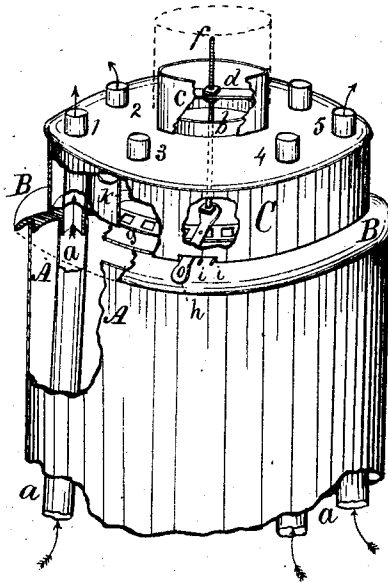


H. H. BENNET.
Heating-Stoves.

No. 153,657.

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Witnesses,
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UNITED STATES PATENT OFFICE

HORACE H. BENNET, OF DES MOINES, IOWA, ASSIGNOR OF ONE-HALF HIS
RIGHT TO GEO. W. BALDWIN AND GEO. A. McVICKER, OF SAME PLACE.

IMPROVEMENT IN HEATING-STOVES.

Specification forming part of Letters Patent No. **153,657**, dated August 4, 1874; application filed
February 25, 1874.

To all whom it may concern:

Be it known that I, HORACE H. BENNET, of Des Moines, Iowa, have invented certain Improvements in Heating-Stoves, of which the following is a specification:

The object of my invention is to save fuel by increasing the heating capacity of the stove and to simplify the means of regulating the draft of the stove and the ventilation of the room. It consists in an adjustable cap carrying a series of tubes to register with corresponding fixed tubes in the drum, when combined with a draft-register in the top of a stove and a stove-pipe support, as hereinafter fully set forth.

My drawing is a perspective view of the top portion of a stove, with parts broken away, and illustrates the construction and operation of my improvements.

A A represent the sheet-metal drum of a stove, and may vary in form and dimensions to suit fire-pots of different sizes and shapes. B B is a cast-metal plate forming the top of the stove or drum A. It has a suitable rim or flange to form a tight joint with the top edge of the drum A. Rods run through the plate B and downward, inside or outside of the drum, to connect both plate and drum with the metal ring or plate forming the base of the drum. *a a* represent a series of tubes running through the drum A and terminating in the top and bottom plates of the drum. They may be sheet metal, wrought or cast iron, vary in number and size, and rigidly attached to the top and bottom plates of the drum in any suitable way. C is an adjustable cap, carrying a series of tubes, 1 2 3 4 5. These tubes correspond in diameter and number with the fixed tubes *a* in the drum A. *b* is a rim or flange forming a part of the cap C, and is designed to project upward into a section of stove-pipe, to form a central journal that will have its bearing in the fixed stove-pipe section C. This section *c* has a bar, *d*, spanned through its center and rigidly attached to its sides. *f* is a rod rigidly attached in the center of the top plate B, and passes upward through the cap C, pipe-section *e*, and bar *d*. A screw-thread on its top portion provides a means of placing nuts below and above the bar *d*, and affords

a means of securing and adjusting the section *c*, which forms a bearing for the rim *b*, acting as a central journal for the cap C. The section *c* thus suspended over the cap and stove also forms a support for the stove-pipe required to connect the stove with a flue or chimney. *g* is a perforated ring-plate that fits in a corresponding groove or depression, or against a shoulder formed in or on the surface of the top plate B, and is designed for a draft-register. A circular row of perforations or openings in the plate B correspond in number, form, and size with the openings in the ring-plate register *g*. *h* is a lever or handle pivoted, on top of the plate B, to the rod *f*, and riveted or otherwise firmly attached to the movable ring-plate or register *g*. This handle extends outward through an opening formed in the base of the cap C, and serves to move the register *g*, and also the cap C. *i i* are fixed pins or stops to arrest the turning movement of the cap C. The ends of the opening in the base strike the stops *i* and retain the cap at the precise points required in the registration or non-registration of the fixed tubes *a* and the series of tubes 1 2 3 4 5. These stops *i* also serve as indicators to mark and tell when and how much direct draft is on or open in the top of the stove, and whether the air drawn into the tubes *a* escapes into the room or is carried off through the cap and pipe.

When the handle *h* is directly over the center of the stops *i i*, the register *g* leaves the direct upward stove-draft entirely open. Turned to either side it closes that direct draft. When the handle is moved to the left and has carried the cap C as far as it will be allowed to go by the right-hand stop *i*, the tubes in the drum A and cap C will register, and the air will circulate through them and the room. A reverse movement of the handle to the right will open the tubes *a* into the cap C, and the air conveyed by them will be carried off through the cap and pipe and chimney.

k is a sheet-metal partition, attached to and moved with the cap C and its series of tubes, and serves to form an annular chamber to inclose the tubes 1 2 3 4 5, and to prevent soot and smoke from getting into the tubes *a* when they open into the cap C. When the cap is

adjusted to allow the air in the tubes *a* to enter the cap to be carried off through the stove-pipe, the annular chamber formed by the partition *k* carries the volumes of air above the stove-draft and register *g*, and allows the air to escape through openings in the top of the partition *k*. By this means the ventilating-draft and stove or fire-draft are prevented from interfering with each other.

In the operation of my improvements the lower stratum of air in a room is drawn into the bottom openings of the tubes *a*, and becomes heated therein as it passes upward. When the cap *C* is adjusted to register the bottom openings of its tubes with the top openings of the fixed tubes *a*, the heated air in the tubes *a* will escape into the room again at the top of the tubes 1 2 3 4 5. A constant circulation and agitation of the air in a room may be thus produced to equalize the temperature in all parts of the room.

When it is desirable to ventilate the room and carry off vitiated air, the cap *C* can be adjusted to allow the air in the tubes *a* to pass through the cap and stove-pipe into the chimney.

The rod *f* forms a central axis upon which the movable and adjustable parts revolve, and the handle *h* is co-operative with the cap *C*

and register *g*, and serves to operate the independent movable parts jointly or alternately, as desired.

I claim as my invention—

1. The combination of the tubes *a* with the adjustable cap *C*, having a series of tubes, 1 2 3 4 5, and a partition, *k*, in the manner and for the purposes set forth.

2. The adjustable cap *C*, journaled to the plate *B* by means of the rim *b*, the suspended pipe-section *c*, bar *d*, and rod *f*, substantially as described, and for the purposes specified.

3. The partition *k*, with a series of openings in its top, in the cap *C*, to form an annular chamber inclosing the series of tubes 1 2 3 4 5, and the top openings of the tubes *a*, in the manner and for the purposes specified.

4. The combination of the drum *A*, having a series of tubes, *a*, the top plate *B*, supporting the register *g*, rod *f*, handle *h*, and pipe-section *c*, and the adjustable cap *C*, carrying the series of tubes 1 2 3 4 5, and the partition *k*, substantially as described, and for the purposes specified.

HORACE H. BENNET.

Witnesses:

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