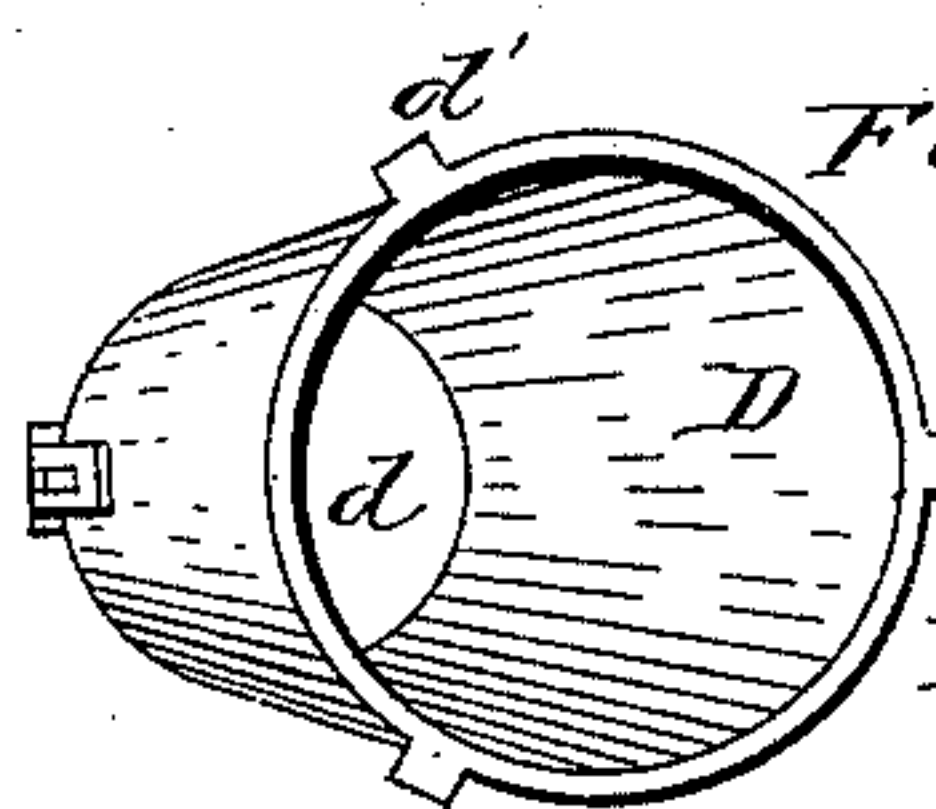
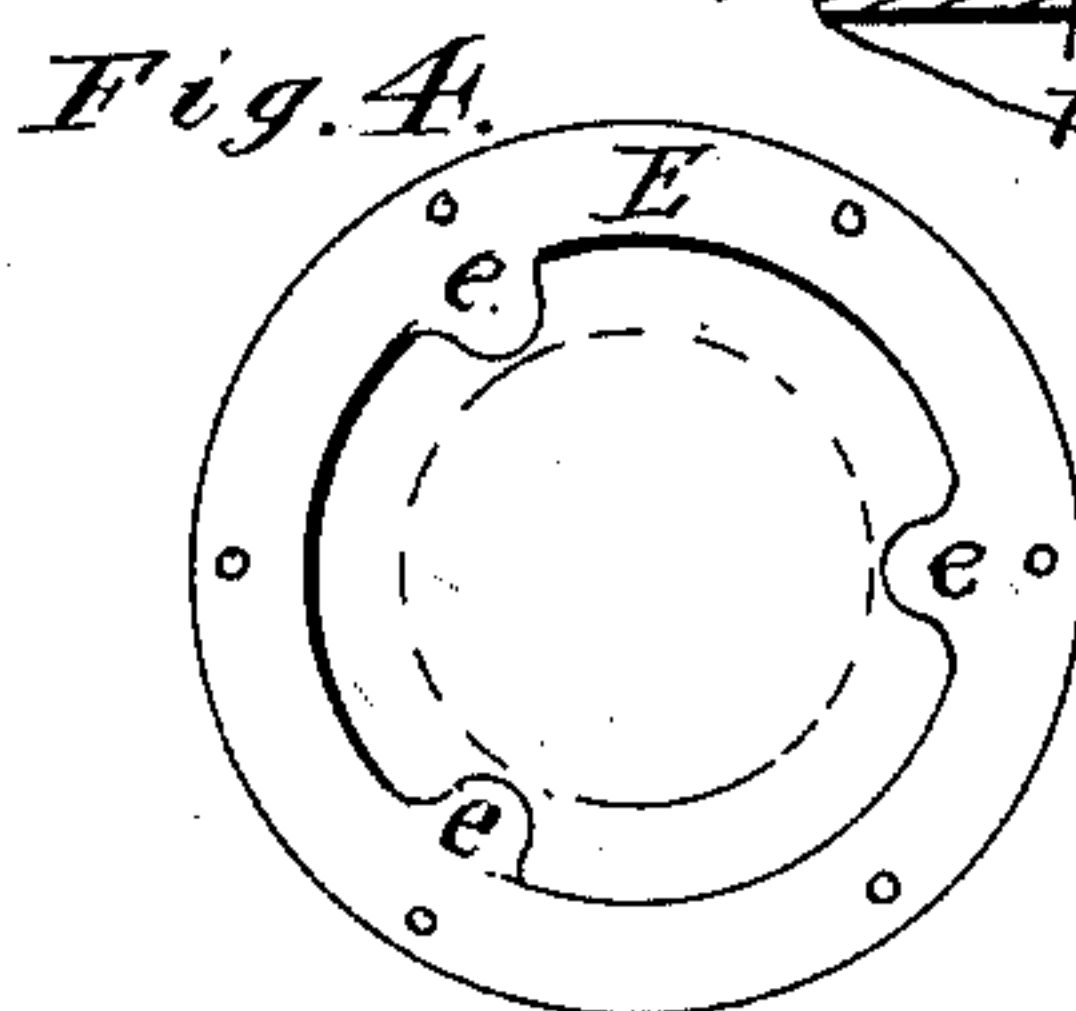
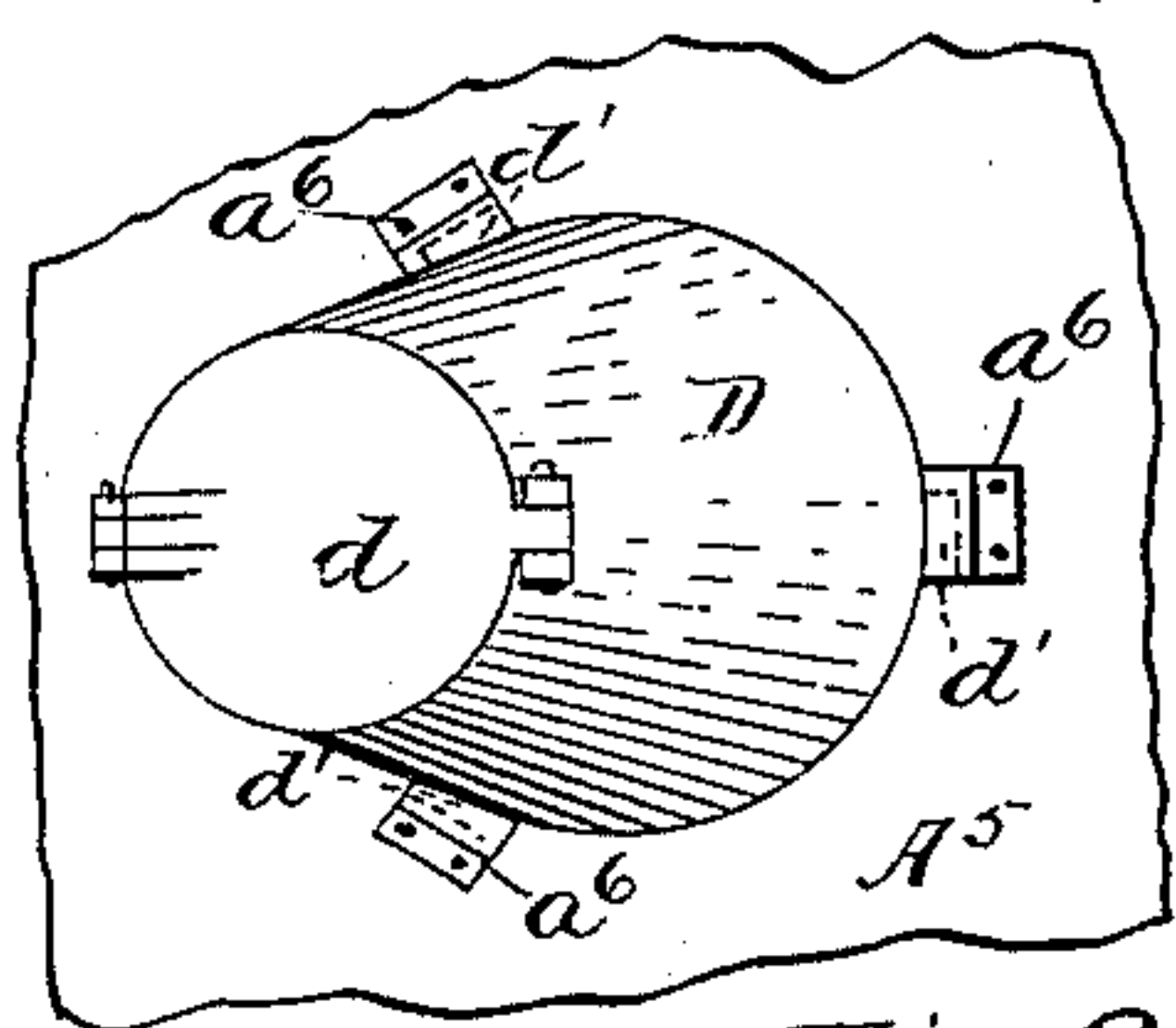
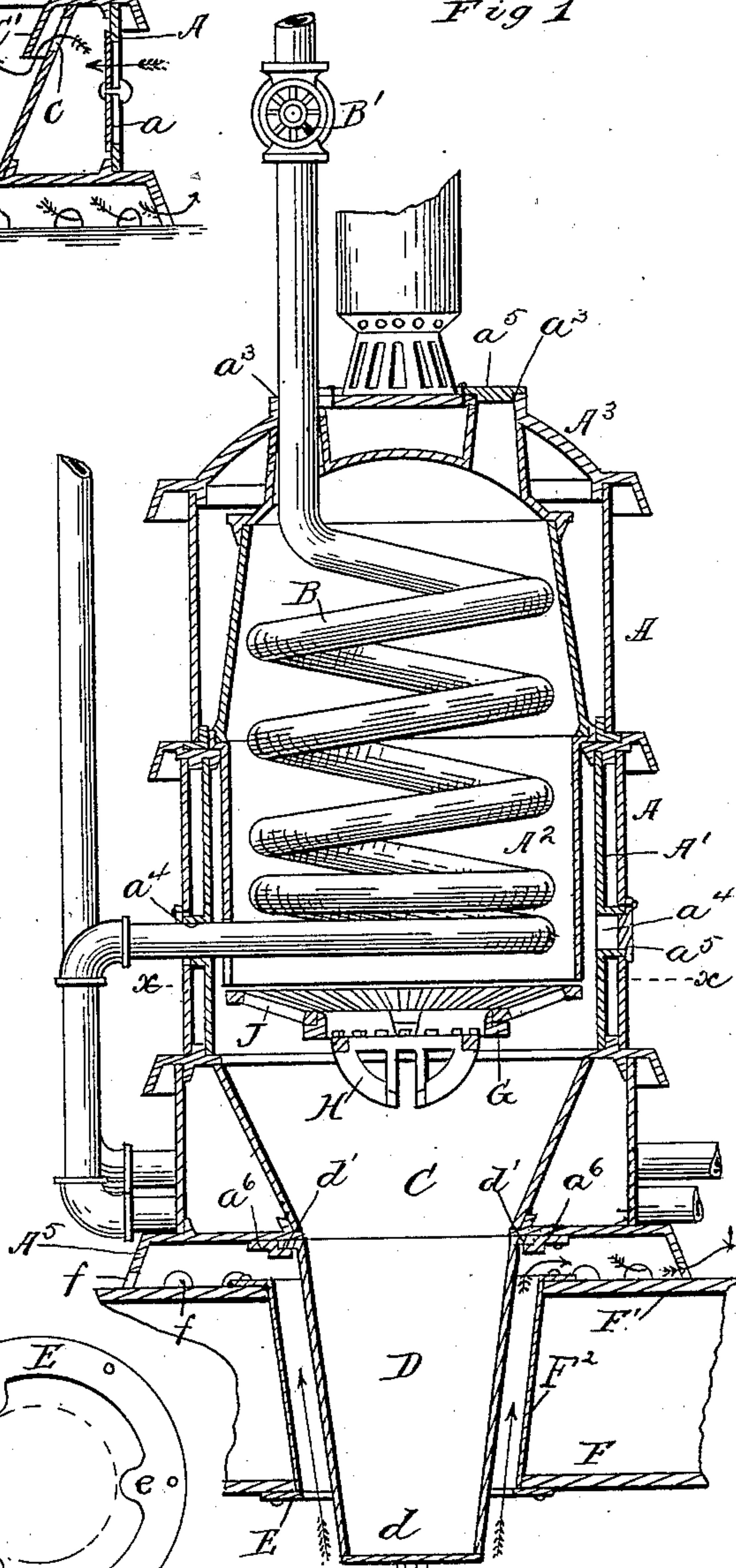
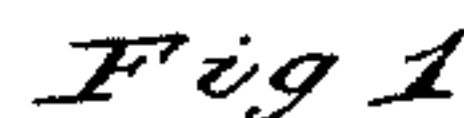


2 Sheets—Sheet 1.

No. 304,867.

Patented Sept. 9, 1884.



Witnesses
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A. M. Best.

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(No Model.)

2 Sheets—Sheet 2.

J. Q. C. SEARLE.

CAR HEATER.

No. 304,867.

Patented Sept. 9, 1884.

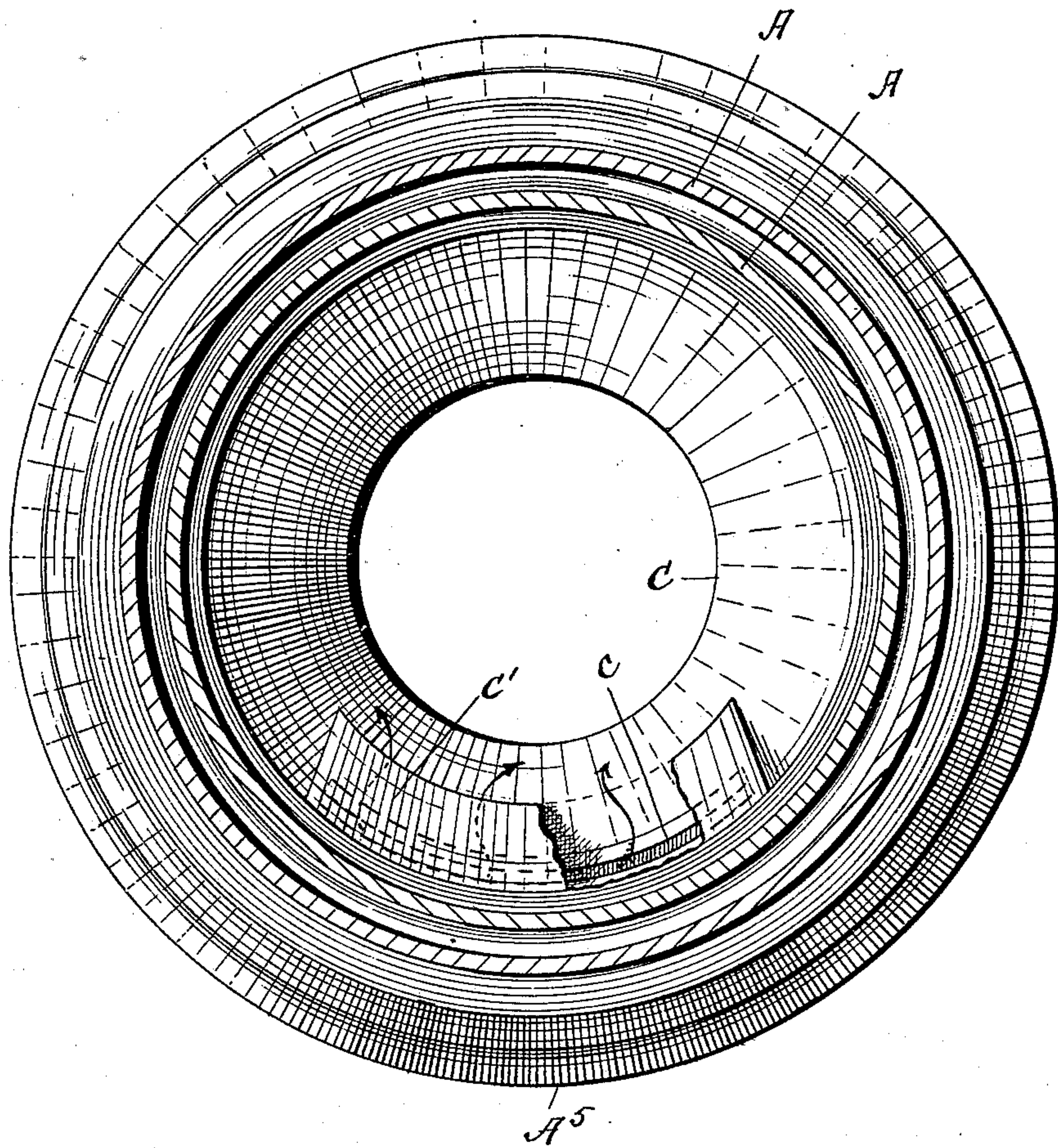


Fig 6

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UNITED STATES PATENT OFFICE.

JOHN Q. C. SEARLE, OF CINCINNATI, OHIO.

CAR-HEATER.

SPECIFICATION forming part of Letters Patent No. 304,867, dated September 9, 1884.

Application filed November 10, 1882. (No model.)

To all whom it may concern:

Be it known that I, JOHN Q. C. SEARLE, a citizen of the United States, residing at the city of Cincinnati, in the county of Hamilton, in the State of Ohio, have invented certain new and useful Improvements in Railway-Car Heaters, which are fully set forth in the following specification, reference being had to the accompanying drawings, in which—

Figure 1 is a vertical transverse section of a heater having my improvements. Fig. 2 is a bottom plan view of the ash-chute attached to the stove-bottom. Fig. 3 is a top plan view of the same. Fig. 4 is a plan view of the locking-ring which holds the ash-chute from turning. Fig. 5 is a detailed vertical front and rear section showing the draft-opening of the ash-hopper and its protecting-apron. Fig. 6 is a cross-section taken on the line xx , Fig. 1, showing a top or plan view of the ash-hopper with the grate removed.

The same letters denote the same parts in all the figures.

My invention relates to railway-car heaters constructed on the same general principle as that shown in Letters Patent No. 236,849, granted to me January 18, 1881; and it consists, partly, in such a heater provided with an ash-chute separately removable from below the car; partly in an air-flue between the ash-chute and the surrounding part of the car-floor, and partly in the several devices and combinations of devices which will be fully set forth hereinafter, and definitely pointed out in the claims, the object being to promote the durability of such heaters, safety in the use of them, and facility in making repairs and changes without removing the heater or disturbing the arrangements of the car.

In the drawings, A denotes the outer wall of that part of the heater which surrounds the fire-pot; A', the inner wall; A², the fire-pot, and B the hot-water coil. The outflow-pipe of the coil is provided with a globe-valve, B', for the purpose of regulating the outflow of hot water, and consequently the temperature of the water in the pipes which pass through the car. This device will form part of the subject of an application for patent which I intend filing shortly. The upper part, A³, of the drum of the heater is separate from the part which surrounds the fire-pot, and is detachably

affixed to it by screw-bolts or other suitable means, so that it can be readily taken off, and the hot-water coil taken out or put in. By taking out the coil the heater can be used as a radiator or ordinary stove. It has at the top three apertures, a^3 , arranged, respectively, to the right and left and rear of the center, so as to adapt it to different arrangements of the coil according as convenience may demand an outlet on either side or at the back of the heater. There are also three corresponding inlet-apertures, a^4 , in the lower section of the drum, for the entrance of the coil according to its arrangement in the heater. Each of these six apertures is provided with a pivoted cap, a^5 , or an equivalent cover, for closing it when not in use. Of course, when the heater is used as a radiator only all the apertures are closed. The ash-hopper C has in its front a draft-opening, c , the outer wall, A, having a corresponding opening, a , which may be closed by a slide in the usual way. The opening c is a little below the upper margin of the hopper; and an inwardly-sloping apron, C', depends from the upper margin behind the opening and extends a little below it, so that all ashes coming from above are carried down past the opening, and do not escape through it. The ash-chute D is separate from the hopper, and is in form an inverted conoidal frustum, and is inclined outwardly—that is, away from the middle of the track—so as to discharge the ashes without permitting them to fall onto the wood-work of the truck, as shown in Figs. 2 and 3 of the drawings. It has a hinged bottom, d , by means of which it can be readily emptied at any time. It has three lugs, d' , projecting laterally from its upper margin, and the heater bottom A⁵ has on its under side as many correspondingly-arranged brackets, a^6 , each open at its inner side and one end, the open end of one facing the closed end of the next in a continuous circuit, so that by turning the chute one way its lugs d' will all engage with their corresponding brackets, and by turning it the other way will all slide out. The chute can thus be easily and speedily taken out or put in from below the car, so that an injury to it does not necessitate any displacement of the heater. To prevent accidental detaching, a locking-ring, E, is screwed to the under side of the lower flooring, F, of the

car around the aperture through which the ash-chute depends. Lugs *e* project from its inner margin far enough to touch the chute. The chute being attached to the bottom of the stove and this ring screwed in place, the contact of the lugs *e* makes it impossible for the chute to turn, owing to the unequal convergence of its sides, so that the chute is firmly locked in its place. When, however, it becomes desirable to detach the chute, the screws which affix the locking-ring to the car-bottom can be readily unfastened and the ring removed.

Instead of the conoidal form shown in the drawings, the ash-chute might be the frustum of a leaning pyramid, and be attached to the heater-bottom by a pair of lugs arranged to engage and disengage with corresponding brackets by a backward and forward motion, which would be in like manner prevented by the lugs of a locking-plate. The greatest diameter of the ash-chute is considerably less than that of the aperture in the upper floor, *F'*, through which the chute passes, and the opening around the chute between floors is closed by a wall, *F''*, of galvanized iron or other suitable material, so that there is an air-flue all around the chute, leading from under the car to within the base of the stove. I make small openings *f* in the stove-base so that when the car is in motion there is a continual current of air from below the car up into the apartment containing the heater. The chute and the neighboring wood-work are thus kept cool, and all danger of firing or charring the floor by reason of hot ashes in the chute is removed.

The grate and its supports shown in the drawings will be made the subject of a distinct application.

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

1. In a car-heater, an ash-chute detachably

secured to the heater-bottom and extending downward through the floor of the car, in combination with a locking-plate detachably secured to the car-bottom and provided with lugs *e*, substantially as and for the purpose described.

2. The combination of an ash-chute detachably secured to the heater-bottom, and a locking-plate, *E*, secured to the bottom of the car and provided with openings for the air to pass through it, the bottom plate of the heater having no openings for the passage of air through it, and having suitable attachments for supporting it above the floor of the car, for the purpose of admitting air to pass up through the bottom of the car around the ash-chute and out under the bottom plate of the heater into the car, substantially as specified and shown.

3. The ash-hopper *C*, having a draft-opening in its wall, and an inwardly and downwardly sloping apron having no apertures, arranged above and behind it, substantially as and for the purpose described.

4. In a car-heater, a drum provided with apertures for the entrance and outlet of a hot-water coil, and with means for closing them when not in use, and having an upper section detachably affixed to the rest of the drum, for the purpose of making the heater convertible from a water-heater into a radiator, and vice versa, substantially as described.

5. In a car-heater, a drum provided with two or more sets of apertures for the entrance and outlet of a hot-water coil, and with means for closing them when not in use, for the purpose of changing the direction of the coil, substantially as described.

J. Q. C. SEARLE.

Witnesses:

ROBT. AVERY,
GEO. W. STEPHENS.