

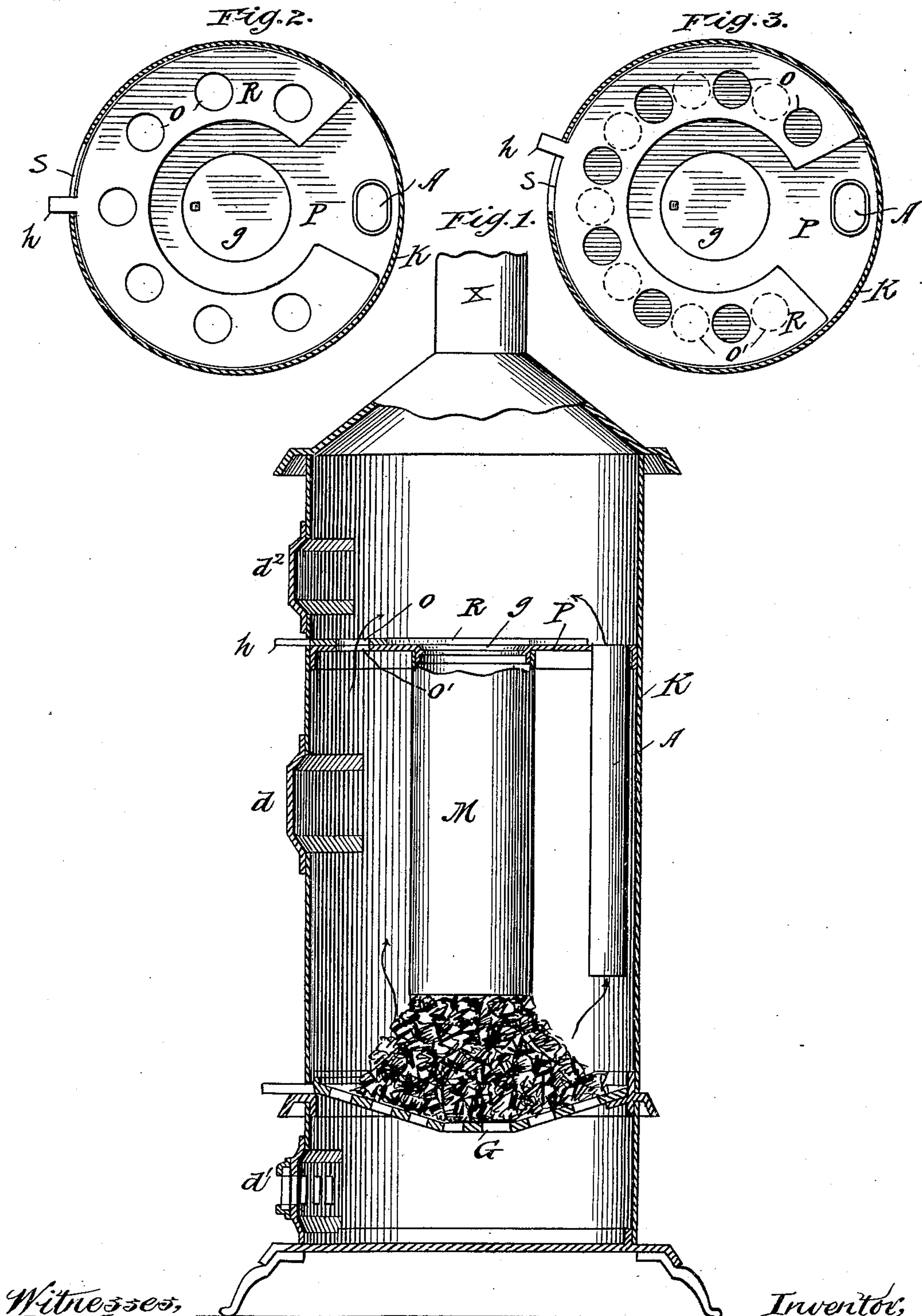
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Patented Feb. 5, 1901.

H. BARBER.
HEATING STOVE.

(Application filed Apr. 10, 1899.)

(No Model.)



Witnesses,
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UNITED STATES PATENT OFFICE.

HIRAM BARBER, OF CHICAGO, ILLINOIS.

HEATING-STOVE.

SPECIFICATION forming part of Letters Patent No. 667,285, dated February 5, 1901.

Application filed April 10, 1899. Serial No. 712,515. (No model.)

To all whom it may concern:

Be it known that I, HIRAM BARBER, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented a new and useful Heating-Stove, of which the following is a specification.

My invention relates to improvements in heating-stoves in which a combined cross-partition, register, and fuel-magazine are located above the grate, the object being to procure combustion of gases arising from the grate below. An air-shaft is also provided to afford a safety-duct through the cross-partition to prevent the escape of coal-gas into the room. I attain these objects by the mechanism illustrated in the accompanying drawings, in which—

Figure 1 is a sectional view of my device, showing the interior arrangement of the cross-partition and fuel-magazine and the register composed of the plates P and R, the air-shaft A, and grate G. Fig. 2 is a plan view of the register composed of plates P and R when open—that is, the openings *o* and *o'* coinciding—and showing also the upper end of the air-shaft A. Fig. 3 is a plan view of the register when closed.

In the construction of my heating device it will be observed that I make use of the plates P and R, which in combination form a cross-partition and register located above grate G. The distance between the grate G and the cross-partition is sufficient to afford a suitable chamber for the combustion of fuel. The partition-plate P is provided with the openings *o'*, which are preferably arranged in a semicircular form. Superincumbent upon the partition-plate P is placed the register-plate R, which is also provided with the openings *o*, arranged in semicircular form to correspond with the openings *o'* in the partition-plate P. The register-plate R is also provided with the handle *h*, which operates in the slot S, provided in the casing K, and which slot is so arranged as to permit rotary motion of the register-plate R and is of a sufficient width to permit the opening or closing of the openings *o'* in the partition-plate P by the register-plate R. The partition-plate P is located a sufficient distance from the top of the stove to afford a secondary combustion-chamber above the partition-plate P for the complete com-

bustion of the gases arising from the fire below the cross-partition when the degree of heat is sufficient to ignite the same in their passage through the openings *o'* and *o*.

A is an air-shaft which is tightly inserted into the opening provided therefor in the partition-plate P. The air-shaft A when in position extends downward from the cross-partition, preferably near the outer casing K, toward the grate G a distance sufficient to secure an oblique or side draft from the fire on the grate G through the air-shaft A when the openings *o'* in the partition-plate P are closed by the superincumbent register-plate R. The door *d* is provided for the introduction of fuel when desired. As is usual in stoves of this general type, the door *d* may be opened more or less, as desired, for the regulation of the fire in the combustion-chamber between the cross-partition and the grate G. The door *d'* is provided for the removal of the debris arising from the combustion of fuel upon the grate G.

The partition-plate P is provided with an opening, into which is inserted the fuel-magazine M, which is adapted to the size of the stove and to the height of the coal-combustion chamber. The fuel is fed into the magazine through the door *d*². The magazine extends downward from the cross-partition and is closed at the top by the portable cover *g*, so as to prevent ordinary draft upward through the magazine, and thus to secure the diversion of it either to the register or to the safety-duct. When the utmost upward draft is desired, the cover may be removed.

X is the exit-flue leading to the chimney.

When fuel is ignited upon the grate G and the openings *o'* and *o* are coincident, the gases arising from combustion ascend through the passage formed by the openings *o'* and *o* and thence out through the pipe X. When, however, the apertures *o'* in the partition-plate P are closed by the register-plate R, the only exit for the gases arising from the combustion of fuel upon the grate G is the air-shaft A. The air-shaft A is never closed, and there is always to some extent a flow of heated gases upward through the same. The line of draft to the same from the ignited fuel located upon the grate G is, however, oblique and not as forceful as the direct as-

ceding draft through the passages formed by openings *o'* and *o*. The air-shaft A is of such size and capacity, proportioned to the size of the stove, as to afford a safety-escape for the excessive accumulation of gases. The advantage of this arrangement as embodied in my device is as follows: The magazine affords the usual automatic feed, and when the register R is closed the air-shaft always affords a safety-exit for the accumulated coal-gas from the combustion-chamber below the partition. This arrangement obviates the danger usually incident to the escape of coal-gas and is a safeguard against carelessness in operating the register-plate R—a constant menace to the occupants of rooms heated by stoves. When the register is closed, the ascending or direct upward draft from the fire is cut off, and the draft is thereupon converted into an oblique or horizontal draft from the surface of the fire to the lower end of the air-shaft A and the lowest possible support given to the continued combustion upon the grate G consistent with safety to the occupants of the room heated by the stove; or, in other words, when the register is closed the least possible amount of fuel is consumed upon the grate G consistent with the safety of the occupants of the room heated by the stove. The said oblique draft by diverting the heat from about the magazine greatly reduces the difficulty arising from the

ignition and consumption of the fuel within the magazine. Economy and prudence are thus happily combined.

Having thus explained the mode of construction and the nature and object of my invention, what I claim as novel, and for which I seek Letters Patent, is the following, to wit:

In a stove, the combination with the casing, of a combined register and cross-partition above the grate, means for opening and closing said register, a fuel-magazine depending from said cross-partition, a cover upon the upper end or mouth of said magazine and adapted to admit fuel and to prevent draft through the same, a door in the casing above said cross-partition and communicating with the mouth of said magazine and adapted to admit fuel, a door in the casing below said cross-partition and adapted for regulating the fire, and a safety-shaft extending downward from said cross-partition and near said casing and adapted to induce an oblique draft of the gases arising from the combustion of fuel and thereby to moderate the combustion of fuel upon the grate and to retard the ignition of fuel within the magazine, substantially as described.

Dated April 7, 1899.

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Witnesses:

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