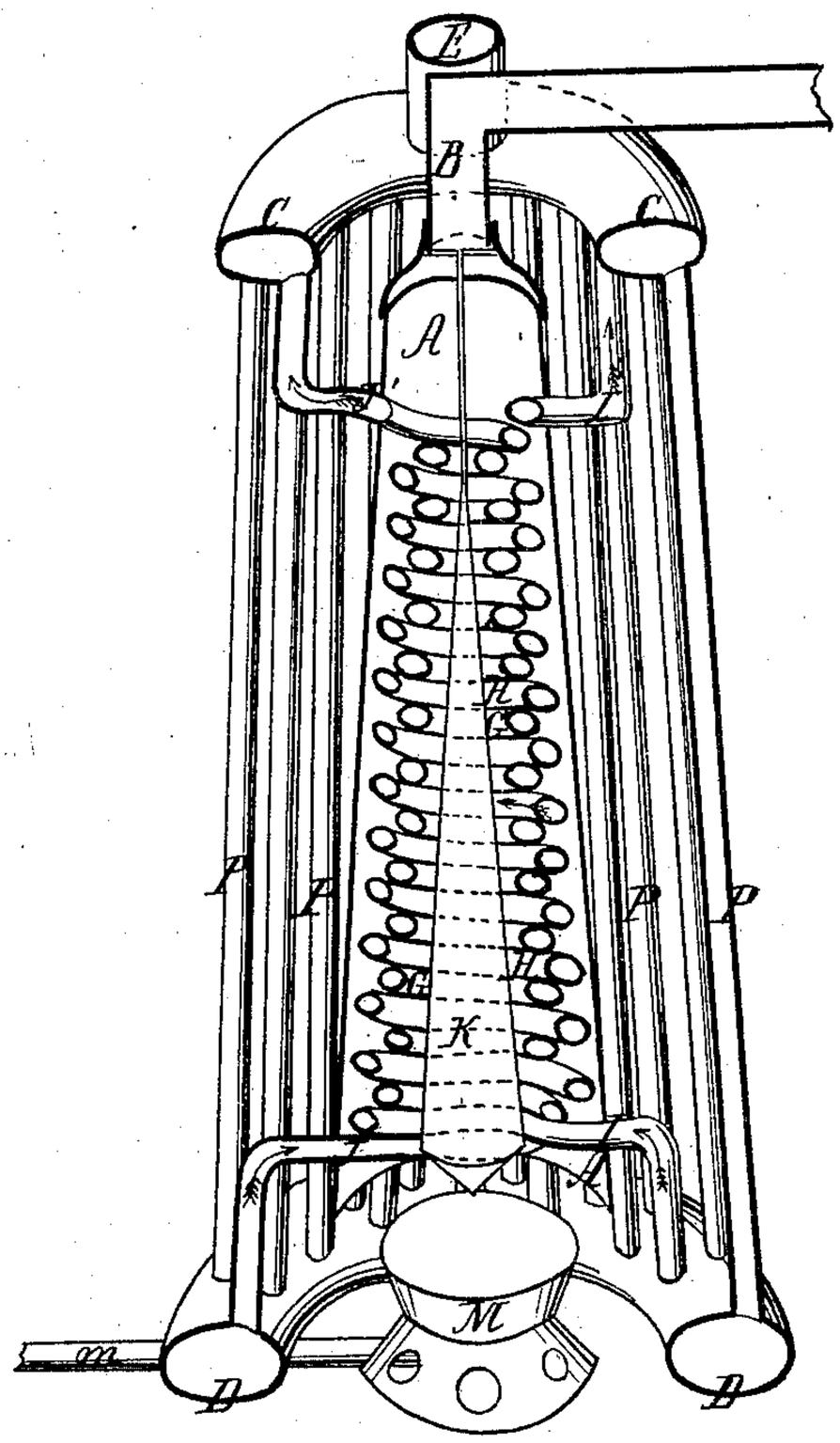
Hunter & Geissenhainer.

Steam Heater.

No. 30,065. Patented Sep. 18, 1860.



Witnesses;

Thomas D. Stetson

L. H. Babcock

Inventors;

Jacob F. Hunter

F. W. Geissenhainer

UNITED STATES PATENT OFFICE.

JACOB F. HUNTER AND F. W. GEISSENHAINER, OF NEW YORK, N. Y.

IMPROVED APPARATUS FOR HEATING APARTMENTS BY HOT WATER.

Specification forming part of Letters Patent No. **30,065**, dated September 18, 1860.

To all whom it may concern:

Be it known that we, JACOB F. HUNTER and F. W. GEISSENHAINER, both of the city of New York, in the county and State of New York, have invented a new and Improved Hot-Water Stove; and we do hereby declare that the following is a full and exact description thereof.

The nature of our invention consists in a novel arrangement and combination of parts constituting a new portable hot-water stove.

It also consists in the employment of a deflecting-cone in the interior of such stove, as will be explained below.

To enable others skilled in the art to make and use our invention, we will proceed to describe it by the aid of the drawing, which is a cross-section through the apparatus.

M is a gas-burner of any suitable character constructed with a view to developing heat rather than light by the combustion of the gas, and *m* is a pipe conducting the gas thereto from the main. (Not represented.)

G is a conical coil of metal pipe, communicating at the base with the pipe J and at the top with the pipe J′

H is a similar, but larger, coil, surrounding G and supported at a little distance therefrom. It communicates at the bottom and top with the pipes I and J′, which extend horizontally in the opposite direction from those with which G is connected. The coils of the pipes G and H are not in close contact, but stand at a sufficient distance each from the other to allow of the passage between each convolution and the next of a small quantity of flame or heated air.

A is a conical case surrounding the double coils G and H at a sufficient distance therefrom to allow a free circulation of the products of combustion. It is open at the base and communicates at its top with a pipe, B, leading to the chimney of the building. K is a deflector—a hollow double cone of metal mounted within the interior coil, G. It is of such diameter as nearly to fill the space therein.

C C are sections of a circular tube which extends around A and receive the pipes I J′.

D D represent similar sections of a corresponding circular tube located at a lower level and communicating with the pipes J I.

P P are vertical pipes connecting C with D. The exteriors of P, as also of C and D, are exposed to the atmosphere of the apartment, which circulates freely among and about their heated surfaces.

The hot products of combustion rising from the burner M are deflected outward by the cone K and circulate through all the spaces. By this means the heated air is conveyed into the space between the conical coil G and the corresponding larger coil, H, and from this space it escapes in a similar manner through the spaces between the convolutions of H and fills the interior of the case A, but at a much reduced temperature, in consequence of the air having parted with a large portion of its heat in its contact with the cool coils G H. It ultimately rises and escapes from the case A, through the pipe B, into the flue or chimney. The coils G and H, as also the pipes I, C, P, D, and J, are filled with water. E represents a vessel opening into C to fill up the apparatus and to allow for expansion of water. The heat applied to coils G and H causes the water in them to rise, as indicated by the blue arrows, and flow through pipes I and J into C, and thence downward through pipes P P into D, returning back to coils G and H through pipes I J at base at a reduced temperature, to be again heated, as before. The heat lost by radiation from C, P, and D is taken up by the air in the apartment, which by this means becomes heated through the primary agency of the gas burned at M.

It will be observed that the hot case A by this arrangement of the parts is so surrounded by the water-tubes P that it cannot radiate a sufficiently intense heat upon furniture or other objects to cause any injury thereto.

Heating apartments by hot water is commonly practiced in various ways; but we are not aware that any previous to our invention have attempted to effect this result through the medium of a portable stove containing the heat-receiving and the heat-diffusing waterparts combined and arranged in connection with a dividing partition in any manner equivalent to ours.

Our stove may be used for coal, wood, or other fuel, if desired, in lieu of gas, the several pipes being all filled with water, and the effect will be to diffuse the heat in the same manner as above indicated.

Having now fully described our invention, what we claim as new therein, and desire to secure by Letters Patent, is—

1. The combination and arrangement of the coils of pipe G and H, or their equivalent water-heating surface, the casing A, and one or more annular but radiating vessels, or one or more series of air-heating pipes, P, surrounding the same, forming a portable hot-water stove substantially of the character above set forth.

2. The employment of the cone K in the above-described hot-water stove, arranged relatively to the other parts of the same, substantially in the manner and for the purpose herein set forth.

JACOB F. HUNTER.
F. W. GEISSENHAINER.

Witnesses:
THOMAS D. STETSON,
G. H. BABCOCK.