(No Model.) 2 Sheets—Sheet 1.

J. F. McELROY.

CAR HEATER.

No. 462,502. Patented Nov. 3, 1891.

Fig. 1

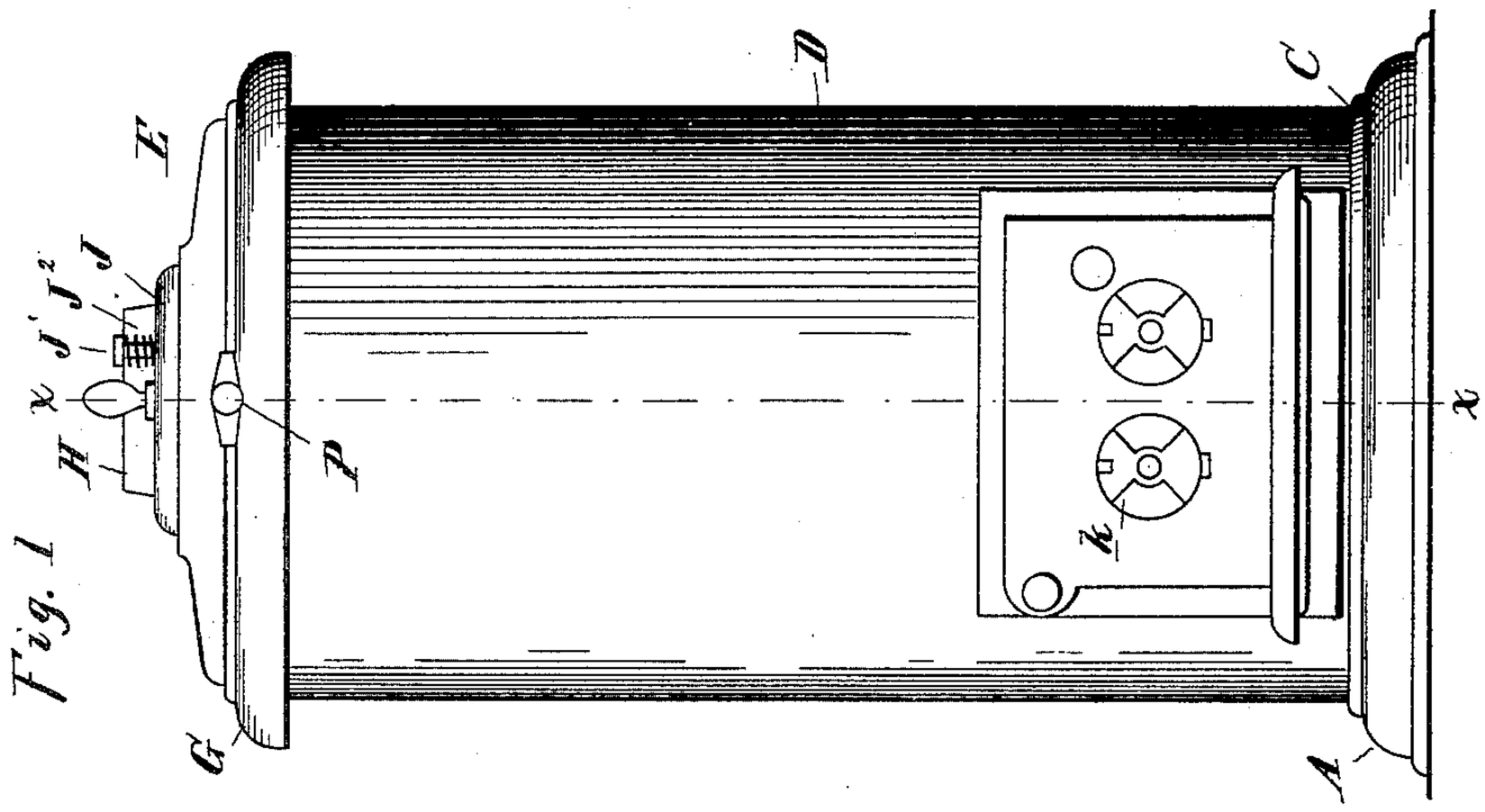
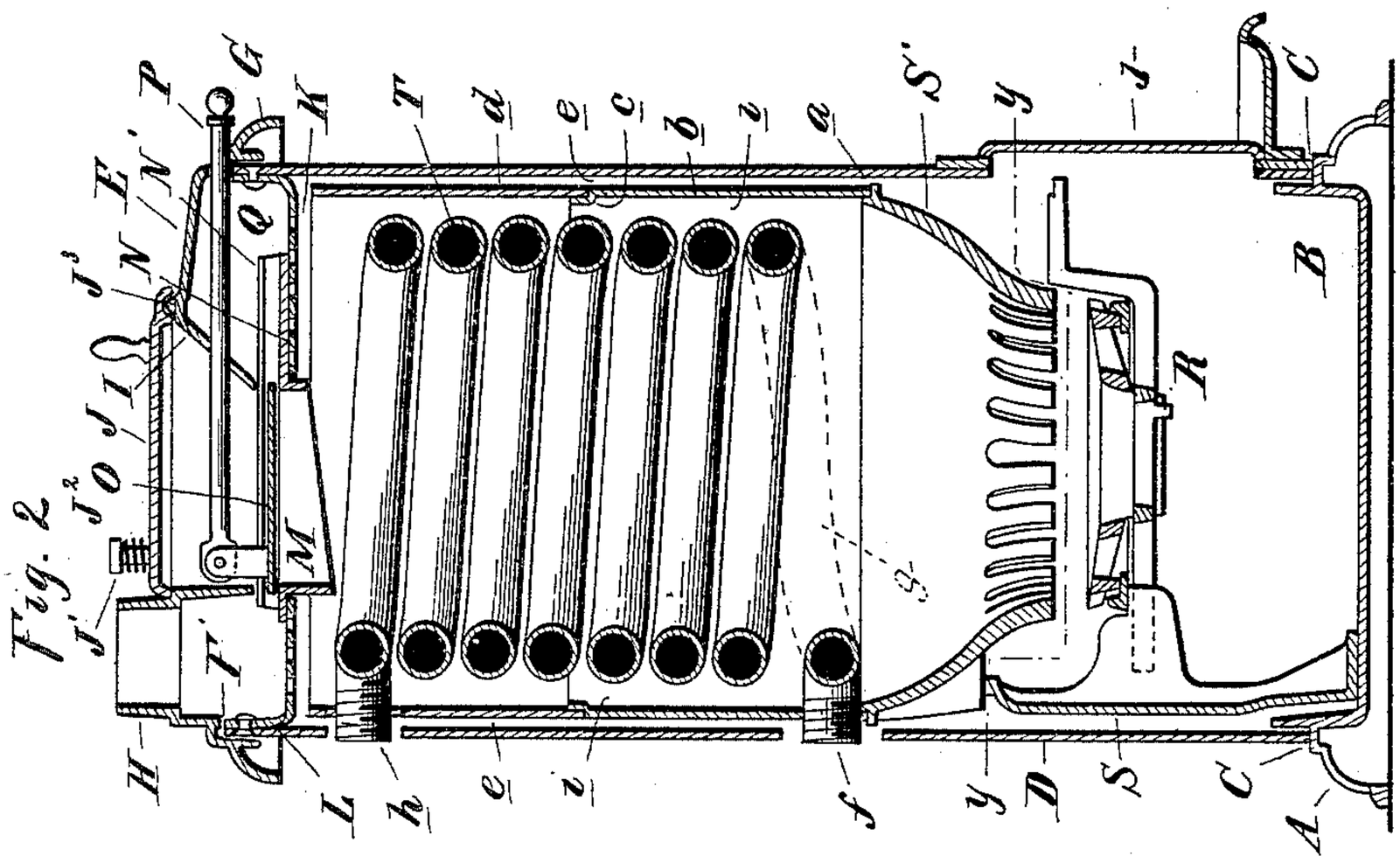


Fig. 2



Witnesses:
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M. B. Dogherty.

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By Thos. S. Sprague & Son
Atty.

(No Model.) 2 Sheets—Sheet 2.

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Fig. 3

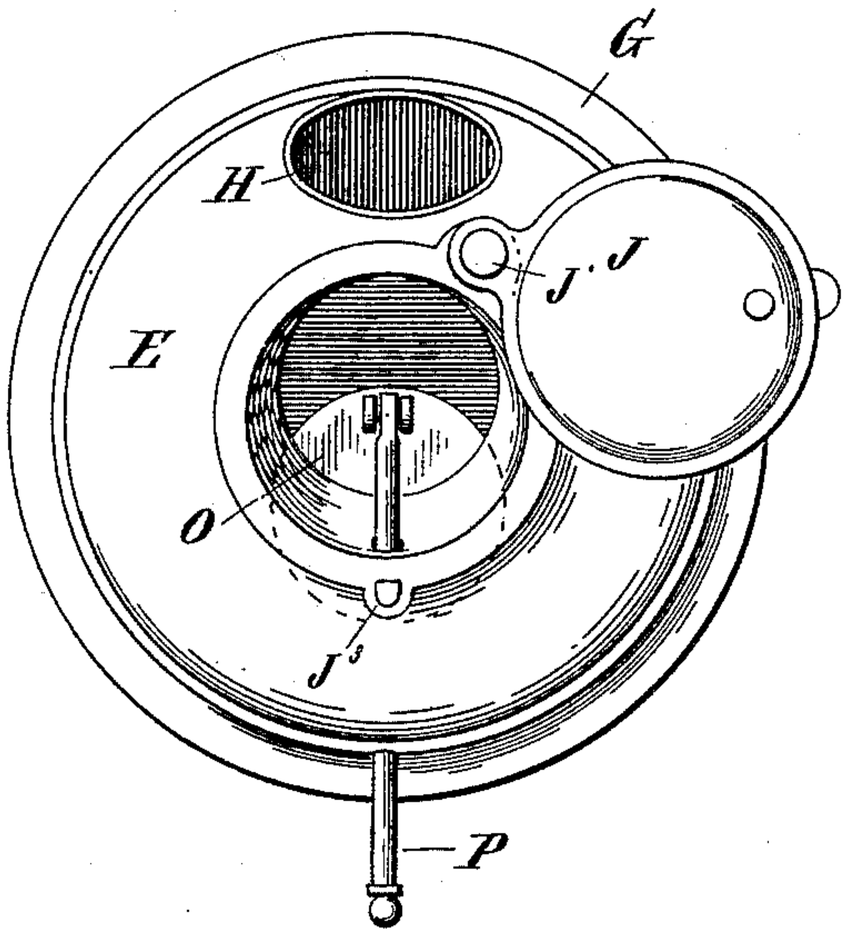
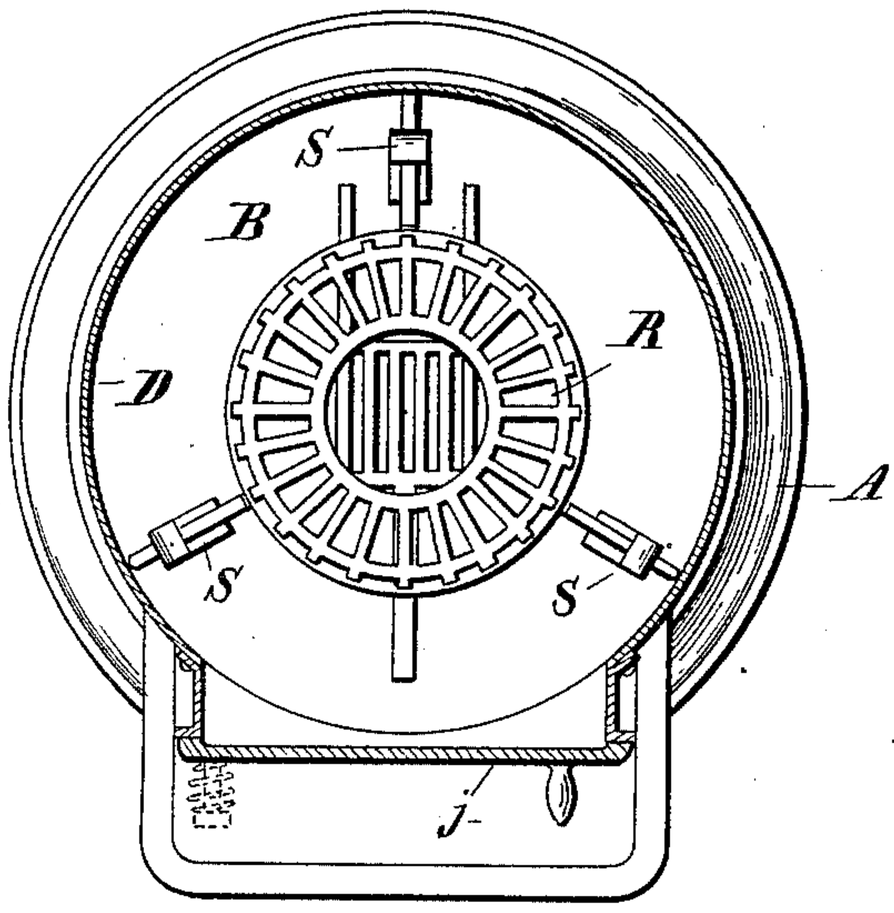


Fig. 4



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UNITED STATES PATENT OFFICE.

JAMES F. McELROY, OF ALBANY, NEW YORK, ASSIGNOR TO THE CONSOLIDATED CAR HEATING COMPANY, OF SAME PLACE.

CAR-HEATER.

SPECIFICATION forming part of Letters Patent No. 462,502, dated November 3, 1891.

Application filed May 29, 1890. Serial No. 353,657. (No model.)

To all whom it may concern:

Be it known that I, JAMES F. MCELROY, a citizen of the United States, residing at Albany, in the county of Albany and State of New York, have invented certain new and useful Improvements in Car-Heaters, of which the following is a specification, reference being had therein to the accompanying drawings.

This invention relates to new and useful improvements in car-heaters; and it consists in the peculiar construction of a magazine-stove designed to give the best results in economy of fuel, together with safety in case of accident, and, further, in the peculiar construction, arrangement, and combination of the various parts, all as more fully hereinafter described, and shown in the accompanying drawings.

In the said drawings, Figure 1 is a front elevation. Fig. 2 is a vertical central section on line *x x*. Fig. 3 is a plan, and Fig. 4 is a horizontal section on line *y y*.

A is the base, preferably cast, and having cast integral therewith the ash-pan B. This base has an annular shoulder C, which supports the outer shell D. This shell I preferably make by taking wrought-iron pipe of suitable diameter and cutting off a section of suitable length, thus forming a seamless casing.

E is the cap, having the annular shoulder F and flange G, the shoulder F resting upon the top of the casing D. The cap is provided with an upwardly-extending collar H, forming within the smoke-exit. The cap is centrally apertured to form a feed-opening, and around this aperture is formed the guide-flange I, the aperture being covered by a suitable cover J, pivoted upon the pin J′, and held together in position by means of the spring J^2 between the head of the pin and the top of the cover. The cover is provided with a locking-recess, which engages with the stud J^3 upon the top casting, being held in its locked position by the spring J^2.

Within the casing and across the upper end thereof is secured the perforated plate K, which has upwardly-extending flange L, by means of which this plate is bolted to the outer casing. The plate K is centrally apertured, and around this aperture is secured the depending guide-plate M, which has the extension N at one side, having guides N′ formed thereon, into which the sliding cover O engages. This cover has a suitable handle P extending through the top, whereby the aperture may be opened and closed by sliding the cover forward or back.

Q is the smoke-chamber formed between the top plate E and the perforated plate K.

R is the grate supported on the standards S, which likewise support the fire-pot S′. This fire-pot is provided with the annular flange *a*, which supports the inner casing *b*, which is provided with an inwardly-extending flange *c*, within which is secured the upper sections *d* of the inner casing. An air-space *e* is formed between the two casings. Within the inner casing I form a magazine by means of the coil T, which enters through the casings at *f* and is coiled within the inner casing, the lowermost helix of the coil *g* being an open or separated coil and the upper coils being closed—that is, wound so closely together as to form within the magazine-chamber, the coil finding exit at the upper end at *h*.

Between the coil and the inner casing is formed the combustion-chamber *i*.

The parts being thus constructed, their operation is as follows: The operator to fill the stove opens the door J and the sliding cover O. The coal is then poured in through the feed-opening, filling the magazine within the coil. A fire being started in the grate, the products of combustion will find exit through the combustion-chamber *i*, thence through the perforations in the plate K into the smoke-chamber, and thence through the smoke-exit in the stove-pipe. The lower open coils will be heated by the body of the coal resting within and by the heat from the products of combustion passing without.

j is the ash-door, which I make of suitable size, so that any part of the grate may be removed therefrom.

In case of accident the perforated plate K and top plate E will prevent any coal from getting out in case the stove is upset, and if the stove is not upturned the door J will remain closed by gravity. The air-space *e* be-

tween the two casings will prevent the outer case from becoming excessively hot, as said air-space connects into the ash-pit beneath, so that a draft of air can pass therethrough at all times, suitable dampers *k* being provided in the ash-door for the draft. By making the magazine within the coil I am enabled to get the best results in heating the water which passes through the coil and in economy in the manufacture of the stove. The body of coal within the coil prevents damage to the coil in case of collision. The heat of the coal in the magazine is imparted to the coil and is sufficient to keep the water circulating long after the fire is out. I am also enabled to make a magazine-stove which in ordinary railroad use will last for twenty-four to forty-eight hours without replenishing.

What I claim as my invention is—

1. In a car-heater, the combination of a casing, a water-circulating coil concentrically arranged with the casing, arranged to form a fuel-magazine within the coil, and a combustion-chamber within the casing outside the coil, a fire-pot, and a top having a feed-opening connecting into the fuel-magazine, substantially as described.

2. In a car-heater, the combination, with the casing and cover having a feed-aperture therein, of a pivoted door having a locking-recess, a locking-lug on the casing, and a spring, such as J^2, upon the pin holding the door upon the lug, substantially as described.

3. In a car-heater, the combination, with the casing, of the top E, having a feed-opening therein, perforated plate K, forming the smoke-chamber Q, a cover O, sliding in guides N′, the handle P, and cover J, substantially as described.

In testimony whereof I affix my signature, in presence of two witnesses, this 30th day of April, 1890.

JAMES F. McELROY.

Witnesses:

EDWIN A. SMITH,

HOMER J. NODINE.