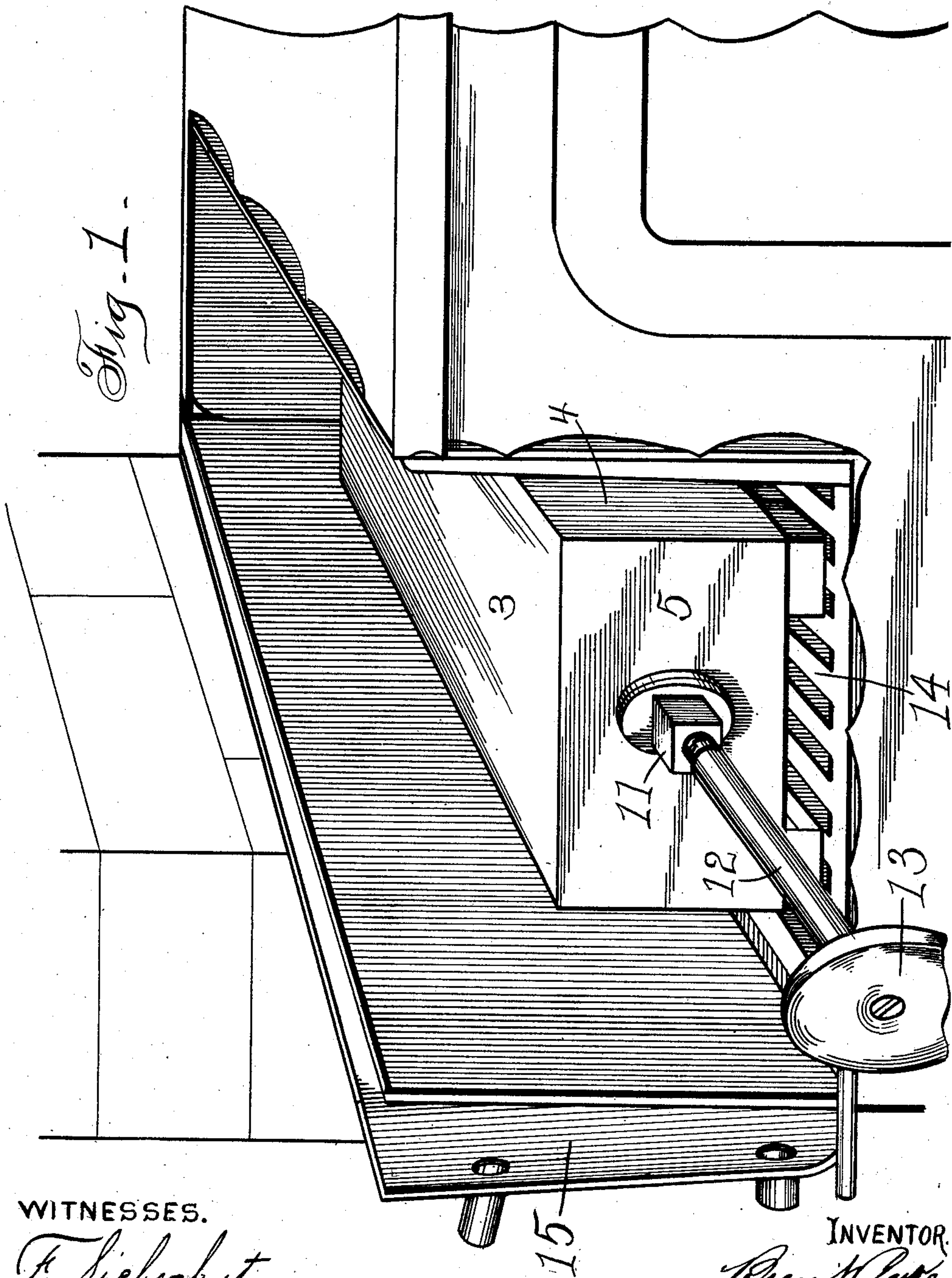


No. 859,434.

PATENTED JULY 9, 1907.

B. CLARKE.
HYDROCARBON BURNER.
APPLICATION FILED MAR. 6, 1906.

3 SHEETS—SHEET 1.



WITNESSES.

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Thomas Dorsey

INVENTOR.

B. Clarke

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3 SHEETS—SHEET 2.

Fig. 2.

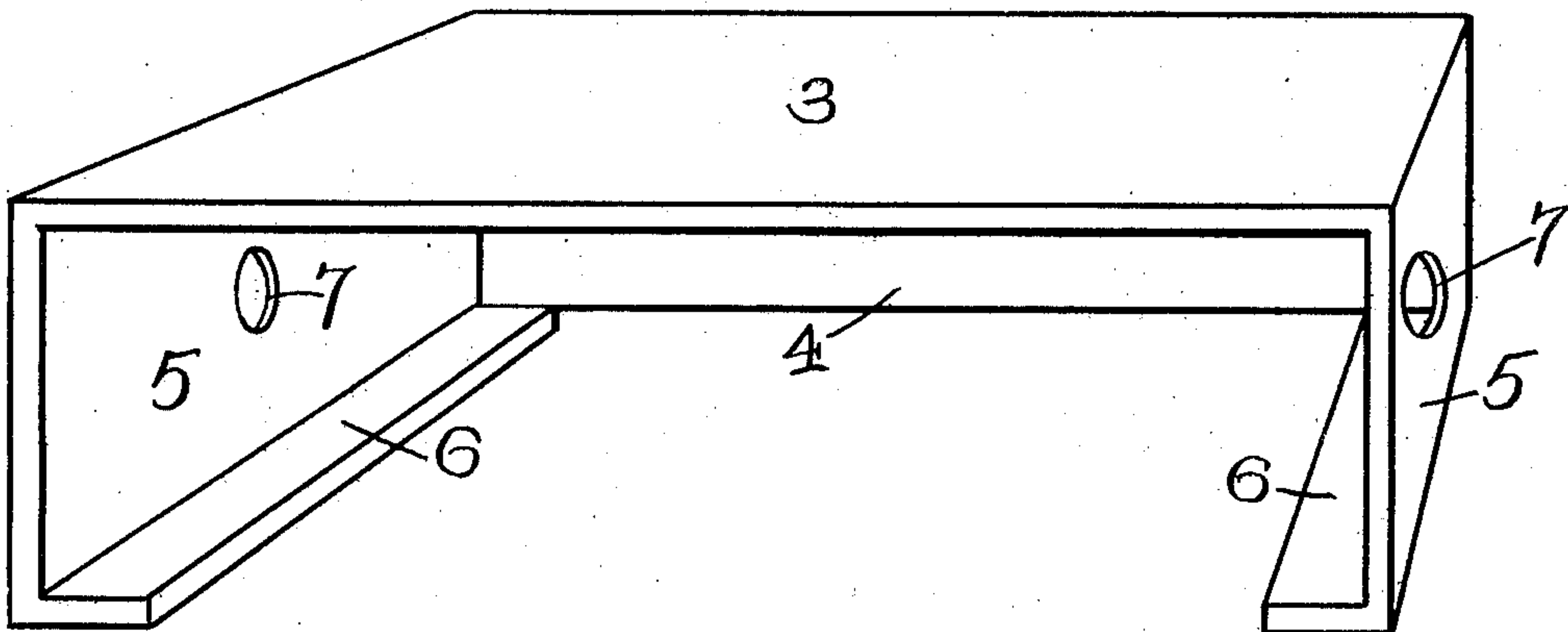


Fig. 3.

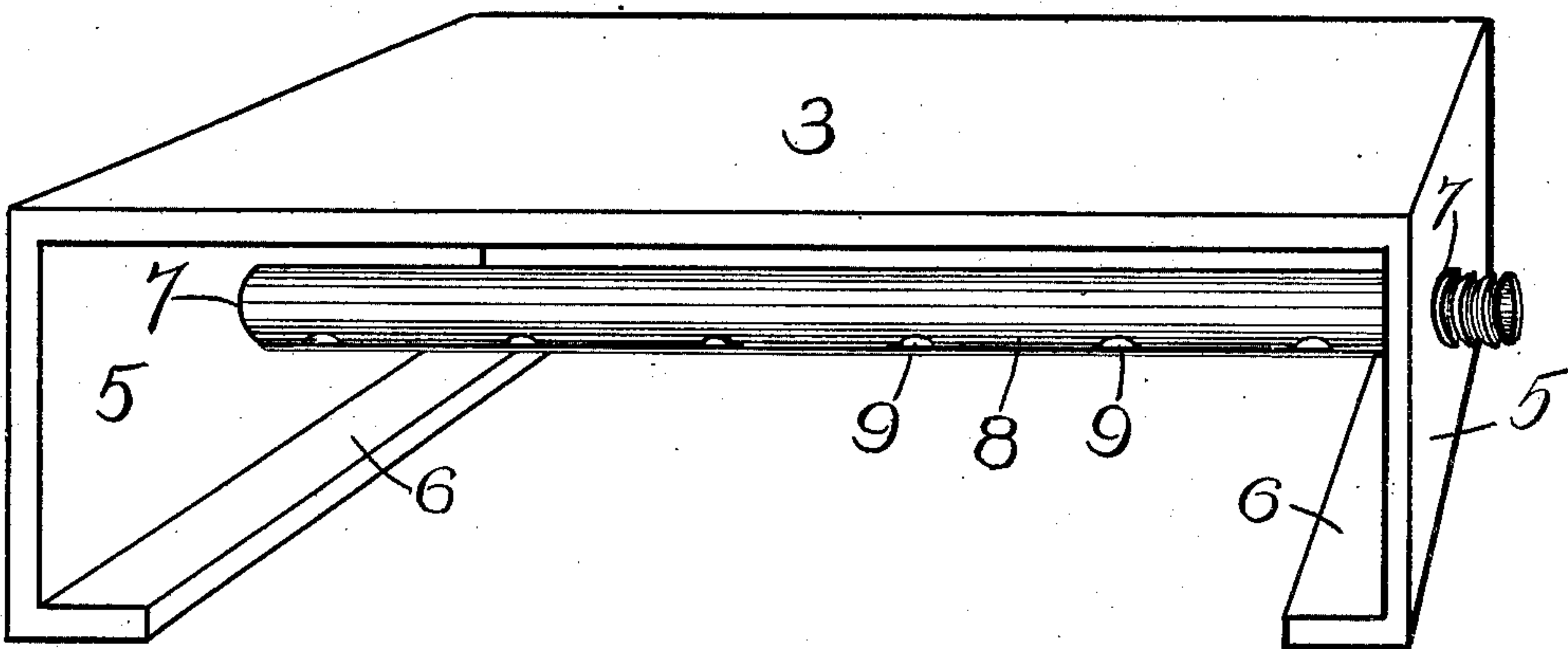
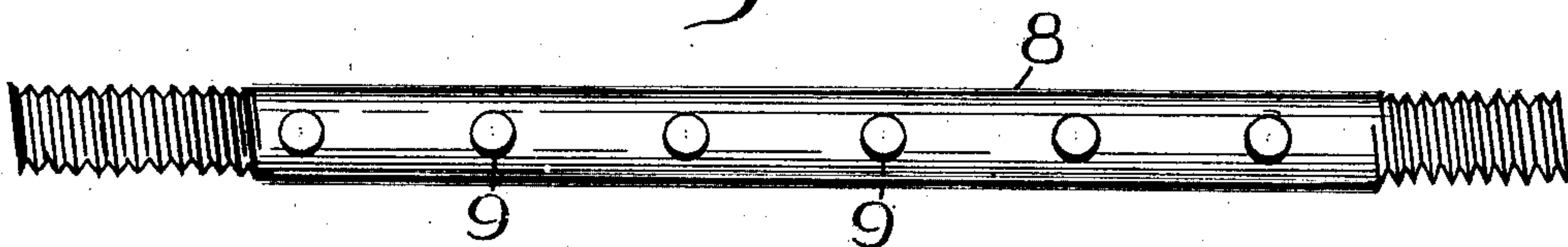


Fig. 4.



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3 SHEETS—SHEET 3.

Fig. 5

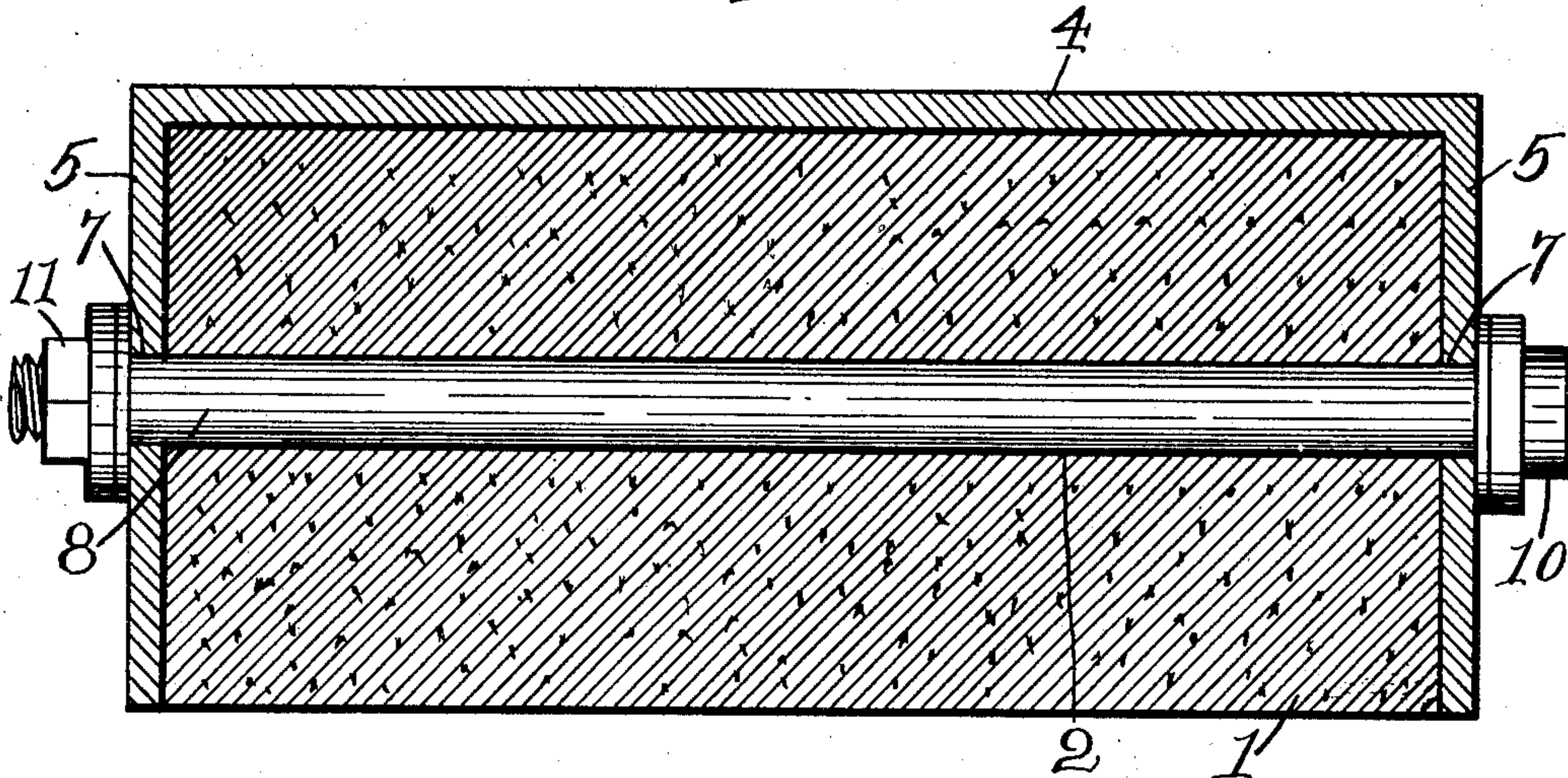


Fig. 6.

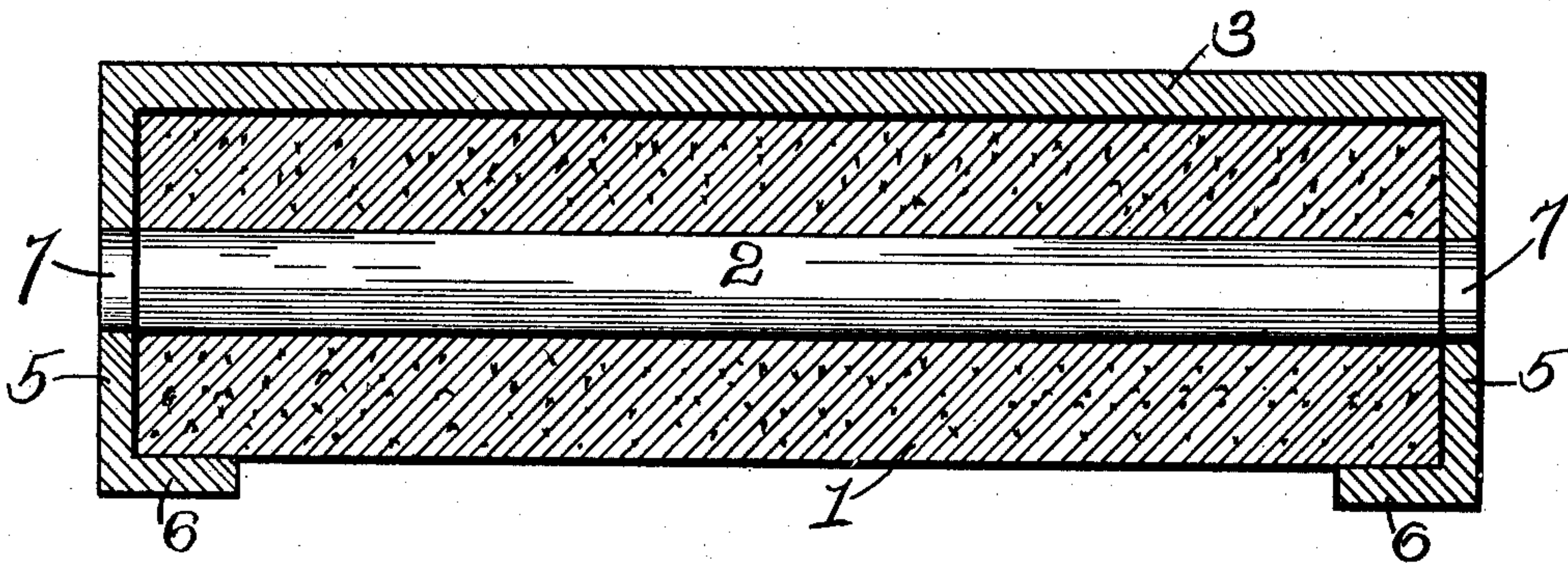
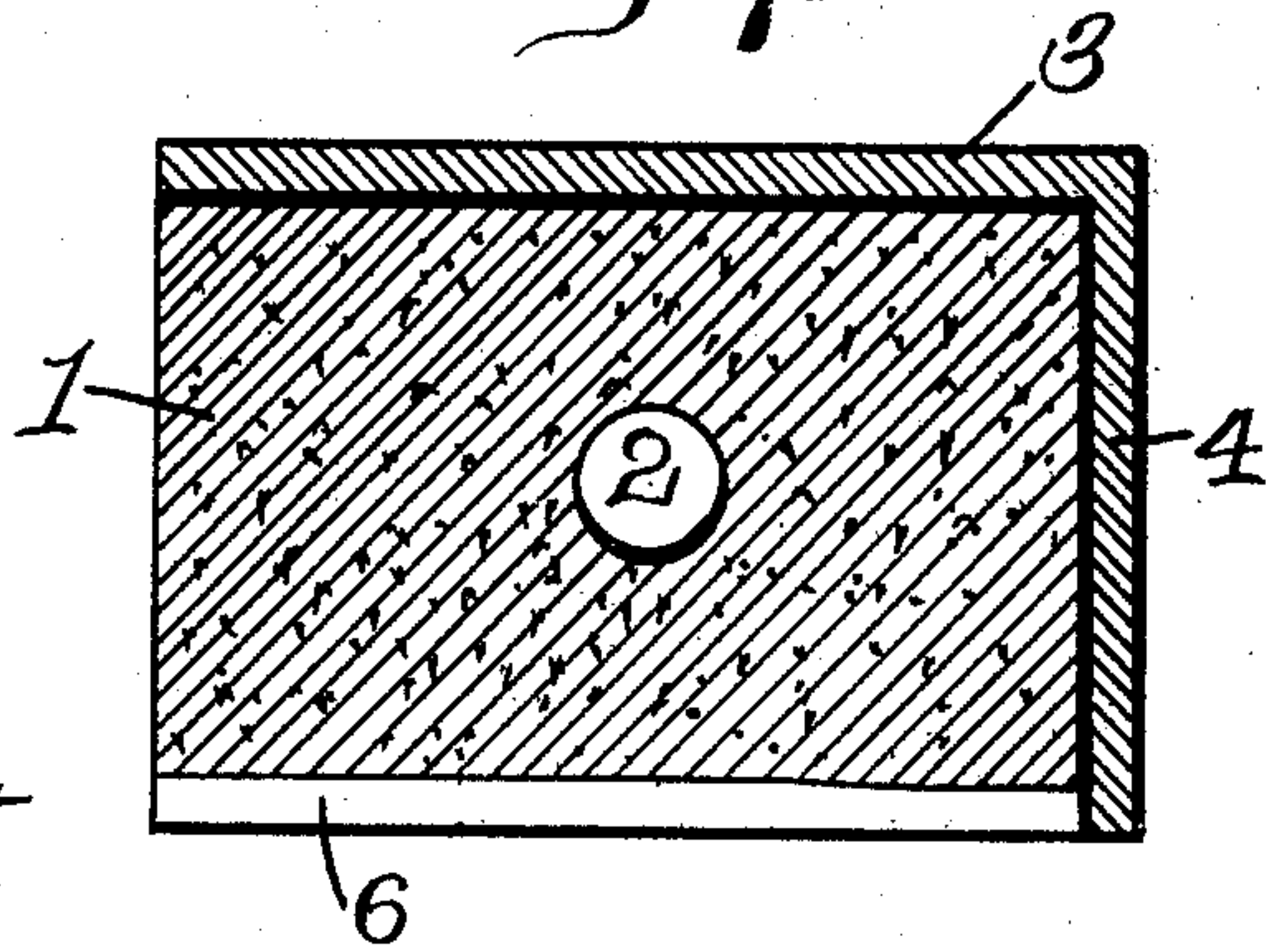


Fig. 7.



WITNESSES.

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UNITED STATES PATENT OFFICE.

BRENT CLARKE, OF WASHINGTON, DISTRICT OF COLUMBIA, ASSIGNOR, BY MESNE ASSIGNMENTS, TO INDUSTRIAL ALCOHOL HEAT AND LIGHT COMPANY, A CORPORATION OF SOUTH DAKOTA.

HYDROCARBON-BURNER.

No. 859,434.

Specification of Letters Patent.

Patented July 9, 1907.

Application filed March 6, 1906. Serial No. 304,469.

To all whom it may concern:

Be it known that I, BRENT CLARKE, a citizen of the United States, residing at Washington, in the District of Columbia, have invented new and useful Improvements in Hydrocarbon-Burners, of which the following is a specification.

This invention has relation to hydro-carbon burners and it consists in the novel construction and arrangement of its parts as hereinafter shown and described.

10 The object of the invention is to provide a burner for hydro-carbon oils of the heavier grades, and which is especially adapted for use in cooking stoves and ranges as a substitute for coal or other fuel.

15 With this object in view the invention consists primarily of a porous body (preferably a brick) which is partly incased in a metallic jacket or envelop. The said brick having at least two exposed sides through the surfaces of which the oil or gas, as the case may be, passes, and at which places the same is ignited. A
20 perforated pipe leads into the brick and extends longitudinally through the same. Through the said pipe the oil is introduced into the interior of the brick. The oil then passes out of the said pipe through the perforations thereof, and passes through the pores of the
25 brick to the uncovered surfaces thereof, where it is ignited and burned. It is of course understood that at first the oil is burned, but as the brick and its casing and attachments become heated, the oil is converted into gas in the said pipe and the gas passes through the
30 pores of the brick instead of oil and is ignited and burned. This envelops all of the parts in hot flame, which continues the process of gasification and gives off sufficient heat to heat the oven of the stove or range, and heat the water back thereof.

35 In the accompanying drawings:—Figure 1, is a perspective view of a section of a stove with parts broken away showing the hydro-carbon burner in place in the fire box. Fig. 2, is a perspective view of the metallic casing for the brick. Fig. 3, is a perspective view of the metallic casing for the brick, showing the oil inlet
40 pipe in position therein. Fig. 4, is a view of the under side of the perforated oil inlet pipe. Fig. 5, is a horizontal sectional view of the hydro-carbon burner. Fig. 6, is a vertical sectional view of the hydro-carbon
45 burner with the oil inlet pipe removed. Fig. 7, is a transverse sectional view of the hydro-carbon burner with the oil inlet pipe removed.

50 The hydro-carbon burner consists of a foraminous body such as a porous brick 1, which is provided with a bore 2, extending longitudinally through the same. A casing for holding the said brick is provided and consists of the top 3, the side 4, and the ends 5, 5. The said ends 5, 5, are provided at their lower edges with

the inwardly extending flanges 6, 6. The said ends 5, 5, are also perforated as at 7, and through the said
55 perforations the ends of the oil inlet pipe 8, pass. The said oil inlet pipe 8, also passes through the perforation 2, of the brick 1, and is provided with the perforations 9, 9. The cap 10, is screwed upon the end of the said oil inlet pipe 8, and closes the same. The said
60 cap, however, is upon the outside of the casing end 5. The tap 11, is screwed upon the other end of the said oil inlet pipe 8, and is also located upon the outside of the casing end 5. Suitable washers for both the cap and tap may be provided if necessary. The brick 1,
65 fits within the casing, and is in contact with the top 3, side 4, ends 5, 5, thereof, and the flanges 6, 6, pass under the lower surface of the said brick for a short distance, as illustrated in Fig. 10, of the drawing.

The parts are assembled by sliding the brick in between the top 3 and flanges 6, after which the pipe 8 is
70 passed through perforations 7 and bore 2, thus locking the brick in position. The cap 10 and tap 11 are then screwed up until they bind against the exposed faces of ends 7, thereby preventing any longitudinal movement of pipe 8 with relation to the brick and its casing.
75

The oil pipe 12 (see Fig. 1), connects with the oil inlet pipe 8, and is provided with the needle valve 13. The brick and its casing is located in the fire box 14, of the stove or range, and the exposed edge of the brick
80 is preferably placed opposite the water back 15, of the said stove or range.

The hydro-carbon burner operates as follows:—The said burner being in the position as above indicated, the valve 13, is opened and oil passes through the pipe
85 12, into the pipe 8. The said oil then passes out of the said pipe 8, through the perforations 9, 9, thereof, and percolates through the pores of the brick 1, until it comes to the surfaces thereof, not covered by the top, side and ends of the casing. At these surfaces the said
90 oil is ignited by any suitable means. The burning oil heats the brick and its metallic casing to such a degree that the oil as it enters the pipe 8, is gasified and the resultant gas follows the course above described for the oil. As the said gas burns it envelops
95 the entire burner in a sheet of flame which produces sufficient heat to heat the various parts of the stove or range. An especial advantage of this invention is that the oil or gas is ignited at or near the under surface of the brick 1, and consequently all of the parts of the
100 burner are in the path of the rising heat from the flame.

Having described my invention what I claim as new and desire to secure by Letters Patent is:—

1. A hydrocarbon burner comprising a metal casing, a foraminous body slidably mounted in said casing and substantially filling the same, said casing being open on two
105

sides to expose two faces of said body, the exposed faces being at right angles to each other, and a hydrocarbon pipe passed through said casing and foraminous body and securing the latter in position in said casing.

- 5 2. A hydrocarbon burner comprising a metal casing having two open sides, a foraminous body slidably mounted in said casing and fitting snugly therein, a hydrocarbon pipe passed through said casing and foraminous body to secure the latter in position within said casing, and means
10 for locking said pipe against longitudinal movement with relation to said casing and foraminous body.

3. A hydrocarbon burner comprising a metal casing having two open sides, a foraminous body slidably mounted in said casing and provided with a longitudinal bore,
15 the ends of said casing being provided with openings coinciding with said bore, a hydrocarbon pipe passed through said openings and bore and locking said body in said casing, and means for locking said pipe from movement.

- 20 4. A hydrocarbon burner comprising a metal casing having two open sides one of which is provided with flanges, a foraminous body slidably mounted on said flanges and fitting within said casing, and a hydrocarbon pipe passed through said casing and foraminous body and
25 securing the latter in position in said casing.

5. A hydrocarbon burner comprising a metal casing having two open sides, a foraminous body slidably mounted in said casing and filling the same, a hydrocarbon pipe passed through said casing and foraminous body to secure the latter in position in said casing, a threaded cap secured
30 to one end of said pipe, and a nut working on the other end of said pipe, said cap and nut serving to prevent longitudinal movement of said pipe.

6. A hydrocarbon burner comprising a metal casing having two open sides, one of which is provided with
35 flanges, a foraminous body slidably mounted on said flanges and filling said casing, a hydrocarbon pipe passed through said casing and foraminous body and securing the latter in position in said casing, a threaded cap secured to one end of said pipe, and a nut working on the other
40 end of said pipe, said cap and nut serving to prevent longitudinal movement of said pipe.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

BRENT CLARKE.

Witnesses:

PAUL F. GROVE,
WM. R. McCLOSKEY.