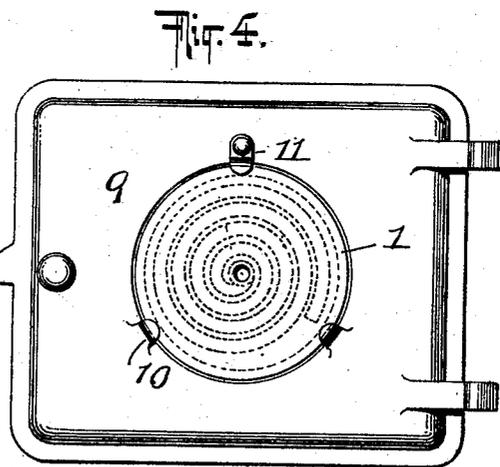
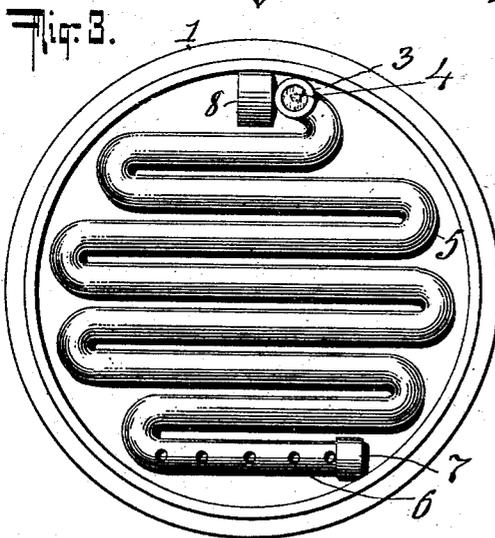
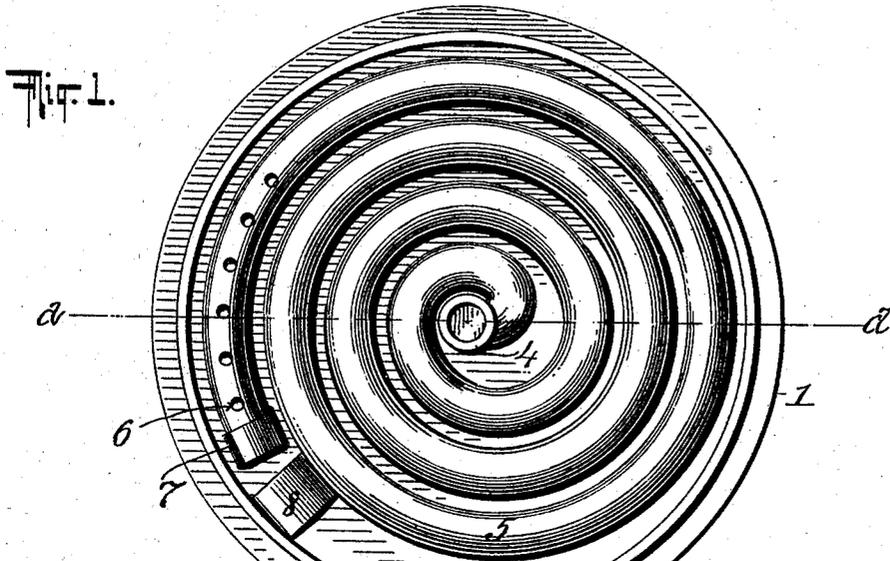


No. 748,326.

PATENTED DEC. 29, 1903.

C. E. WHITAKER.  
AIR HEATING DEVICE FOR STOVES, &c.  
APPLICATION FILED FEB. 10, 1903.

NO MODEL.



WITNESSES:

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# UNITED STATES PATENT OFFICE.

CHARLES E. WHITAKER, OF NORWICH, CONNECTICUT.

## AIR-HEATING DEVICE FOR STOVES, &c.

SPECIFICATION forming part of Letters Patent No. 748,326, dated December 29, 1903.

Application filed February 10, 1903. Serial No. 142,716. (No model.)

*To all whom it may concern:*

Be it known that I, CHARLES E. WHITAKER, of Norwich, New London county, Connecticut, have invented a new and useful Improvement in Air-Heating Devices for Stoves, &c., of which the following is a specification.

The invention relates to a device for admitting heated air into the fire-space of a range, stove, or furnace.

The invention consists in a plate having an opening and on one side a tortuous conduit communicating with said opening; also in the construction of said conduit in helical form, and provided with outlet-openings in its wall near its outer closed end; also in the combinations more particularly pointed out in the claims.

In the accompanying drawings, Figure 1 is a bottom view of a cover-plate or lid adapted to fit in the opening in the top of a range or stove. Fig. 2 is a section on the line *aa* of Fig. 1. Fig. 3 is a bottom view of a cover-plate or lid having a modified arrangement of the air-heating pipe. Fig. 4 shows the plate of Fig. 1 applied to a stove or furnace door.

Similar numbers of reference indicate like parts.

1 is the cover-plate or lid, adapted to fit in an opening in the top of a range or stove, (represented at 2.) At the center of said plate is an air-hole 3, which communicates with the short cylindrical projection 4, which is on the under side of said plate and preferably cast integrally therewith. 5 is a tortuous conduit, here formed by a tube secured in any suitable way to the under side of said plate and preferably coiled in a helix, as shown in Fig. 1. One end of said tube communicates with the short projection 4 and the other end is closed by any suitable cap 7. Near the closed end of the tube 5 are apertures 6. The lug 8 (shown in Figs. 1 and 3) on the under side of the plate may have formed in it on the upper side the usual recess to receive the lid or plate-lifter.

The operation is as follows: The lid of plate 1 being in place on the stove or furnace, air, as indicated by the arrows, Fig. 3, enters through the opening 3 and after traversing the coiled tube 5 escapes into the fire-space through the openings 6. As the tube 5 is heated directly by the fire, the air passing through it also becomes raised in temperature, and in this state mingles with the unconsumed gases arising from the grate and causes their complete combustion. As a consequence a notable economy of fuel results.

In the modification shown in Fig. 3 the air-hole 3 is placed near the circumference of the circular lid or plate and the tube 5 is made in zigzag form instead of helical.

In Fig. 4, 9 is a furnace-door having a circular opening adapted to receive the plate 1, which is detachably retained therein by clips 10 and button 11.

I claim—

1. As a new article of manufacture, the cover-plate of a stove or the like having an opening, a serpentine tube secured on the under side of said plate and communicating at one end with said opening, closed at the other end and provided with air-discharge apertures near said closed end.

2. As a new article of manufacture, the cover-plate of a stove or the like having a central opening, and a tube in the form of a flat helix communicating at its inner end with said opening and secured to the under side of said plate, the said tube being closed at its outer end and provided with air-discharge apertures in its wall near said closed end.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

CHARLES E. WHITAKER.

Witnesses:

T. M. BLEAKLEY,  
W. D. WARD.