(No Model.) 2 Sheets—Sheet 1.

E. A. WIMAN.

HEATING STOVE.

No. 382,930. Patented May 15, 1888.

Fig. 3.

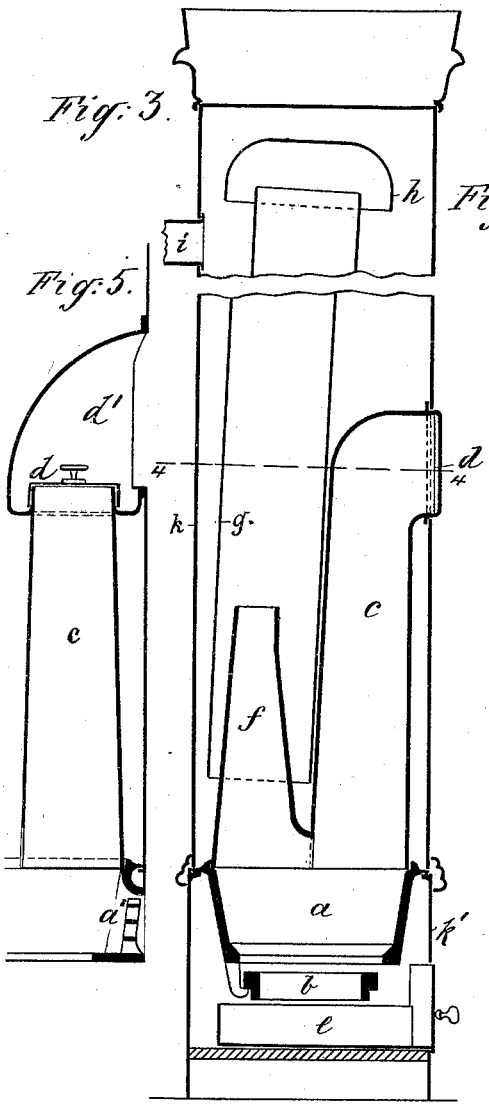


Fig. 5.

Fig. 1.

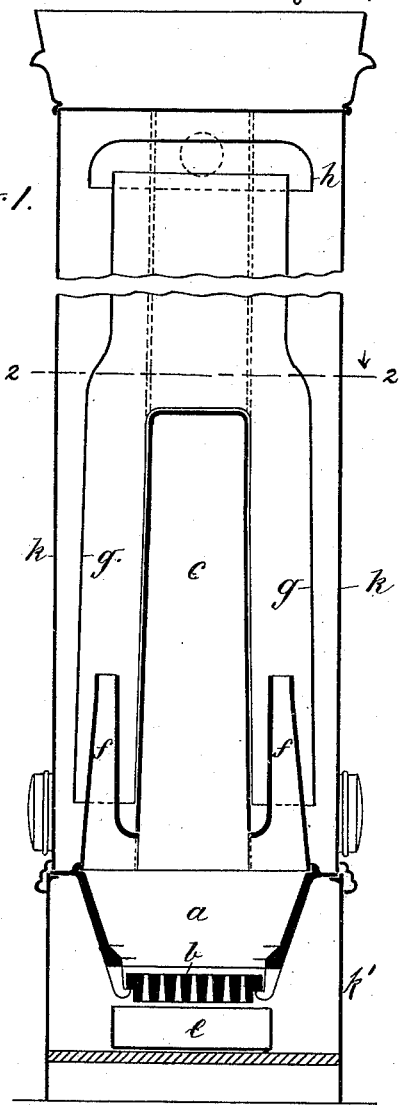


Fig. 4.

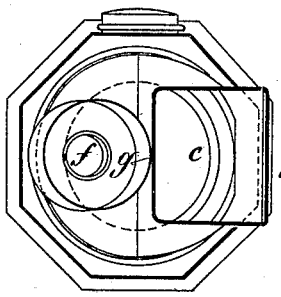
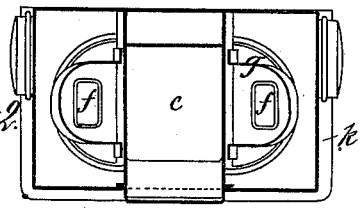


Fig. 2.



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(No Model.) 2 Sheets—Sheet 2.

E. A. WIMAN.

HEATING STOVE.

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Fig. 6.

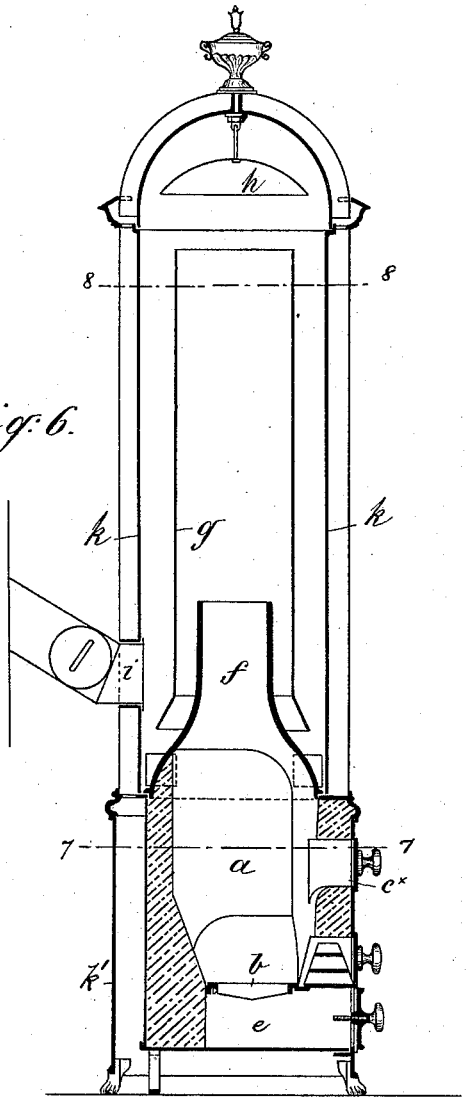


Fig. 8.

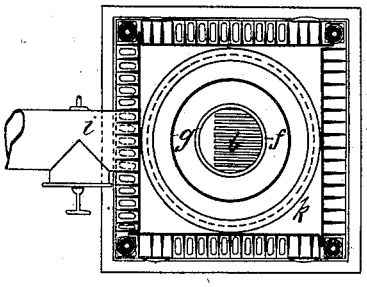
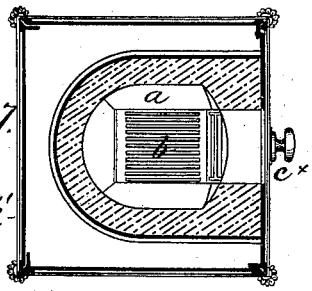


Fig. 7.



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UNITED STATES PATENT OFFICE.

ERNST AUGUST WIMAN, OF STOCKHOLM, SWEDEN.

HEATING-STOVE.

SPECIFICATION forming part of Letters Patent No. 382,930, dated May 15, 1888.

Application filed June 28, 1887. Serial No. 242,750. (No model.)

To all whom it may concern:

Be it known that I, ERNST AUGUST WIMAN, a subject of the King of Sweden, and a resident of Stockholm, Sweden, have invented certain new and useful Improvements in Heating-Stoves, of which the following is a specification.

My invention relates to that class of stoves employed for heating the rooms of dwellings, offices, shops, and the like; and the principal object of my invention is to produce a uniformly distributed and moderated temperature of the outer drum or radiating-wall of the stove, thus avoiding high temperatures, that are prejudicial to the sanitary properties of the air, and at the same time attaining the maximum of economy in the fuel used.

My invention will be hereinafter fully described, and its novel features carefully defined in the claims.

In the accompanying drawings I have illustrated several slightly different forms of stoves embodying my invention.

Figure 1 is a vertical axial section of one form of stove embodying my invention, and Fig. 2 is a transverse horizontal section of same on line 2 2 in Fig. 1. Fig. 3 is a vertical axial section of a slightly different form of stove embodying my invention, and Fig. 4 is a transverse horizontal section of same on line 4 4 in Fig. 3. Fig. 5 is a fragmentary sectional view which illustrates a slight modification that will be hereinafter described. Fig. 6 is a vertical longitudinal section of another form of stove embodying my invention; and Figs. 7 and 8 are transverse horizontal sections of same, taken, respectively, on lines 7 7 and 8 8 in Fig. 6.

Before proceeding to describe my improved stove with reference to the drawings, I will say that it is constructed of iron and of an upright or columnar form. Its fire-pot may or may not be lined with fire brick or tiles, and it may or may not have a fuel-magazine.

Referring first to Figs. 1 to 5, *k* is the outer drum or radiating-wall of the stove, which is mounted on any suitable form of base, *k'*. This drum is closed at top and bottom to the outer air, and is only open for the passage of products of combustion from the fire-pot.

a is the fire-pot, herein shown as unlined. The fire-pot is arranged to close the lower end of the drum *k*.

b is the grate.

e is the ash-pan under the grate, and *c* is the fuel-magazine.

In Fig. 2 the fuel-magazine is shown as opening out at the side of the stove, and it is provided with a door, *d*. In Fig. 5 I have illustrated a slight modification of this part of the stove, wherein a niche, *d'*, is formed in the side of the stove, and the magazine *c* opens into this niche. This figure also shows a register, *a'*, for admitting air, when required, directly into the fire-pot *a*.

The flames and gases from the fire pot ascend through rather short tapered upright pipes *f*, one or more, and escape from these into a larger upright flue or pipe, *g*, open at both ends, and arranged within the drum *k* of the stove. This pipe *g* extends downward, preferably, nearly to the fire-pot and upward nearly to the top of the stove. At its upper end the pipe or flue *g* is provided with an overhanging cap, *h*. This cap is in the form of an inverted cup, and its pendent margin extends below the top of pipe *g*. The gases escape from the stove at the outlet *i*. This outlet should be placed below the upper end of pipe *g*, and it may be quite low down, as seen in Fig. 6. The lower ends of the pipes *f* and the magazine *c* together embrace or include the whole area of the upper part of the fire-pot.

When the stove is in operation, the hot gases ascending through pipe *f* mix with the gases already in the drum or body of the stove, and create within the pipe *g* an upward current and exterior to said pipe a downward current. Thus the hot gases, by mixing with gases of a lower temperature, produce a gaseous mixture of a proportionately lower temperature, and this mixture radiates its heat to the outer wall, *k*, in a substantially uniform manner, the stove being about as hot near the top as it is near the bottom; but no air enters the drum or pipe *g* from the outside. It is only the air that may be any time within the drum and the hot gases from the fire-pot that rise through pipe *g*, are deflected downward by cap *h*, and flow thence to the outlet.

Fig. 6 illustrates the embodiment of my invention in a stove having no fuel-magazine

and having its fire-pot *a* lined with fire-tiles. In this view $c^{\times}$ represents the charging-door. The cap *h* is suspended over the upper end of the pipe *g* in the manner of a smoke-bell. This device only partly subserves the purpose of the cap shown in Figs. 1 and 3, as it does not house the top of pipe *g*.

I do not wish to limit myself to the exact construction and arrangement of the several parts herein shown; as these are susceptible of some modification without departing materially from my invention.

Having thus described my invention, I claim—

1. In a stove, the combination, with the drum *k*, closed at top and bottom and provided with an outlet for the products of combustion, of the upright pipe *g*, arranged within said drum and open at top and bottom, the fire-pot *a*, and the pipe or pipes *f*, extending from the fire-pot up into pipe *g*, said pipe *f* forming the outlet for the products of combustion from the fire-pot, substantially as set forth.

2. In a stove, the combination, with the drum *k*, closed at top and bottom and provided with an outlet for the products of combustion, of the fire-pot *a*, the magazine *c*, the pipe *g*, arranged inside the drum and open at both ends, and the tapered pipes *f*, extending from the fire-pot up into said tube *g*, and forming a passage for the products of combustion, as set forth.

3. In a stove, the combination, with the drum *k*, closed at top and bottom and provided with an outlet for the products of combustion, the fire-pot, the pipe or pipes *f*, and open-ended pipe *g*, all respectively arranged as set forth, of the cap *h*, having the form of an inverted cup, arranged over the upper end of pipe *g*, with the rim extending below the top of the said tube, as set forth.

In witness whereof I have hereunto signed my name in the presence of two subscribing witnesses.

ERNST AUGUST WIMAN.

Witnesses:
NERE A. ELFWING,
ERNST SVANGVIST.