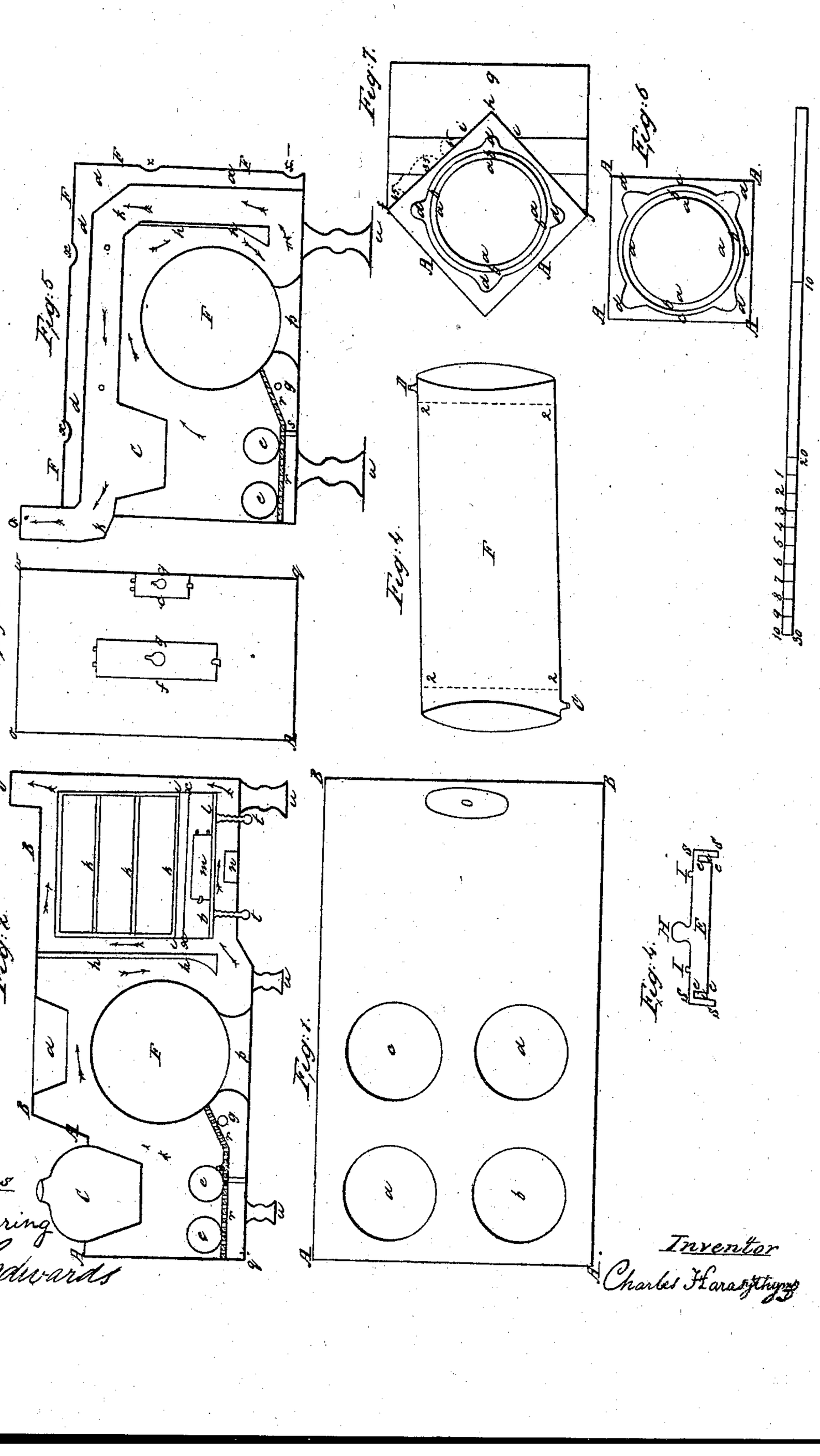
C. HARASYTHY.

PORTABLE WATER GAS APPARATUS.

No. 32,362. Patented May 21, 1861.



Witnesses
S. F. Searing
A. S. Edwards

Inventor
Charles Harasythy

UNITED STATES PATENT OFFICE.

CHARLES HARASZTHY, OF SAN FRANCISCO, CALIFORNIA.

PORTABLE WATER-GAS APPARATUS.

Specification of Letters Patent No. 32,362, dated May 21, 1861.

To all whom it may concern:

Be it known that I, CHARLES HARASZTHY, of San Francisco, in the county of the same name, in the State of California, have invented a new and Improved Apparatus for Generating Gas from Water in Combination with All Kinds of Animal Offal and Vegetable and Mineral Refuse; and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawings, to the letters of reference marked thereon, and the model.

The nature of my invention consists in a peculiar arrangement of an apparatus properly adapted to generate gas in cooking or parlor stoves.

To enable others skilled in the art to make use of my invention I will proceed to describe the construction of my apparatus and the process of operation, and will commence here first with its application to a cooking stove as represented by a model and Figures I, II, III, IV and 4 in the annexed drawings.

Fig. I represents the upper plate of the cooking stove; A, A, B, B, the four circles. *a*, *b*, *c*, *d*, denote the openings usual in our cooking stoves to put in the boiler and other cooking vessels *b*, *d*, &c., (said openings being provided with tightly closing covers.) O, is the oblong jet for receiving the stove pipe. Fig. II represents the profile of said stove, A, A, is the lower, B, B, the upper and hinder part of the surface plate; *b*, and *d*, the cooking vessels, (which can be made visible here.) *e*, *e*, are the ends of the cylinders receiving the charcoal for the decomposition of the steam. F, shows one open end of the oblong retort resting on a bed of fire-bricks *p*. Said retort deviates a little from a horizontal position to give an easier egress to matters separated, as rosin, tar, &c. (See for this inclination Fig. IV.) g, is a cast iron tube's end, which receives the steam from the boiler in order to increase its degree of heat. *h*, *h*, divides the anterior part of the stove from the hinder one, to lead the draft around the retort. The collecting vessels for the eductions, the purifier and gasometer can be placed at the convenience of any one. In the back part of the stove is *i*, *i*, *i*, *i*, one of the doors of which two are required. The inner baking-room contains three grates K, K, K. Below the lowest of them is another movable grate to increase the heat, if wanted, with glowing coals; this grate *l*, *l*, is so constructed as to be raised or lowered at option by the screws *t*, *t*. *m*, is the door for putting the coals on said grate; *n*, is the door of the ash-pit; *x*, *x*, a sheet-iron plate closely fitting to prevent the smoke from entering the baking partition. O, is the jet for the stove pipe. *r*, *r*, are small cast iron grates to let the air through and keep the live coals between the cylinders *e*, *e*. *s*, is a prop for said grates.

Fig. III exhibits the lower front piece of the stove A, *v*, *w*, *q*. *f*, is the door for the fuel and *c*, that for the ash-pit. Both are provided with a round opening and a plate *y*, *y*, to be turned upon a pivot over said openings when needed to lessen or stop the draft.

Fig. IV gives a view of the cast-iron retort F, and its slight deviation from a horizontal line. D, is the upper jet for the pipe leading into the purifier; C, the lower jet for a pipe-piece through which the tar, rosin, &c., obtain their egress. The two dotted lines Q, Q, designate how much of said retort is within the inner compass of the stove.

Fig. 4, E, shows one of the two cast-iron stoppers for the retort F. (Four others are required upon the same principle and construction but corresponding in size with the cylinders *e*, *e*, Figs. II and V, for keeping them air tight.) *c*, *c* is a round turned plate three-fourths of an inch thick, fitting exactly the ends of the retort F, likewise turned inside. S, S, S, S, is a round casting provided with a rim (like the cover of a cup) with a knob H, in its center and several little holes, through which screws pass, I, I, to fasten the piece S, S, S, S, to the round plate *c*, *c*. The two intervals *i*, *i*, must be corresponding in dimension with the thickness of the turned ends of the retort. In the rims *s s* notches must be left for the jets C, and D.

Fig. V represents a side view of the parlor stove. The retort F, the cylinders *e*, *e*, the opening for the tea kettle *b*, are with the grates *r*, *r*, the tube *g*, the fire-brick bed *p*, the prop *s*, and the partition sheet *h*, *h*, the same as in the cooking stove, and explained there; here I have only to add that in the parlor stove the baking part is left out, and so the three openings for the pot, boiler and frying pan. The fire and smoke take their course here (as designated by arrows) di-

rectly into the stove pipe *o*, *o*, after having finished their circulation around the retort F. *o*, *o*, *o*, exhibits the stove pipe with its elbows *k*, *k*. A part, or nearly the whole of this stove can be situated in a room or vestibule adjoining the parlor and heated from said places. That part conspicuous in the parlor can be incased with Russian sheet iron Z, Z, Z, or a common one mounted with brass or silver, leaving an empty room *d*, *d*, *d*, *d*, of two or three inches between said incasing, the stove and the stove pipe *o*, *o*. Said incasing contains an equal number of openings below and above for the entrance of the cold air beneath and the egress of the heated air above. These openings to be provided with shutters, *x*, *x*, *x*, *x*, to temper the heat. The legs *u*, *u*, can be made high enough to give room underneath for the purifier and other vessels, to restrict the whole to as narrow a compass as possible.

Fig. VI shows the notched end of a brick pas-pipe A, A, A, A. The first inner circle *a*, *a*, *a*, *a*, encompasses the hollow of said pipe. *c*, *c*, *c*, *c*, is a notch between the circular level part C, C, C, C. The corner notches *d*, *d*, *d*, *d*, are the deepest. The other end of the brick pipe is the reverse of this. All what is here in basso is there in corresponding relievo in order to make with cement an airtight whole. Fig. VII shows such a brick laid with corners perpendicularly up and down, walled up to the corners *f*, *f*. *g*, is the foundation brick with a triangular notch *h*.

Commencing the gas generating operation, the retort F is filled with the above named materials, the stoppers E, E, daubed with a mixture of clay, salt, ashes and water fixed on. The cylinders *e*, *e*, are filled with small pieces of charcoal and capped alike air-tight. The fire in the stove being now lighted, and so soon as the charcoals in the cylinders become incandescent the communication between the boiling vessel *b*, the tube *g*, and the cylinders *e*, *e*, is opened and the gas will commence to evolve itself, and will pass from the cylinders as well as from the retort through the purifier into the gasometer, while the cooking and baking in the one, and the heating of the parlor by means of the other stove takes place.

The merit of my invention consists in the fact of making at the cheapest rate possible illuminating gas available to every one who wishes to use it, by means of my apparatus peculiarly arranged for this purpose and applicable on a larger or smaller scale under sundry circumstances; then to lead said gas in my earthen pipes at a much cheaper rate than through iron ones to any place needed, and finally to gain simultaneously without additional expenditure for fuel and some other requisites many valuable by-products heretofore not produced in this connection or in other gas-works.

I do not claim the method of generating gas from animal, vegetable or mineral matters in conjunction with water. Neither do I claim as my device separately the cylinders *e*, *e*, the retort F, the small tube *g*, the tongue *h*, *h* or the movable grate *l*, *l*, Fig. II, nor the incasing Z, Z, F, V, and for the present the earthen pipes Figs. VI and VII.

What I claim as my invention and desire to secure by Letters Patent, is—

The combination of the cylinders *e*, *e*, with the retort F, boiler *b*, and tube *g*, in connection with a stove used to produce gas as well as for heating, cooking and baking, substantially as described, and for the uses and purposes as herein before set forth.

San Francisco the 18th of February, 1860.

CHARLES HARASZTHY. [L. S.]

Witnesses:

JAMES L. KING,

F. I. THIBAULT.