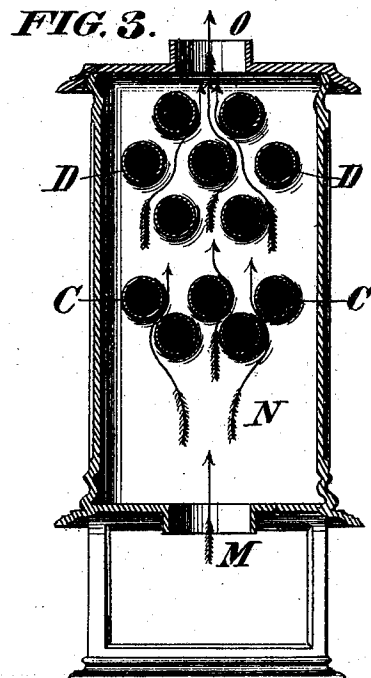
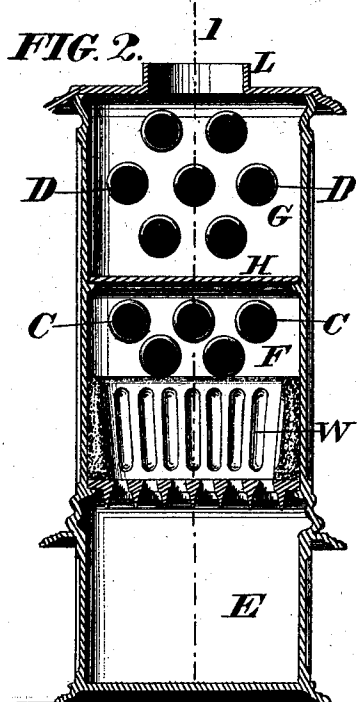
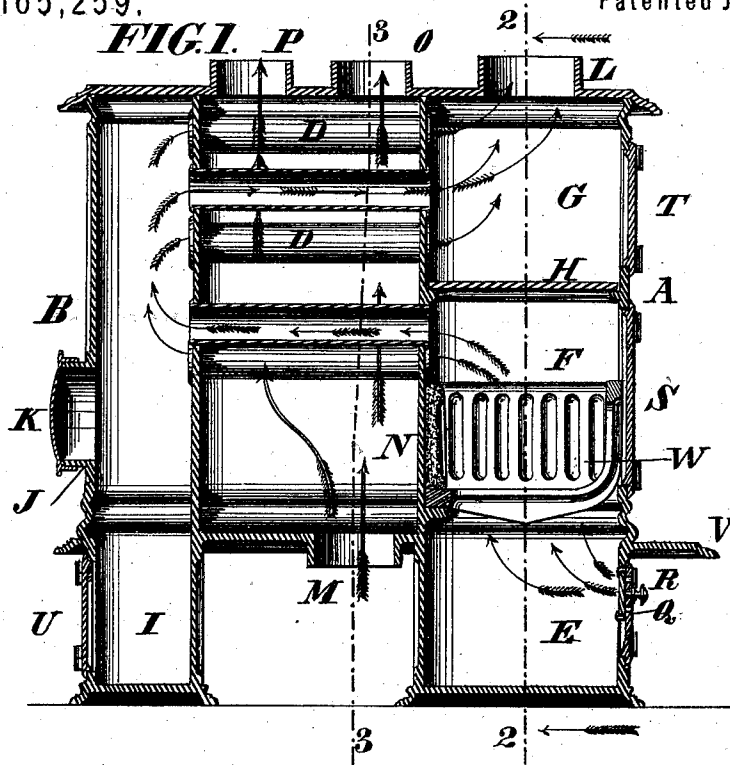


H. J. RUTTAN.  
Heating-Stove.

No. 165,259.

Patented July 6, 1875.



WITNESSES.  
Walter Allen  
Henry Tanner.

INVENTOR  
Henry Jones Ruttan  
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# UNITED STATES PATENT OFFICE.

HENRY JONES RUTTAN, OF COBOURG, CANADA.

## IMPROVEMENT IN HEATING-STOVES.

Specification forming part of Letters Patent No. **165,259**, dated July 6, 1875; application filed December 14, 1874.

*To all whom it may concern :*

Be it known that I, HENRY JONES RUTTAN, of Cobourg, in the county of Northumberland and province of Ontario, Canada, have invented a new and useful Improvement in Heating-Stoves, of which the following is a specification :

My improved stove is constructed with two vertical trunks connected by horizontal radiating flue-tubes, and is supported upon two pedestals constituting receptacles for ashes, dust, and soot. The front trunk contains the fire-chamber, above which is a horizontal partition, compelling the products of combustion to pass through horizontal tubes into the rear trunk, from which they are conducted through a second set of horizontal tubes to the upper portion of the forward trunk, whence they escape into the discharging-flue. The radiating tubes are preferably inclosed in a box or casing, constituting a chamber, to the lower part of which cold air is admitted, and from the upper part of which it is discharged in a heated state. Doors are provided in the front, in proper position to permit the cleaning of the flue-tubes, as hereinafter described.

In the accompanying drawings, Figure 1 is a vertical longitudinal section on the line 1 1, Fig. 2. Fig. 2 is a vertical transverse section the line 2 2, Fig. 1. Fig. 3 is a vertical transverse section on the line 3 3, Fig. 1.

A and B represent, respectively, a front and a rear trunk connected by horizontal tubes C and D—any necessary number of tubes being used in each cluster. The front trunk A contains the ash-pit E, (constituting a pedestal to support the front of the stove,) the fire-box F, the upper chamber G, and a horizontal partition, H, separating the fire-box F and chamber G. The lower range of tubes C communicates with the fire-chamber F, and the upper range of tubes D communicates with the chamber G above. All of the tubes open at their rear ends into the rear trunk B. The pedestal I supporting the rear trunk B constitutes a pit or receptacle for ashes, dust, or soot, which may be precipitated from the products of combustion or discharged from flue-tubes in cleaning. J is a collar, to which a direct-draft flue may be connected, or the said collar may be closed by a cap, K, as in

the illustration. L represents a collar for the discharge-flue from the chamber G. M is the induction for cold air into the chamber N, which surrounds the radiating tubes C and D. O P represent collars, by which any desirable number of pipes may be connected for the conduction of heated air to other apartments, or from which the heated air may be discharged into the apartment where the stove is used, if preferred. Q is the door of the ash-pit E, provided with a draft-register, R. S is the fire-door, which also affords facility for cleaning the lower range of tubes C. T is a door, affording access to the upper chamber and upper range of tubes D, for cleaning the same. U is a door, affording access to the rear pedestal I, for the purpose of removing dust, ashes, and soot therefrom. The fender V, and grate W, may be constructed in any suitable manner.

A fire being kindled in the fire-place F, a direct draft may be provided from the outlet J, if preferred; but under ordinary circumstances the draft will be amply sufficient through the tubes C, rear trunk B, tubes D, upper chamber G, and outlet L. The passage of the products of combustion in this manner causes a large extent of radiating surface within the apartment in which the stove is placed, and also for heating air within the chamber N, which air, being supplied through the inlet M, is rapidly heated by contact with the horizontal tubes C and D, and is discharged above, through as many outlets O P as may be provided. The horizontal flues C D afford in this manner highly effective radiating surfaces, while they provide, at the same time, ample draft for the products of combustion. By means of the doors S T, the pedestal I, and the door U giving access to the interior of said pedestal, the flues and all parts of the stove may be very readily cleansed and kept free. When the fuel is in active combustion the door S may be opened so as to give a cheerful open fire place. The partition H is removable, so that, if preferred, the products of combustion may be caused to pass directly backward through all the tubes C D, and escape through the direct outlet J, the collar L being closed by the cap K. It will be observed that the construction of

my stove, as above described, adapts it to be used in either manner at will, without any change in its structure.

The following is claimed as new:

1. The combination of the collar J, for direct-draft attachment with the rear trunk B, and the tubes C D, constructed and operating as described.

2. The combination of the removable plate

H in the stove, constructed as herein described, with two trunks, A B, connecting-tubes C D, and two collars, J L, for either direct or reversed draft.

H. J. RUTTAN.

Witnesses:

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