

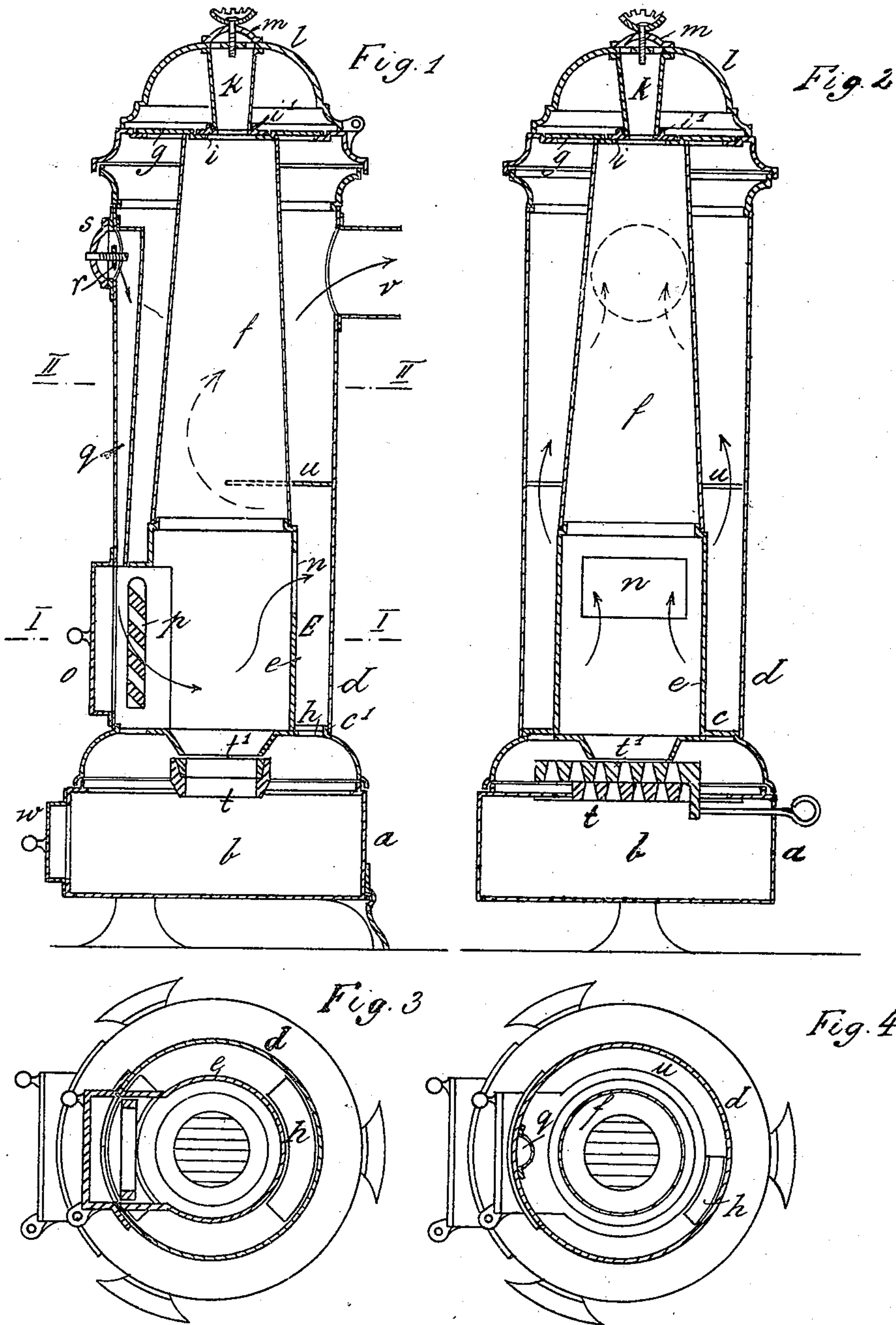
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C. LINZEN, JR. & E. DEMMER.
STOVE FOR LIGNITE CAKES, PEAT, OR LIKE FUEL.

(Application filed July 1, 1899.)

(No Model.)



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STOVE FOR LIGNITE CAKES, PEAT, OR LIKE FUEL.

SPECIFICATION forming part of Letters Patent No. 663,451, dated December 11, 1900.

Application filed July 1, 1899. Serial No. 722,596. (No model.)

To all whom it may concern:

Be it known that we, CLEMENS LINZEN, Jr., residing at Unna, Province of Westphalia, and EWALD DEMMER, residing at Barmen, Rhenish Prussia, Germany, subjects of the Emperor of Germany, have invented new and useful Improvements in Stoves for Lignite Cakes, Peat, or Like Fuel, of which the following is a full, clear, and exact specification, such as will enable others skilled in the art of this manufacture to make and use the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon.

The nature of the said invention and improvements herein contained and set forth consists of an arrangement of the fire-box within an outer casing and forming in its upper portion a magazine or conically-shaped gas and smoke combustion chamber in the manner and by the means substantially as herein described and set forth.

It also consists in the employment of a sort of blast-pipe being applied to the top of the fire-chamber, communicating therewith and with the air above the stove or heater in the manner and for the purposes substantially as herein described and set forth.

It also consists in the employment of a tube which is arranged in front of the stove or heater for the purpose of supplying air in the manner as herein described and set forth.

Like letters of reference represent and refer to like or corresponding parts of the said invention and improvements.

Figure 1 represents a vertical section of a lignite-cake burning or heating stove on a vertical line through the center of the exit-pipe. Fig. 2 is a vertical section taken at right angles to Fig. 1. Fig. 3 is a horizontal section along line I I of Fig. 1. Fig. 4 is a horizontal section along line II II of Fig. 1.

a is the base of the stove or heater; of any suitable or desired form, which contains the ash-pit *b* and is closed at its top by a suitable plate *c*. From said plate projects a circular or otherwise shaped flange *c'*, which is for the purpose of receiving the lower end of the outer casing *d*, the form of which may be either circular or otherwise suitably shaped.

Within this outer casing is seated upon the base and secured thereto in a similar manner as the casing *d* a cylinder *e*, forming the fire-box. Upon it is seated and secured in a suitable manner a magazine *f*, which serves for consuming smoke and moisture resulting from the fuel. By means of the outer cylinder *d*, the fire-box *e*, and the magazine *f* is formed a chamber *E*, which is closed at the top by a plate *g*, but has connection with the ash-pit *b* by slots or apertures *h*, cut in the plate *c*. The plate *g* projects within the top portion of the magazine *f*, being thus a support for an annular plate *i*, which, diminishing the opening of the cone, is provided with a collar *i'*. Into this collar fits the bottom portion of a draft-pipe *k*, which by means of a top flange is fastened to the cover *l* of the stove. Said cover *l*, being provided with apertures over the draft-pipe, carries an adjustable lid *m*, allowing atmospheric air to be admitted through the draft-pipe to the fuel in the fire-box *e*. The latter communicates with the chamber *E* by means of an aperture *n* and has arranged in front of the door *o* a vertical grate *p*. Over this grate is arranged in front of the stove an air-admission tube *q*, the opening *r* of which, being near the top of the outer casing, is closed by an adjustable door *s*. Underneath the fire-box *e* is constructed the fuel-grate. It consists of a fixed portion *t* and a movable portion *t'*, which either may be placed over or under the fixed grate. When the stove is burning, the grate is closed, so that no fuel or ashes can be passed into the ash-pit *b*. In the chamber *E* of the stove or heater is arranged and constructed a deflector *u*, substantially as shown at Figs. 1 and 2, for the purpose of leading the gases.

v is the smoke and gas exit pipe, and *w* the door for removing the ash from the ash-pit.

The operation of our stove is as follows:

The stove is charged with fuel after opening the cover *l* and removing the ring *i* by filling the fuel through the fire-box *f* into the chamber *e*. The stove is then closed and the fuel ignited through the door *o* and the vertical grate *p*. Air is admitted through the tube *q*. When the fuel has thoroughly ignited, the

gases and smoke evolved pass through the aperture n into the chamber E. In this chamber they pass around the deflector u and enter the exit-pipe v . On their way they heat the magazine f , in which arise and collect the bituminous gases and the moisture contained in the used fuel and separating therefrom under the influence of the heat. These gases are dried in the magazine f . From above a stream of air coming through the draft-pipe meets the gases and presses them down into the fire, so that they are perfectly burned and are prevented from escaping into the room when the stove is opened for filling. The action of the draft-pipe is supported by the conical shape of the magazine f , by which the gases are forced partly downward into the flames. An economical burning of the stove will be obtained, as the admission of air can be perfectly and securely regulated. The grate, which is normally closed, allows a perfect consuming of the fuel, and by moving the grate the ashes will be pulverized before coming into the ash-pit. Gases evolving therein from kindling ashes can enter, through the slots h , the chamber E and join the gases therein contained. The admission of air from above the stove improves the air in the room.

Having thus described the nature, construction, and operation of the invention and improvements in stoves or heaters, what we claim as our invention is—

1. In a stove or heater, a base provided with an ash-pit and grate, a casing closed at its upper end seated upon said base and provided near its top with an outlet for the products of combustion, a fire-box seated upon the base

within the casing and spaced therefrom and provided with an opening n at the rear, a tube extending from near the top of the outer casing to the front of the fire-box, and communicating therewith, and also with the atmosphere at its upper extremity, means for regulating the passage of air therethrough and a magazine seated upon the fire-pot, extending upwardly to and opening through the top of the outer casing and a suitable closure therefor.

2. In a stove or heater, a base provided with an ash-pit and grate, a casing closed at its upper end seated upon said base and provided near its top with an outlet for the products of combustion, a fire-box seated upon the base within the casing and spaced therefrom and provided with an opening n at the rear, a tube extending from near the top of the outer casing to the front of the fire-box, and communicating therewith, and also with the atmosphere at its upper extremity, means for regulating the passage of air therethrough and a magazine seated upon the fire-pot, extending upwardly to and opening through the top of the outer casing and a suitable closure therefor, a draft-pipe fastened to the cover projecting into the magazine, and communicating with the air, and a base-plate c provided with apertures b leading into the ash-pit for the purpose described and set forth.

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