitted in bearings attached inside the case C, or may have legs to rest on the bottom of the lamp-chamber L, which is formed complete by means of the tray-formed top of the stand A, the case C, and the movable top K. It is preferably made of zinc plate, or other non-conducting material, that will not detract the heat of the lamps from the roasting-cylinder.

M is a movable cover, fitted over the top of the case C, to inclose the roasting-cylinder H, and to retain the heat generated by the lamps in and around the cylinder.

N is a door, hinged to the cover M, to allow access to the lamp-chamber. This door is preferably partly glass, through which the light of the lamps may be seen.

P is a case or skeleton frame, containing a spring and clock-work gearing. It is attached to the outside of the case C in such a manner as to connect the spring-motor with the shaft of the rotating cylinder H, and operate the cylinder whenever desired.

R is an escape-wheel, connected with the gearing in the case P.

S is a pallet and pendulum bearer, extending downward from the case P.

T is a vertical lever, suspended upon an adjustable pivot, *a*, that is supported by and moves vertically in the bearer S, depending from the box P.

b c are pallets, extending at right angles from the top of the lever T.

d is a perforation and pivotal point in the central portion of the lever T, in which the pendulum-stem *g* is secured by being bent at right angles at its top to enter the perforation in the lever.

m is a crescent-formed end on the bottom of the lever T. It has a slot, *n*, concentric with the pendulum's pivotal point *d*.

r is a pendulum-stem bearer, that extends through the slot *n* in the crescent-formed end *m* of the lever.

s is a set-screw on the end of the pendulum-stem bearer *r*, and serves to clamp it to the crescent-formed end *m*.

By adjusting the bearer *r* in the slot *n* the position of the pendulum-stem *g* is changed relative to the vertical lever *T*, and the escapement can thereby be adjusted to operate correctly when the complete apparatus does not stand level.

In the practical operation of my apparatus the nuts to be roasted are placed in the cylinder *H*, the motor-spring wound up in its case *P*, the lamps lighted in the chamber *L*, and the pendulum started to allow the power of the spring-motor to escape and impart a rotary motion to the cylinder. When the nuts have been thus subjected to the heat of the lamps to roast them, the vibration of the pendulum is stopped, and the roasted nuts removed from the cylinder to the warming-pan *E*, and the slide *G* is moved forward to connect with the top of the lamp-chamber *K*, to thereby prevent the heat from passing around the cylinder, and to carry it directly rearward, to pass under the warming-pan, and to keep the nuts therein warm.

To convey the heat more directly from the

roasting-cylinder to the warming-pan, the lamp or lamps may be moved to the rear of the cylinder *H*.

A simple and complete apparatus is thus provided for roasting nuts uniformly, and also keeping them warm when roasted without much labor, attention, or expense.

I claim as my invention—

1. The portable stand *A*, having the tray-formed top and hinged door *B*, the case *C*, having the rear extension *D*, the movable warming-pan *E*, having the sliding plate *G*, the rotating cylinder *H*, the movable lamp-chamber top *K*, the movable cover *M*, having the hinged door *N*, and the case *P*, having a spring-motor and clock-work gearing, arranged and combined substantially as and for the purposes shown and described.

2. The pivoted lever *T*, having pallets *b c* at its top, and a bridle, *m n*, at its bottom, and carrying the adjustable bearer *r s*, in combination with the pendulum-stem *g*, the escapement-wheel *R*, the clock-work in the case *P*, and the rotary cylinder *H*, carried by the portable stand *A*, substantially as and for the purposes shown and described.

HENRY S. GRAHAM.

Witnesses:

W. H. BERRY,
E. J. MOXLEY.