

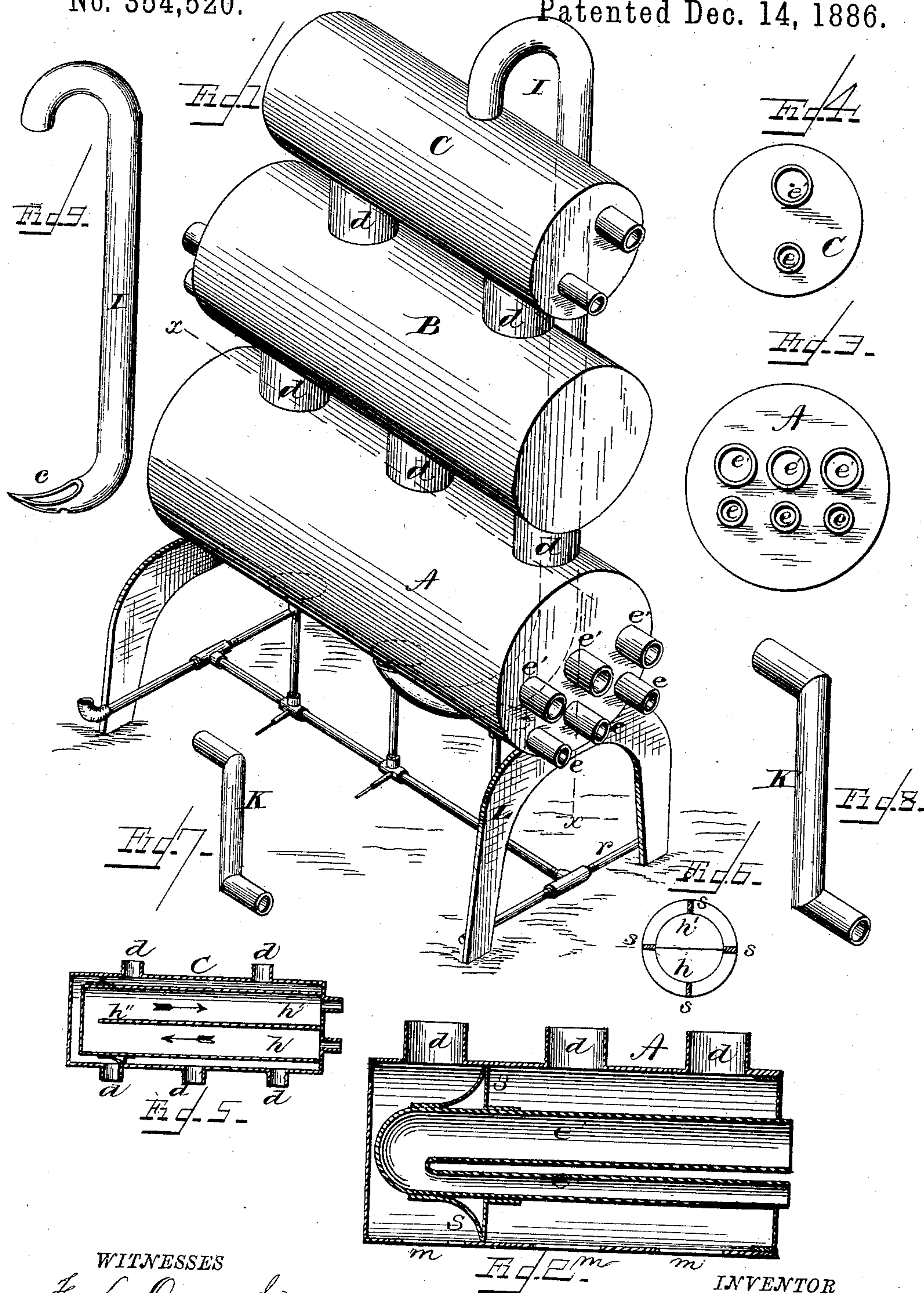
(No Model.)

J. STUBBS.

GASOLINE OR OIL HEATING STOVE.

No. 354,520.

Patented Dec. 14, 1886.



WITNESSES
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JESSE STUBBS, OF HENRY COUNTY, IOWA, ASSIGNOR OF ONE-SEVENTH
TO GEORGE A. STONE, OF SAME PLACE.

GASOLINE OR OIL HEATING-STOVE.

SPECIFICATION forming part of Letters Patent No. 354,520, dated December 14, 1886.

Application filed September 28, 1885. Serial No. 178,355. (No model.)

To all whom it may concern:

Be it known that I, JESSE STUBBS, a citizen of the United States, residing in the county of Henry and State of Iowa, have invented a new and useful Improvement in Gasoline or Volatile-Oil Stoves, of which the following is a specification.

My invention relates to heaters for warming rooms, which are arranged in combination with and operated by flames from the burners of ordinary gasoline or oil stoves; and it has for its object a more economic and convenient means of warming rooms than has hitherto been known.

My invention consists of sheet-metal heating drums or cylinders provided with internal heating tubes or flues, said flues being so arranged as to take cold air in at one end and discharge it heated at the other, and attachments for applying thereto for taking cold air for said purpose from localities remote from the stove, and for discharging the heated air at any required destination, either within the room in which the stove may be located or adjacent apartments thereto.

It further consists of one or more returning-pipes for collecting any gas or odor that may have passed through the heaters without being burned, and repassing it through the flame of the burners until all is consumed.

I will proceed to further describe my invention by referring to the accompanying drawings, which constitute part of this specification, of which—

Figure 1 is a perspective showing the exterior of the device in its combined form. Fig. 2 is a longitudinal vertical section of the first or lower heating-cylinder and a pair of internal air-heating flues, (represented at the dotted lines *x x* and *x x* of Fig. 1.) Fig. 3 is a vertical cross-section of the same. Fig. 4 is a vertical cross-section of a cylinder having but a single pair of internal air-heating flues. Fig. 5 is a vertical longitudinal section of a heating-cylinder having an internal air-heating cylinder, which internal cylinder is partly divided longitudinally by a horizontal partition, thereby forming of it a pair of return air-heating flues. Fig. 6 is a vertical cross-section of Fig. 5. Fig. 7 is a perspective of a pipe which may be varied in form and attached

to the mouth of one of the lower sections of the tubes or sets of air-heating tubes as a means of taking cold air for heating from low and cool parts of a room, or from adjacent rooms, or even external air, as a means of circulating fresh or pure air within by varying the form of said pipe or pipes to suit the specific purpose required, as above mentioned. Fig. 8 is a like tube or pipe for attaching to the discharge end of said air-heating tubes for the purpose of conveying the heated air to remote or cool localities in the room or to adjacent rooms by varying said pipe also suitably for the specific requirement. Fig. 9 is a returning-pipe for returning any gas or odor (that may escape from the burners unburned) from the top of the cylinders or drums after passing upward through them to the flame of a burner for reapplication to said flame.

In the more minute description of these several figures similar reference-letters will indicate like parts throughout, of which—

A is a sheet-metal cylinder arranged directly over a series of oil or gasoline burners, which burners may be of any kind in use, and which are mounted upon the stoves or pipes *n*. Said cylinder or drum has openings in its under side to correspond with and directly over said burners, respectively, which openings are designated by the letter *m* and by dotted lines in Fig. 1. It is also provided with return air-heating tubes or flues *e e'*, arranged longitudinally within it, so that the heat from said burners will have access to all sides of said tubes throughout their entire length within said cylinder. It will be observed that the ends of said return-tubes *e e'* extend outward beyond the end of said cylinder, to which ends may be attached additional pipes, as *k k'*, Figs. 7 and 8, the pipe or pipes *k* to be attached to the ends *e* and the pipe or pipes *k'* to the ends *e'*, for the purposes above described. As above stated, the form and dimensions of said pipes may be varied to suit any specific requirement; or they may be dispensed with if not needed, as the tubes *e e'* will act without said attachments, but an even temperature can be produced throughout a room by their use than otherwise. Said tubes *e e'* and pipes *k k'* may be either increased or diminished in number, as circumstances or

fancy may dictate; or, instead of using a series of tubes, as *e e'*, (shown in Figs. 1 and 3,) an internal cylinder may be adopted, having a horizontal partition extending from its front end to nearly its full length, with outer openings, *e e'*, connecting, respectively, with the subdivisions of said internal cylinder, as is shown at Figs. 5 and 6, Fig. 5 being a vertical longitudinal section through the center, and Fig. 6 a vertical cross section of the same; or, if preferred, but one return air-heating pipe may be used, instead of either of the above forms, as shown at C, Fig. 1, and at Fig. 4, the latter of which is a vertical cross-section. A multiplicity of tubes is, however, the more effective and therefore the better form.

One drum or cylinder may in some instances suffice; but the number may be increased at pleasure by connecting all succeeding cylinders or drums by means of flues *d*, through which flues the heat rising from the burners (mounted on the pipes *n*) continues to pass from one to another, thereby not only heating the outer casing of all the drums or cylinders used, but also the internal air-heating tubes or flues of all. A returning-pipe, I, Fig. 9, is also provided, which attaches at the top of the upper drum or cylinder and is curved downward, with its open discharging end in close contact with a burner, preferably having

an expanded pan-shaped terminus with said burner placed in it, thereby serving as a means of returning all gas or odor that may escape being consumed the first time to a re-contact with said flame, thus constituting a perpetual circuit, so that no gas or odor can escape therefrom.

v are the supply-pipes for conducting the fuel to the burners, to which an ordinary conducting-pipe from a reservoir connects at *v*.

s are stays attached to the air-heating tubes or flues, to hold them in place by said stays bracing against the outer walls of the cylinders.

Having thus fully described my invention, so as to enable others to understand the same, what I claim as new, and desire to secure by Letters Patent, is—

The combination, with burners of a gasoline or oil stove, of a series of sheet-metal heating-cylinders arranged over said burners, having openings *m* and connecting-flues *d*, the returned air-heating flues *e e'*, cold-air-supply pipes *k*, hot-air-discharge pipes *k'*, and the returning-pipe I, all substantially as herein shown, for the purposes specified.

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Witnesses:

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