

No. 816,737.

PATENTED APR. 3, 1906.

A. D. RATHBONE.
GAS GRATE.

APPLICATION FILED FEB. 6, 1905.

2 SHEETS—SHEET 1.

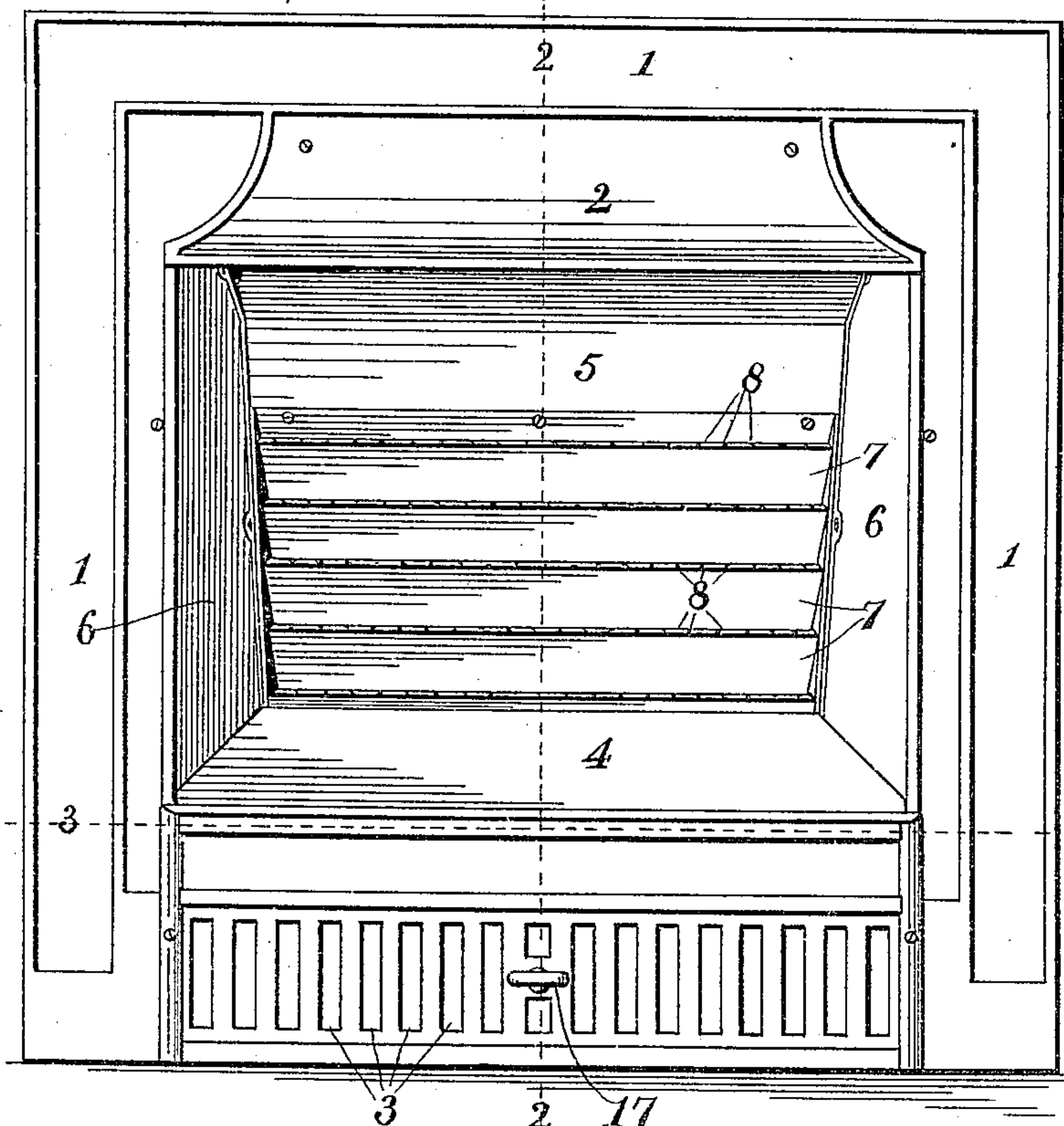


Fig. 1.

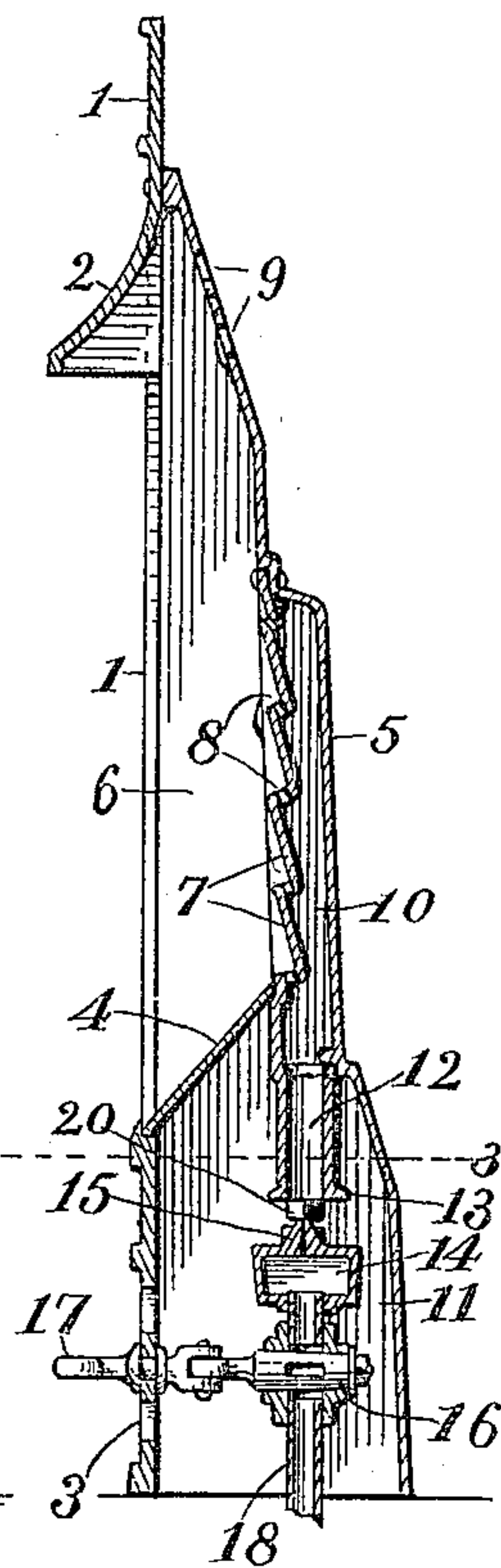


Fig. 2.

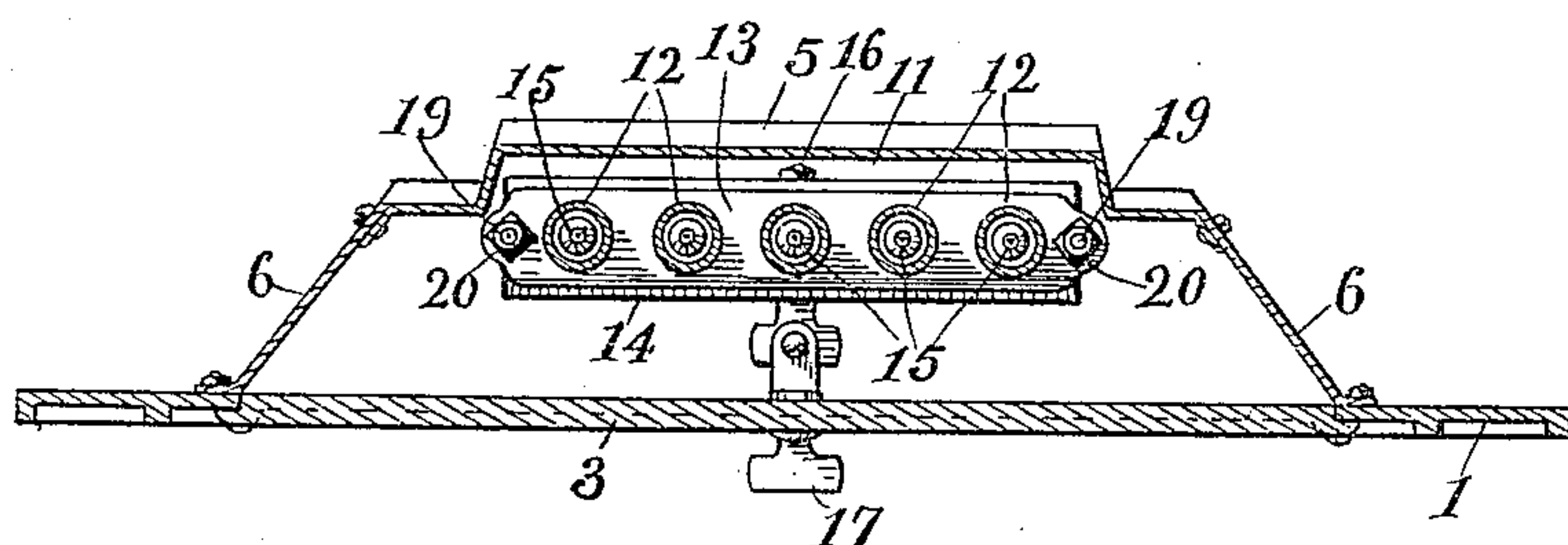


Fig. 3.

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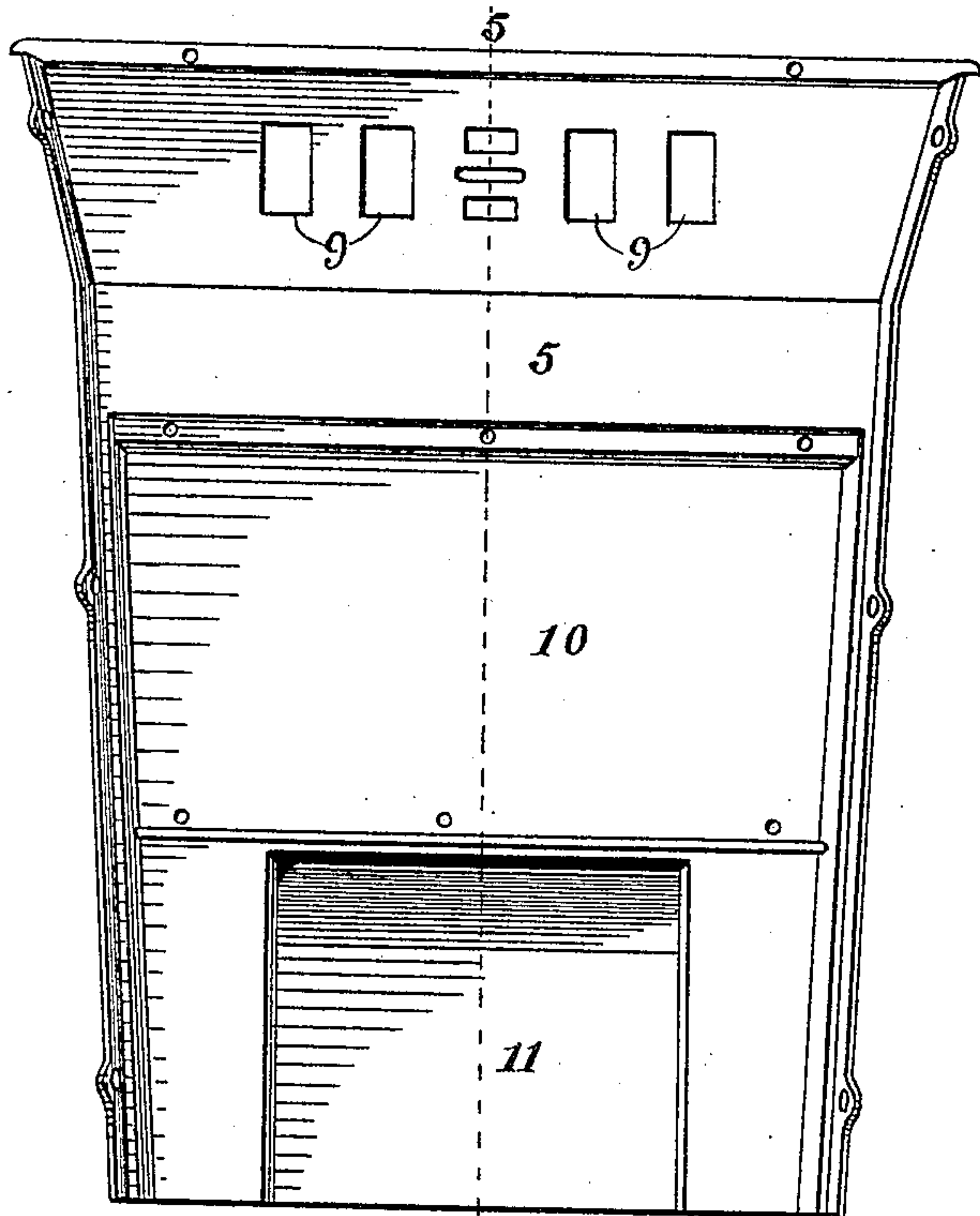


Fig. 4.

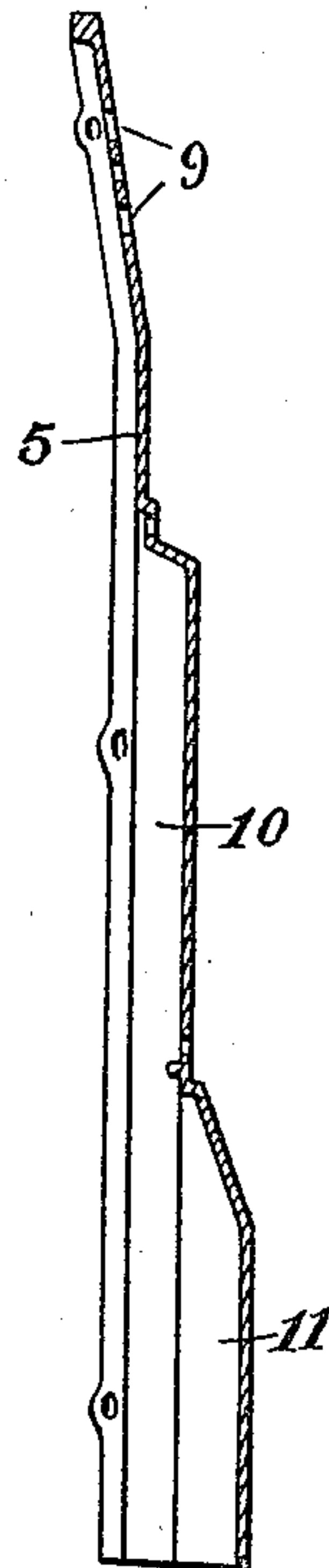


Fig. 5.

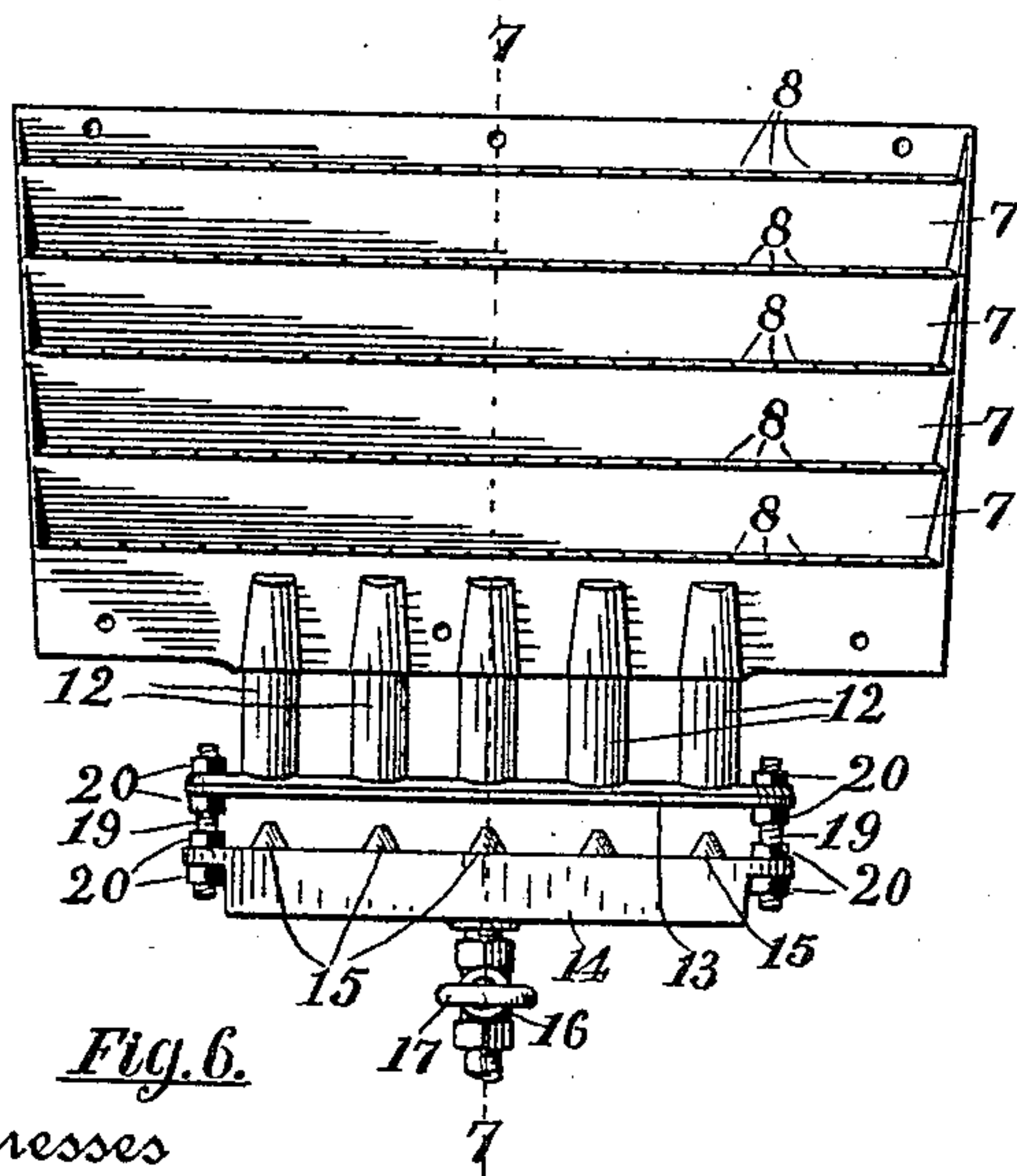


Fig. 6.

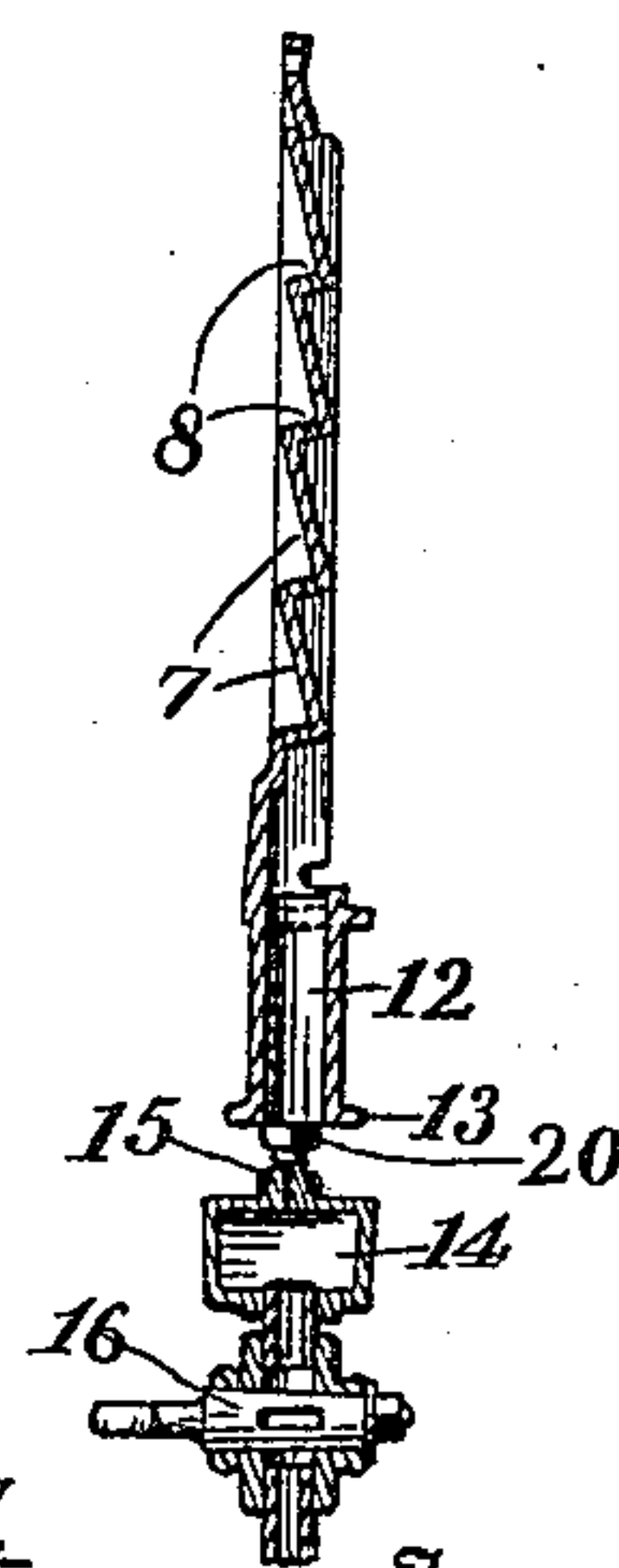


Fig. 7.

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ALFRED D. RATHBONE, OF GRAND RAPIDS, MICHIGAN.

GAS-GRATE.

No. 816,737.

Specification of Letters Patent.

Patented April 3, 1906.

Application filed February 6, 1905. Serial No. 244,305.

To all whom it may concern:

Be it known that I, ALFRED D. RATHBONE, a citizen of the United States, residing at Grand Rapids, in the county of Kent and State of Michigan, have invented certain new and useful Improvements in Gas-Grates; 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 gas-grates; and its object is to provide a simple and effective device having various new and useful features hereinafter more fully described, and particularly pointed out in the claims, reference being had to the accompanying drawings, in which—

Figure 1 is a front elevation of a device embodying my invention; Fig. 2, a vertical section of the same on the line 2 2 of Fig. 1; Fig. 3, a horizontal section of the same on the line 3 3 of Figs. 1 and 2; Fig. 4, a detail in front elevation of the back plate; Fig. 5, a vertical section of the same on the line 5 5 of Fig. 4; Fig. 6, a front elevation of the burner-plate and parts attached; Fig. 7, a vertical section of the same on the line 7 7 of Fig. 6.

Like numbers refer to like parts in all of the figures.

1 represents the casing or front of the device, having a large central opening and provided with an outwardly-projecting hood 2 above the opening to direct the products of combustion through the openings 9 in the back plate. Near the bottom this casing is provided with a series of openings 3 to admit air to the burner. In the lower part of the opening of the casing is an inclined plate 4, extending from the lower edge of the opening in the case upward and rearward to near and below the first row of jet-openings in the burner-plate.

5 is a back plate extending from above the hood 2 downward to the floor. This back plate has an inclined upper portion provided with ventilating-openings 9. A middle portion is chambered rearward, as at 10. A chamber is thus formed by the burner-plate and back plate, and the burner-plate is provided with a superposed series of inclined portions 7, connected by horizontal portions 8, which latter portions are perforated by a series of jet-openings to permit the combustible gases to escape and impinge at an upward inclination against the portions 8, to

which is attached a suitable quantity of asbestos-wool. (Not herein shown.) Extending downward from the lower edge of the burner-plate and integral therewith are mixing-tubes 12, connected at their lower ends by a horizontal plate 13. Suspended from the ends of this plate by means of screw-threaded bolts 19, having adjustable nuts 20 thereon, is a gas-distributing chamber 14, provided with a nipple 15 in line with the axis of each tube 12. This chamber is vertically adjusted by adjusting the nuts 20 on the bolts 19 to bring these nipples nearer or farther away from the openings of the tubes 12, as occasion requires, to properly regulate the proportion of gas and air entering the tubes. A stop-cock 16 is connected to the chamber 14 and provided with a suitable operating-key 17, extending through the front of the case, and to this stop-cock is attached a gas-pipe 18 to supply gas to the device. To make room for this chamber 14 and stop-cock 16, the back plate is still further recessed, as at 11, and this back plate, together with the lower part of the casing and the inclined plate 4, forms a chamber in which is inclosed the tubes 13, the chamber 14, and cock 16. Inclined plates 6 are provided, which connect the back plate and the casing and form the jambs of the device. The plate 4 is loosely supported in place and removable for convenience in adjusting the nuts 20 to raise or lower the chamber 14, as occasion requires.

It will be noted that the structure as a whole consists of few parts, easily cast, requiring but very little machining and readily assembled, and that the distributing-chamber is adjustable for different conditions of gas-pressure to properly provide the right proportion of gas and air for the burner, also that the back plate, the burner, and the mixing-tubes consist of but two castings, requiring practically no machining and quickly assembled.

Having thus fully described my invention, what I claim, and desire to secure by Letters Patent, is—

1. In a gas-grate, the combination of a back plate having an inclined upper portion, a middle portion recessed rearward, and also further recessed rearward in its lower part; and a burner-plate, attached to the back plate, and provided with a superposed series of inclined portions, connected by horizontal portions having jet-openings, and mixing-

tubes extending downward from the bottom of the burner-plate, and opposite the lower recess of the back plate.

2. In a gas-grate, the combination of a
5 back plate having an inclined upper portion provided with ventilating-openings, a recessed middle portion and a further recessed lower portion, a burner-plate attached to the
10 back plate in front of the recessed middle portion and provided with a series of inclined portions connected by horizontal portions, integral mixing-tubes extending downward
15 from the burner-plate and opposite the lower recessed portion of the back plate, a horizontal plate connecting the lower ends of the tubes, and a gas-distributing chamber adjustably supported below the tubes and provided with jet-openings opposite the tubes.

3. In a gas-grate, a back plate having a
20 forwardly and upwardly inclined upper part

a rearwardly-recessed middle portion and a further rearwardly-recessed lower portion, a burner-plate attached to the back plate opposite its middle portion, integral mixing-tubes extending downward from the burner-
25 plate and opposite the lower recessed portion of the back plate, a vertically-adjustable gas-chamber beneath the mixing-tubes, forwardly and outwardly inclined side plates attached to the sides of the back plate, a front
30 attached to the top of the back plate and to the front edges of the side plates, and an inclined plate extending from the front plate to the lower part of the burner-plate.

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

ALFRED D. RATHBONE.

Witnesses:

LUTHER V. MOULTON,
GEORGIANA CHACE.