No. 638,289. Patented Dec. 5, 1899.

B. F. SMITH.

MAGAZINE ATTACHMENT FOR STOVES.

(Application filed Mar. 22, 1899.)

(No Model.)

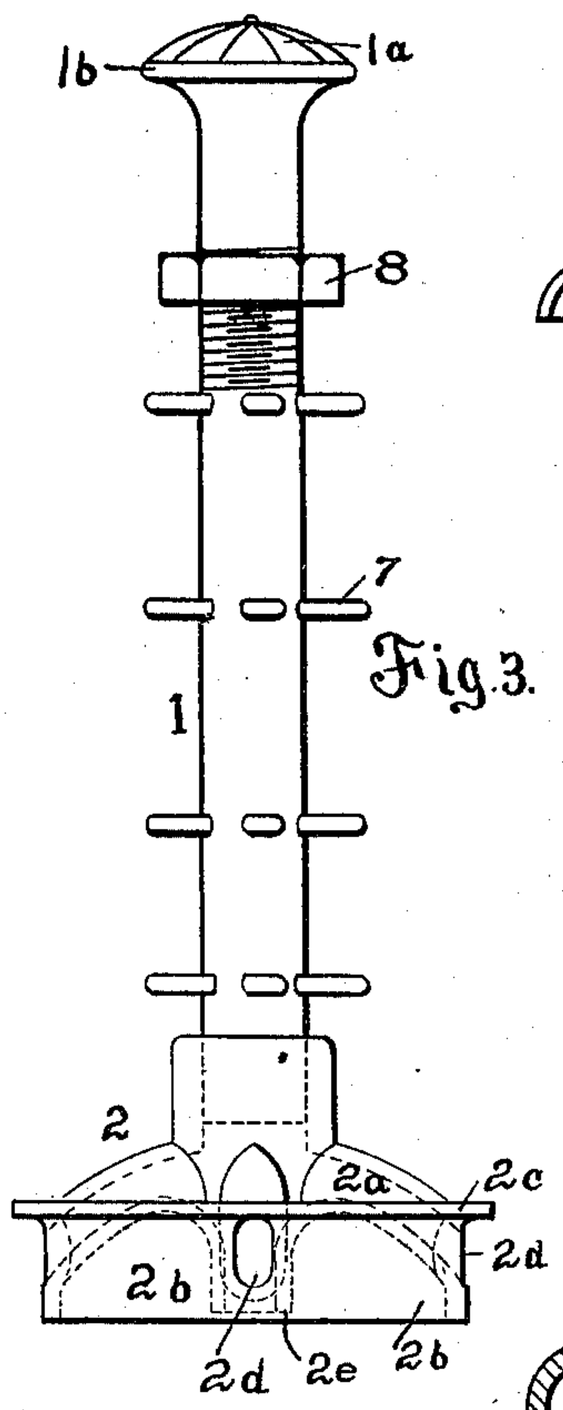

Fig. 3.

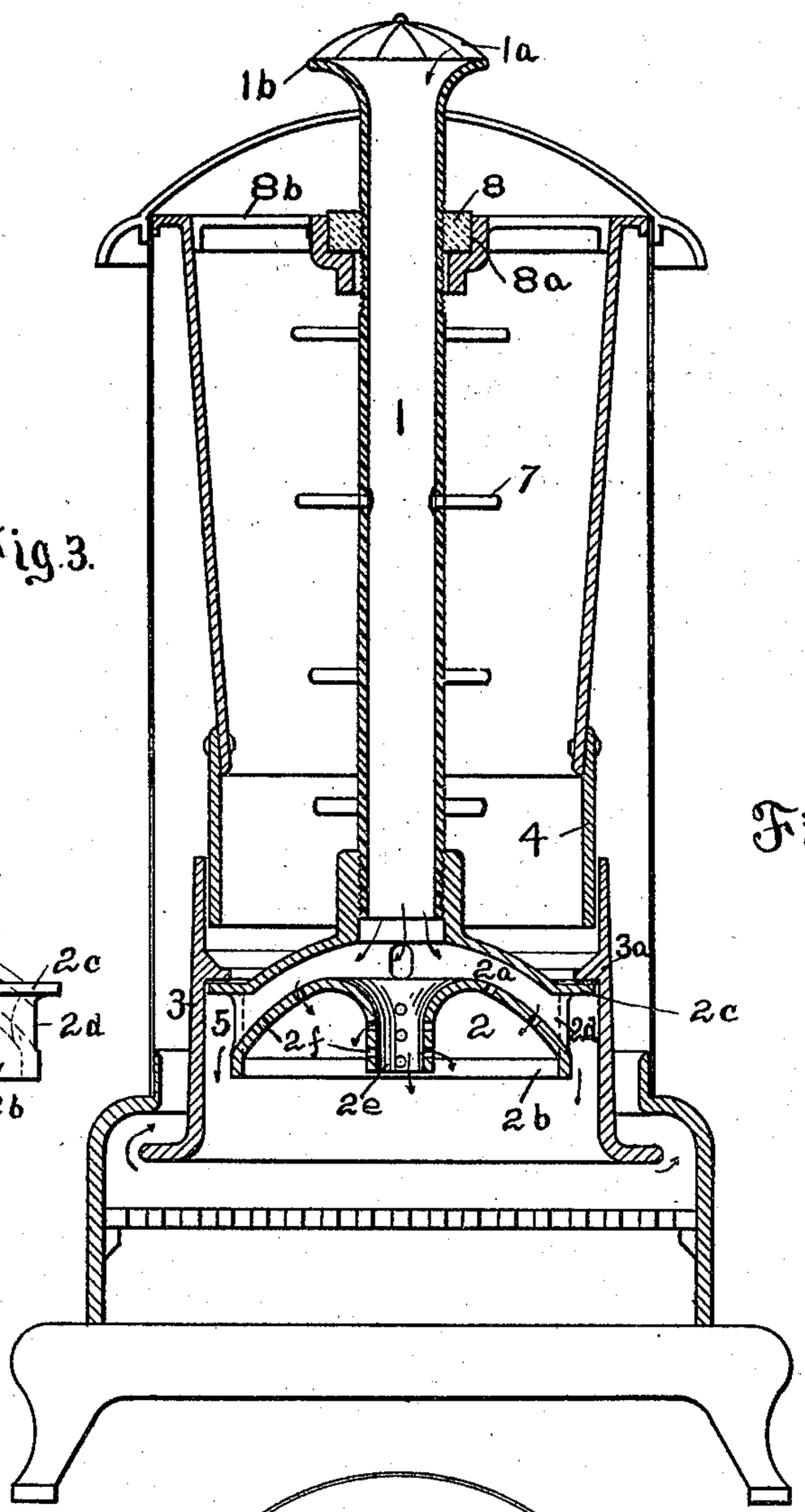

Fig. 1.

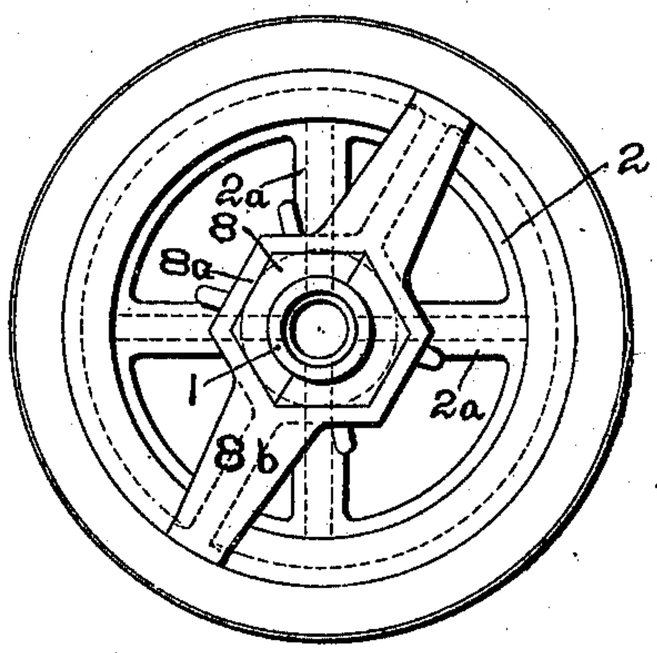

Fig. 2.

Witnesses
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UNITED STATES PATENT OFFICE.

BENJAMIN F. SMITH, OF BAY CITY, MICHIGAN.

MAGAZINE ATTACHMENT FOR STOVES.

SPECIFICATION forming part of Letters Patent No. 638,289, dated December 5, 1899.

Application filed March 22, 1899. Serial No. 710,088. (No model.)

To all whom it may concern:

Be it known that I, BENJAMIN F. SMITH, a citizen of the United States, residing at Bay City, in the county of Bay and State of Michigan, have invented certain new and useful Improvements in Magazine Attachments for Stoves; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to improvements in coal-burning magazine-stoves; and the improvement consists in certain constructions and arrangements of the parts of the stove by which I accomplish the objects of my invention, which are, first, to provide a magazine attachment that can readily be adapted to the existing forms of magazine-stoves and will comprise means for increasing or decreasing the depth of the fire-bed at will and adapting said means for producing a downdraft through the center of the coal-magazine and distributing the air necessary for combustion over the top of the fire-bed, and, second, to provide means for easily agitating the coal in the magazine and loosening the coke formed above the fire-bed by operating the downdraft-tube from outside the stove.

My invention is illustrated in the accompanying drawings, in which—

Figure 1 is a sectional elevation of a magazine-stove embodying my improvements. Fig. 2 is a plan view of the stove-shell with its top removed. Fig. 3 is an elevation of the central draft-tube and distributer.

Throughout the several views similar figures of reference designate similar parts and devices.

As is clearly shown in the drawings, the improvement consists in providing for a magazine-stove a central hollow draft-pipe 1, provided at the top with suitable draft-regulating slides 1^a and having at its lower end a draft-distributer 2, which consists of a hollow casting communicating with the pipe 1. From a central hub a plurality of hollow arms or pipes 2^a radiate, terminating in a circular rim 2^b. Projecting outwardly beyond the rim 2^b at its upper part and forming an integral part therewith is an annular ring or flange 2^c. On this ring and supported therefrom by projections 3^a is a cylindrical fire-box shell 3, the upper part of which telescopes with the main fire-box shell 4 and is vertically movable in relation thereto.

Openings 2^d in the rim 2^b permit the discharge of air drawn down through the pipe 1 through the hub and arms 2^a into the space 5 between the rim and the movable fire-box shell 3.

A short tube 2^e projects downwardly from the hub or center of the radiating arms and communicates with the pipe 1.

Around the circumference of the tube 2^e and the arms 2^a are series of perforations 2^f for distributing air laterally over the coal bed which rests on the grate 6.

Projections 7 are preferably provided on the exterior of the pipe 1 for agitating the coal in the magazine. They may be short rods secured to pipe 1 by riveting or otherwise.

The pipe 1 is threaded on its outside near the top and a nut 8 is screwed on. This nut rests in a recess 8^a, formed in a bar 8^b, which extends across the diameter of the stove at the top of the shell, and thus supports the pipe 1.

The pipe 1 can be raised or lowered by screwing it through the nut 8, thus raising or lowering the radial arms 2^a and the fire-box shell 3. A flared rim 1^b permits the pipe to be turned by hand.

The operation of my invention is as follows: Coal introduced into the magazine around the pipe 1 passes down between the radial arms 2^a, where it is coked by the downdraft through the pipe 1 and the heat of the coal bed on the grate. The volatile gases are drawn over the coal bed by the action of the chimney-draft and are consumed. The coke shrinks in volume as the gases are liberated and drops to the grate, where it burns, the gases of combustion passing under the lower edge of the fire-box shell 3 to the space around the magazine and thence to the chimney. By rotating the pipe 1 in alternate directions the projections 7 settle the coal in the magazine, and the motion of the arms 2^a causes any accumulated coke to drop to the grate. By raising or lowering the arms 2^a and fire-box shell 3, as above described, the depth of the fire and the rate of combustion can be closely regulated at will.

The vertical adjustment provided for in

the construction of the fire-box shell 3 increases the area for the escape of gases in proportion as the thickness of the fire-bed is increased.

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

1. In a magazine-stove the combination with the stove-body, a magazine and grate; of a hollow downdraft-tube extending through the magazine, having hollow, radial, air-distributing arms at its lower end, and adjustably supported near its upper end by a nut; of a fire-box shell consisting of upper and lower telescoped sections, one of said sections being vertically adjustable with and supported by said air-distributing arms; and laterally-projecting rods secured to said downdraft-tube, substantially as described.

2. In a stove, the combination with a magazine, of a fire-box vertically adjustable relatively thereto; hollow radial air-distributing arms extending across the fire-box and adapted to move vertically with the fire-box; a tube extending through the magazine communicating with said arms, and means substantially as described for supporting the tube near its top and permitting its vertical and rotary adjustment.

3. In a fire-box for magazine-stoves, an air-distributing device having an air-inlet and consisting of hollow arms extending across the fire-box above the fire-bed, said arms having series of perforations throughout their length, and terminating in a rim of less diameter than the fire-box; and a central downwardly-projecting tube communicating with the hollow arms; said air-distributing device having means for vertical adjustment and rotary movement, substantially as and for the purpose described.

In testimony whereof I affix my signature in presence of two witnesses.

BENJAMIN F. SMITH.

Witnesses:

M. H. IRWIN,

FRED P. BEACH.