

No. 865,238.

PATENTED SEPT. 3, 1907.

W. G. CONKLE.

FIREPLACE HEATER FOR RADIATOR SYSTEMS.

APPLICATION FILED NOV. 12, 1906.

3 SHEETS—SHEET 1.

Fig. 1

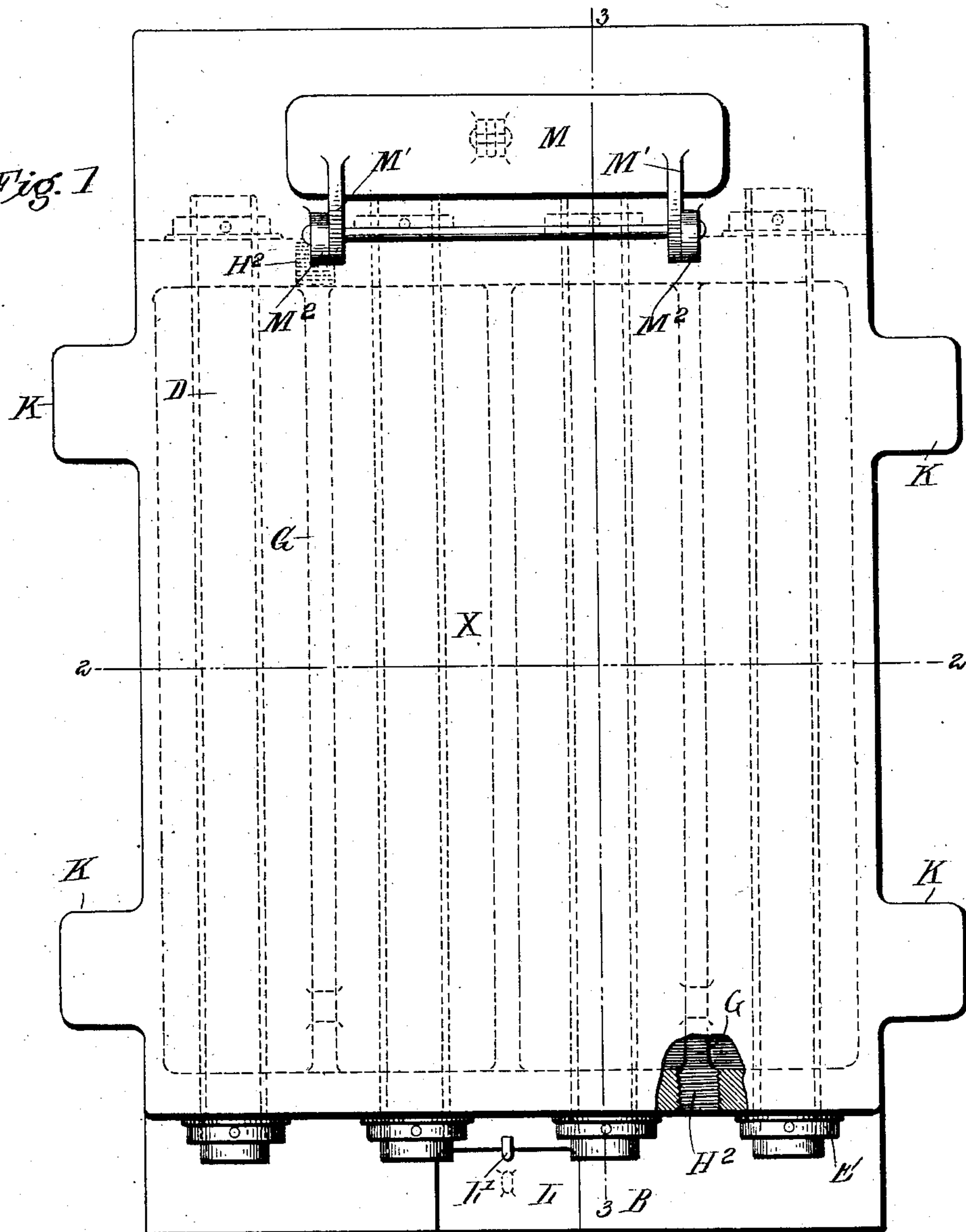
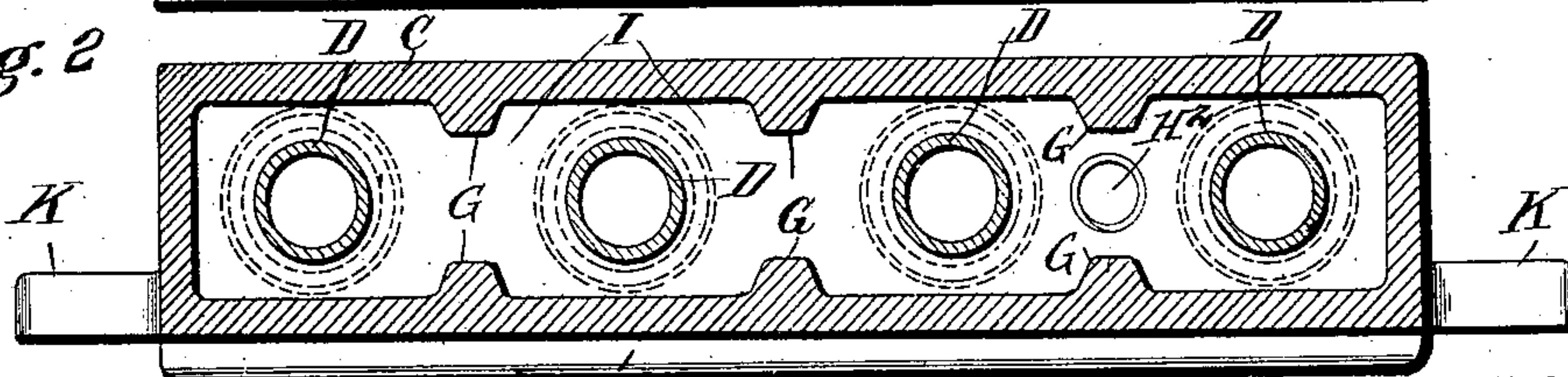


Fig. 2



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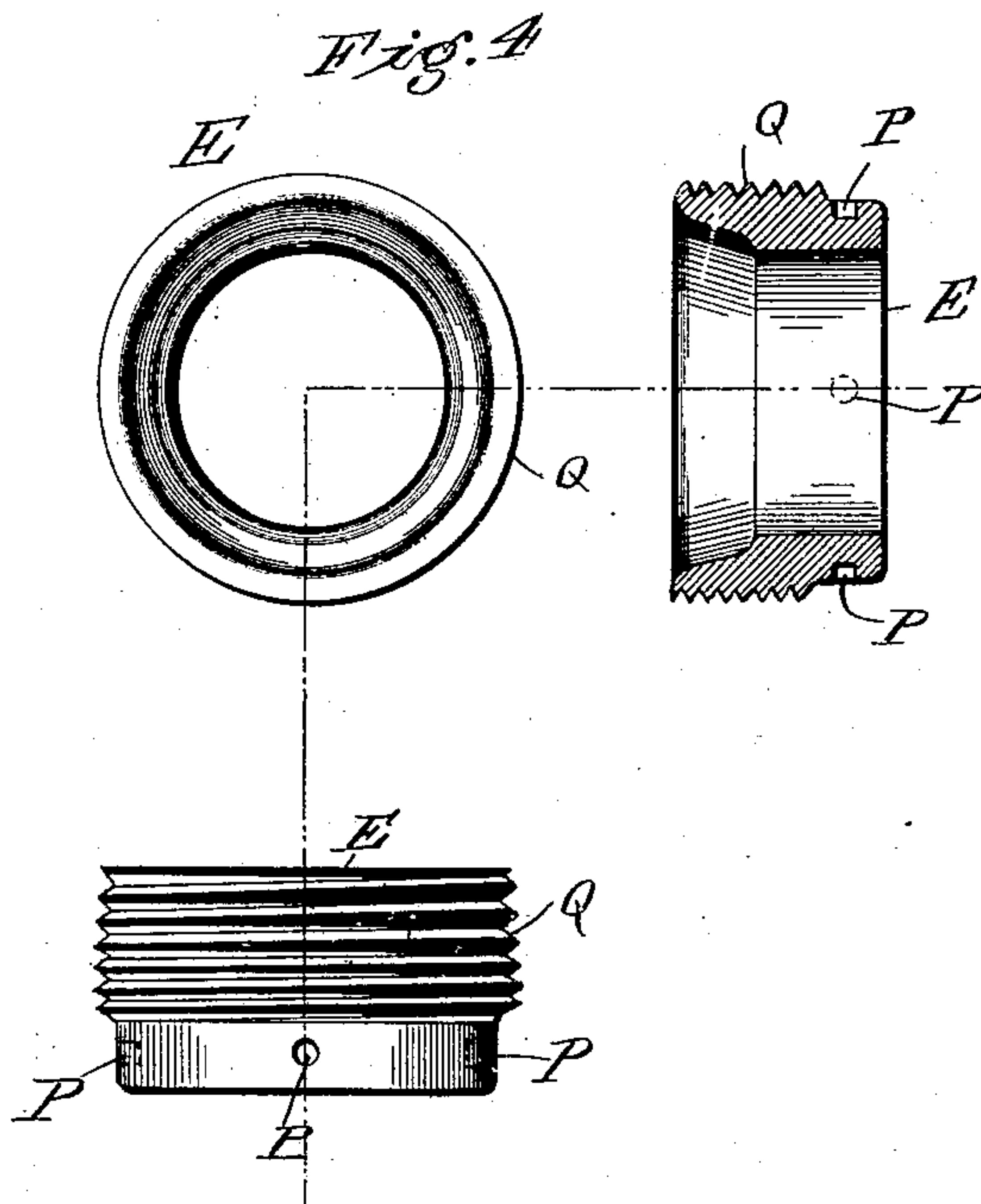
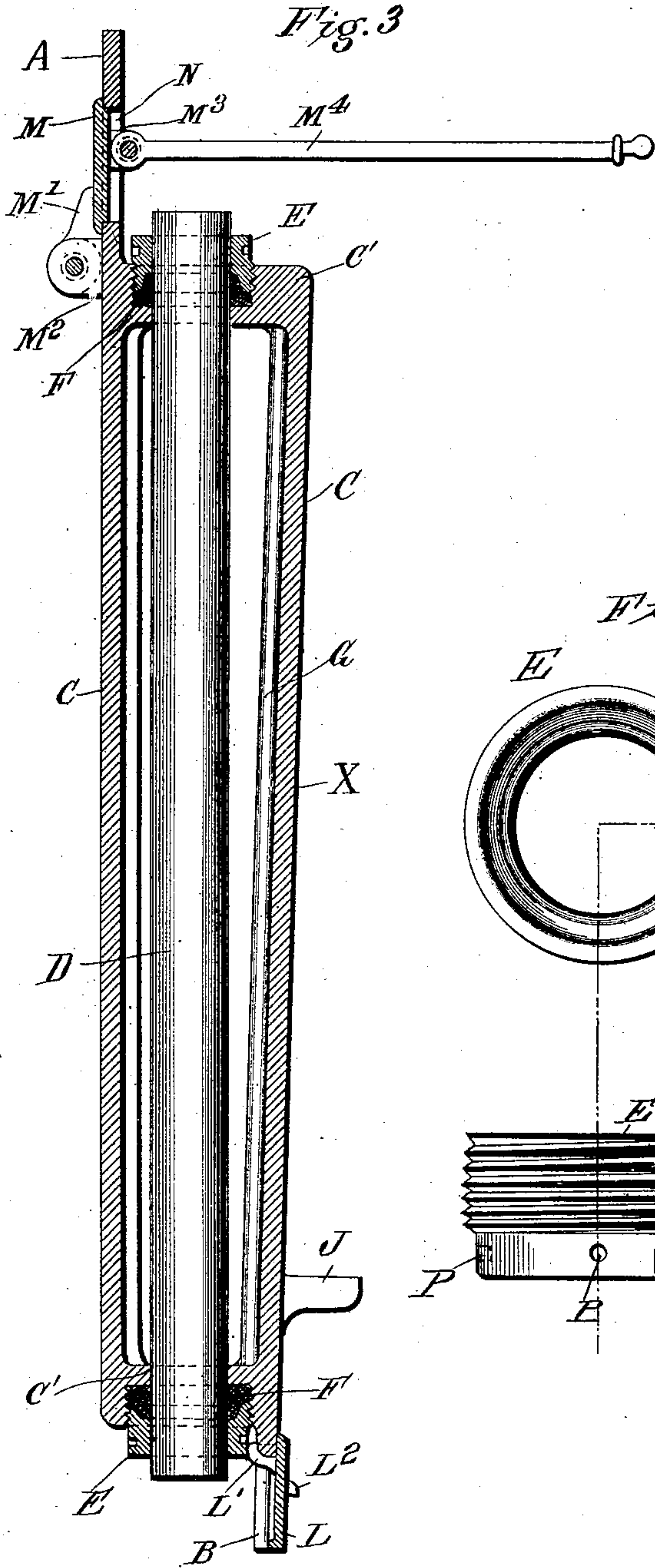
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3 SHEETS—SHEET 2.



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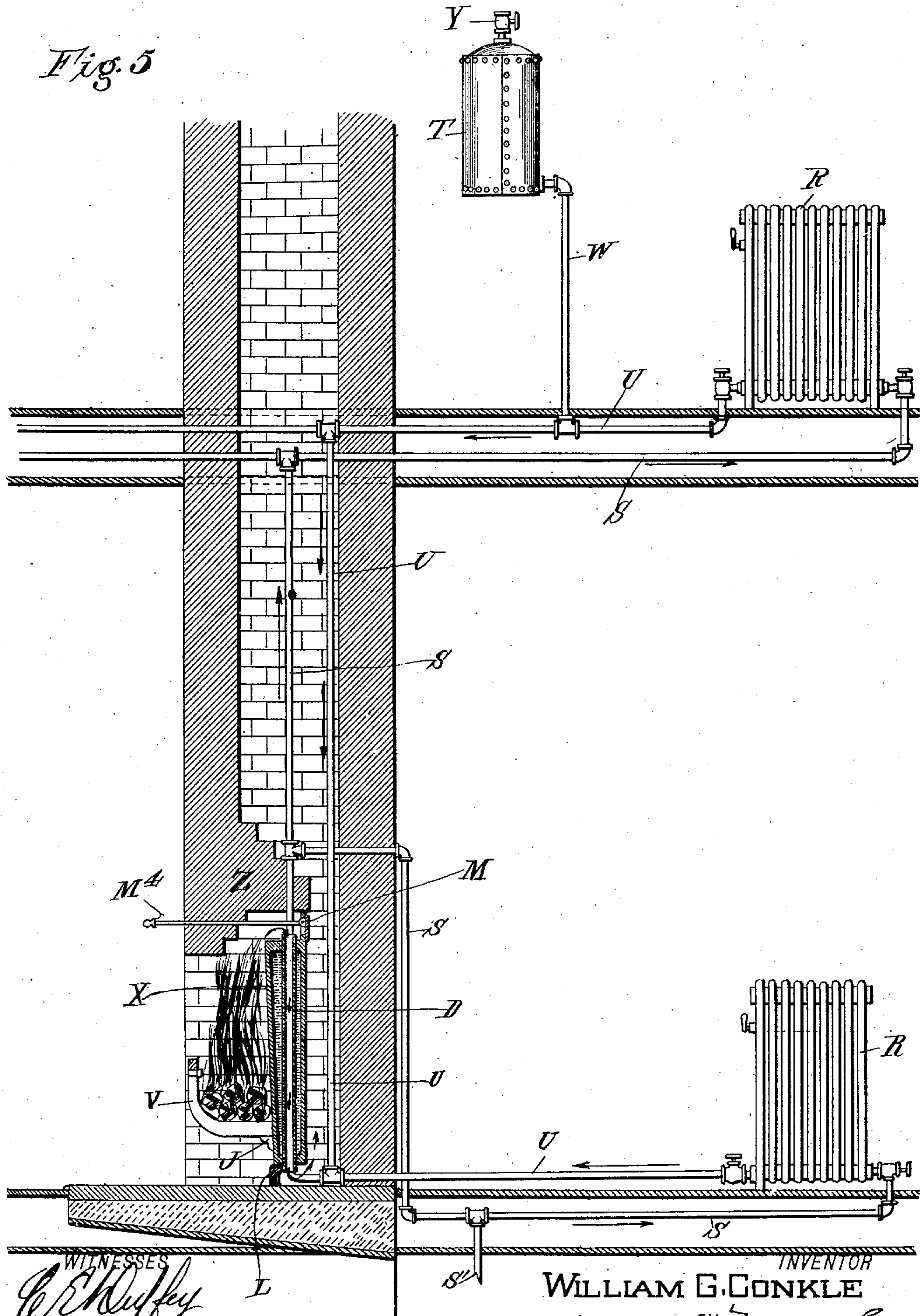
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3 SHEETS—SHEET 3.

Fig. 5



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# UNITED STATES PATENT OFFICE.

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## FIREPLACE-HEATER FOR RADIATOR SYSTEMS.

No. 865,238.

Specification of Letters Patent.

Patented Sept. 3, 1907.

Application filed November 12, 1906. Serial No. 343,011.

*To all whom it may concern:*

Be it known that I, WILLIAM G. CONKLE, a citizen of the United States, and a resident of Knoxville, in the county of Jefferson and State of Ohio, have invented a  
5 new and useful Improvement in Fireplace-Heaters for Radiator Systems, of which the following is a specification.

My invention relates to heating systems of that class in which the available heat from open fireplaces is utilized to heat a circulating body of water which, through  
10 suitable pipes, is carried through the various radiators of the house and is then returned again to the heater, so as to secure the advantages of an open fire and at the same time utilize the large amount of heat which usually goes to waste in open fireplaces.

My invention consists in the novel construction and arrangement of the fireplace water heater, which I will now proceed to describe with reference to the drawings, in which

20 Figure 1 is a rear elevation of my fireplace heater. Fig. 2 is a transverse horizontal section on line 2—2 of Fig. 1. Fig. 3 is a vertical section taken on line 3—3 of Fig. 1. Fig. 4 illustrates details of the packing nuts and Fig. 5 is a vertical section through the chimney  
25 and floors of a building, showing the relation and connections of the fireplace heater to the radiator system.

In Fig. 5 of the drawing are shown two floors of a building with the chimney and fireplace below and two radiators R coupled up with the fireplace water  
30 heater X. The hot water supply pipe S and return water pipe U are both arranged in the chimney flue. The hot water pipe S is tapped into the top of the water heater in the fireplace and is extended in lateral branches through the floors to the inlet sides of the  
35 radiators R and the return water pipe U takes the more or less cooled water from the outlet sides of radiators and returns it into the bottom of the water heater in the fireplace. An expansion tank T is connected by pipe W with the water circulation pipe U and has an over-  
40 flow outlet Y and an inlet pipe S' at the lower story is connected by a suitable valve with any water supply for the purpose of filling the water heater and radiator system with water.

The water heater in the fireplace is an upright hollow  
45 iron shell X made flat and forming the back of the fireplace and held in vertical position by lugs K K, Fig. 1, cast on the side edges of the iron back and let into the masonry of the chimney. The hollow iron back extends from the hearth at the bottom of the fireplace to  
50 the offsetting shoulder of masonry Z forming the throat of the chimney flue and this hollow back is so set as to leave a space behind it between the water back and the inner side of the flue, as seen in Fig. 5.

V is the grate which at the sides is anchored to the

chimney jambs and at the back is supported upon a  
lip or lugs J cast upon or attached to the water back.

D, D, D, D, are flues extending vertically through the heater and passing through the walls of same at the top and bottom. These flues are open at both ends and are held in position by packing nuts E at each end.  
60

The packing nuts are shown in detail in Fig. 4, in which P, P, P, P, are holes drilled or cored in the sides of nuts to hold a spanner wrench for tightening or loosening the nuts. The nut is shown threaded at Q.

F, F, Fig. 3, is asbestos or other suitable fireproof  
65 packing, held in position by the packing nut, which is intended to hold the flues in position and also to prevent leaking around flues.

In Figs. 2 and 3, G, G, G, are ribs cast with the shell of heater on the inside to prevent buckling and to  
70 strengthen the sides of the heater. These ribs not only reinforce the flat sides against warping from the direct contact of the fire, but they give an increased surface exposure to the water inside for more rapidly conveying the heat thereto. These ribs are vertical and arranged  
75 between the flue tubes, or alternating with the same.

H<sup>2</sup>, H<sup>2</sup>, in Fig. 1 are holes drilled or cored in the upper and lower ends of the shell and tapped to receive the inlet and outlet pipes S and U.

C, C, are the front and rear walls of the heater and  
80 C', C', are the top and bottom walls of the heater, which are made somewhat heavier than the side walls C, C, to permit of the securing of the flues by means of the packing nuts E, E.

A is an extension of the back of the shell of the heater  
85 at the top, to be built into the chimney in such manner as to act as a baffle for the products of combustion and aid in deflecting the same into the top of the flues D.

N is an opening in the projection A, which is fitted with a door M, which acts as a damper to regulate the  
90 draft and heat from the fire beneath. M' are lugs cast on the rear side of the door and forming part of the hinges for the same. M<sup>2</sup> are corresponding lugs on the wall of the heater. The door is fastened by means of the rod passing through the lugs as shown in Fig. 1.  
95

M<sup>3</sup> is a lug cast on the front of door, by means of which, the damper rod M<sup>4</sup>, is fastened to the door. This damper rod extends to the front of the fireplace as seen in Fig. 5.

L is a small door for a corresponding opening in an  
100 extension B of the heater shell at the bottom. This extension and door are in the plane of the outer surface of the shell.

L' is a lug on the back of the door to hold the same in position, and L<sup>2</sup> is a lug on the front of the door by  
105 means of which the door is manipulated. This door is for clean-out purposes.

In the operation of my system, in first kindling a



fire in the grate, the damper M at the top is opened making a direct draft. Then after the fire is well started the damper M is closed and the heated gases and products of combustion then are compelled to dive  
5 down through the flues D and, issuing through the open ends at the bottom, rise behind and in contact with the shell into the chimney flue where they still impart their heat to the circulation pipes. The water in the shell or water-back thus becomes thoroughly  
10 heated, first by the heat from the grate on the front or outer surface; secondly, from the heat imparted to the surrounding water from the flues D and finally from the contact of the hot gases along the back of the shell as they rise to the chimney place.

15 This fireplace water heater is of simple construction and therefore cheaply and easily made. It is also adapted to the construction of fireplaces as already built, requiring no destructive cutting of the masonry and has such an extensive heating surface as to effi-  
20 ciently heat a number of radiators. Its construction and arrangement is also such as to permit it to be readily coupled up with the circulation pipes, the upright members of which are all conveniently housed within the chimney, thus avoiding an unsightly appearance in  
25 the rooms and at the same time securing the largest absorption and utilization of heat from the escaping products of combustion.

## I claim

1. A fire place water heater, consisting of a hollow, upright, flat, shell, having front and back walls and top and bottom ends, said shell having a vertical upward extension of the back wall at the top and a vertical downward extension of the front wall at the bottom, both said extensions being cast with the shell and formed with openings, dampers for controlling said openings, and means  
30 for operating them, detachable flue tubes extending entirely through the shell and through the upper and lower ends thereof, fireproof packing arranged about the ends of the tubes and screw nuts arranged about the ends of the tubes to compress the packing and form a water tight joint. 40
2. A fire place heater, consisting of a hollow, upright, flat, shell having a front and back wall with vertical ribs on the inside and top and bottom ends, said shell having a vertical upward extension of the back wall at the top and a vertical downward extension of the front wall at the  
45 bottom, both said extensions being formed with openings, all of said parts being cast in one piece, dampers controlling said openings and means for operating them, and vertical flue tubes extending through the shell and through the top and bottom ends thereof at points alternating  
50 with the vertical interior ribs of the shell, and a fireproof packing at the ends of the tubes.

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## Witnesses:

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