

No. 725,176.

PATENTED APR. 14, 1903.

J. S. THURMAN.

OIL BURNER.

APPLICATION FILED AUG. 16, 1902.

NO MODEL.

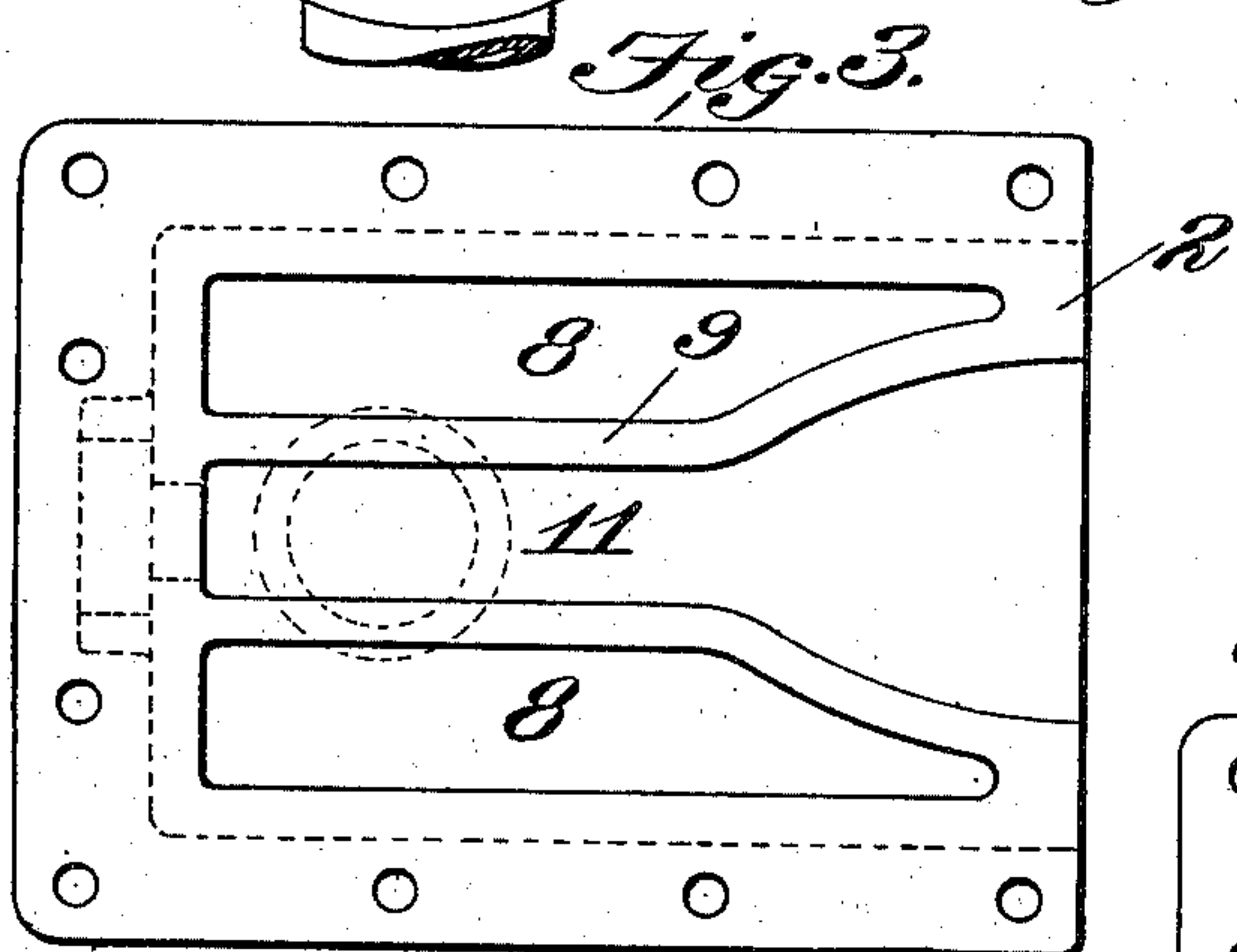
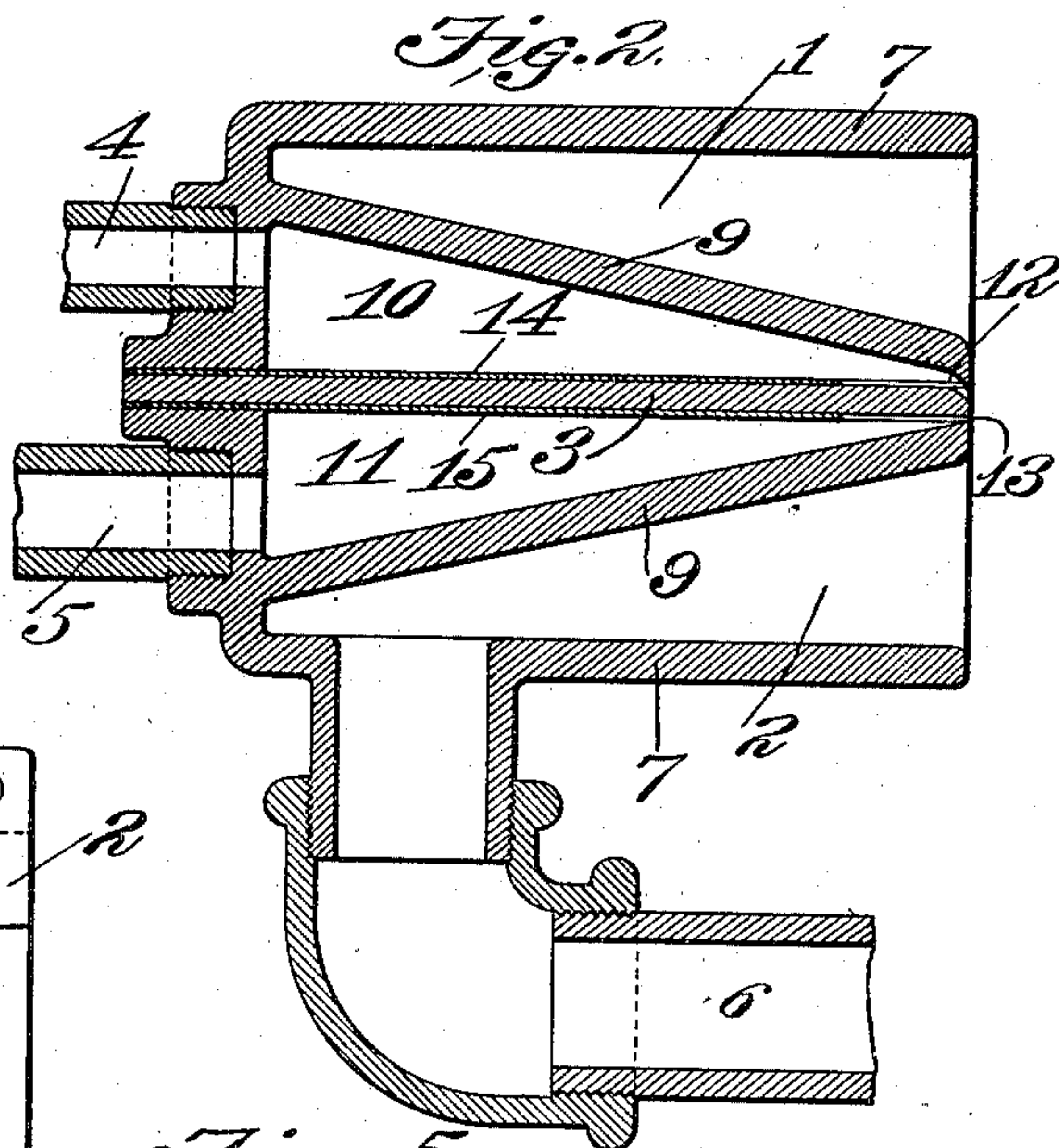
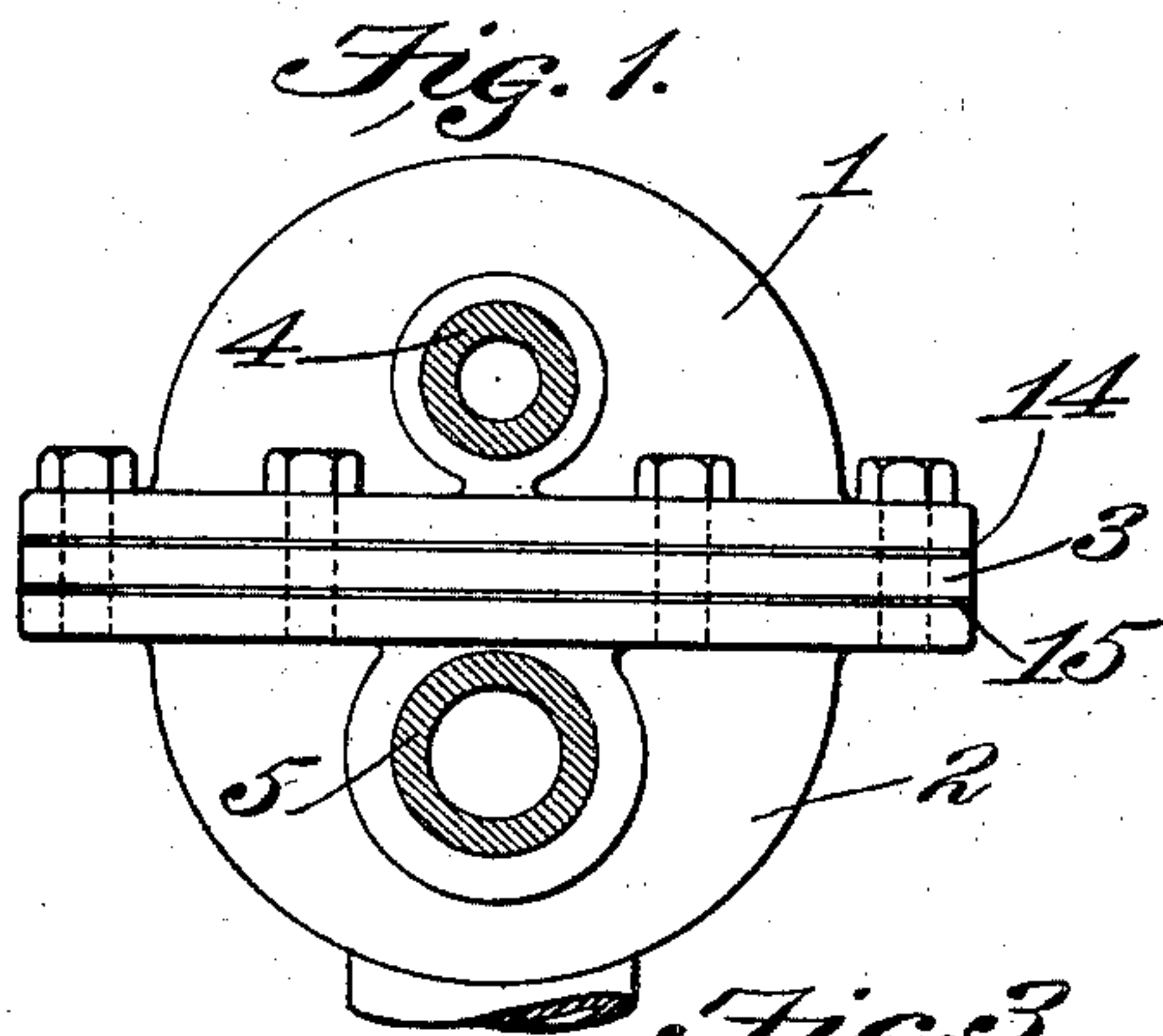


Fig. 5.

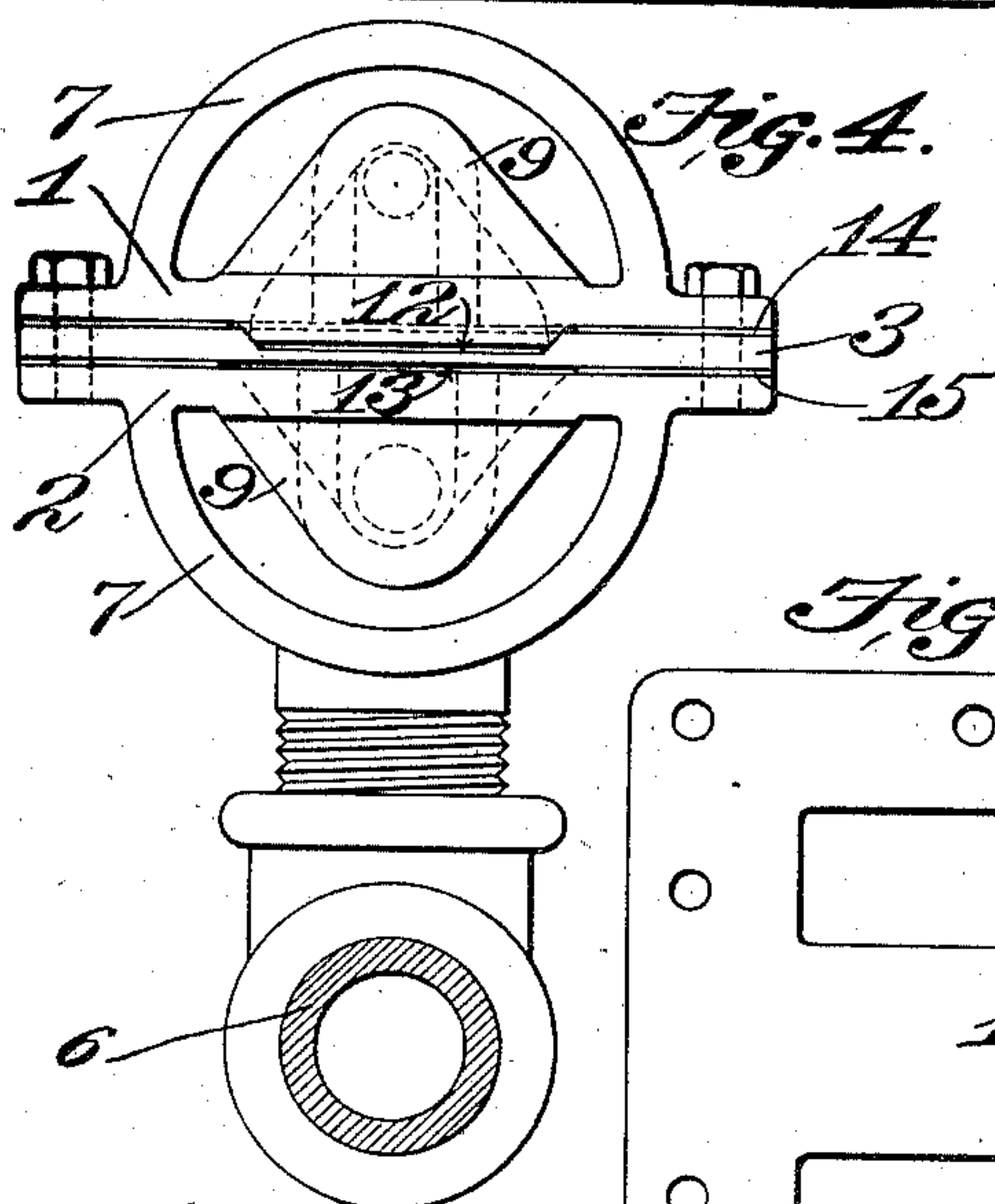
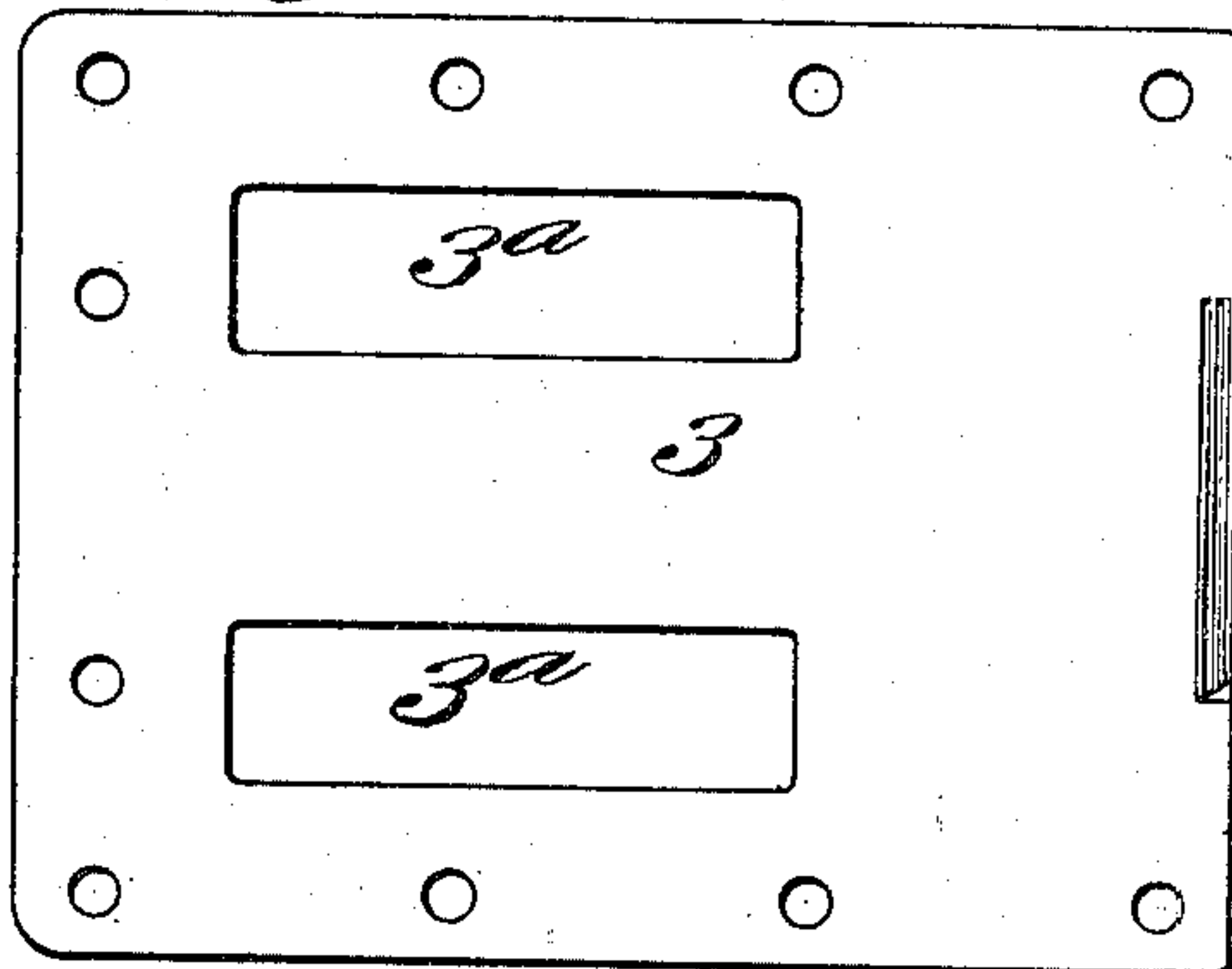
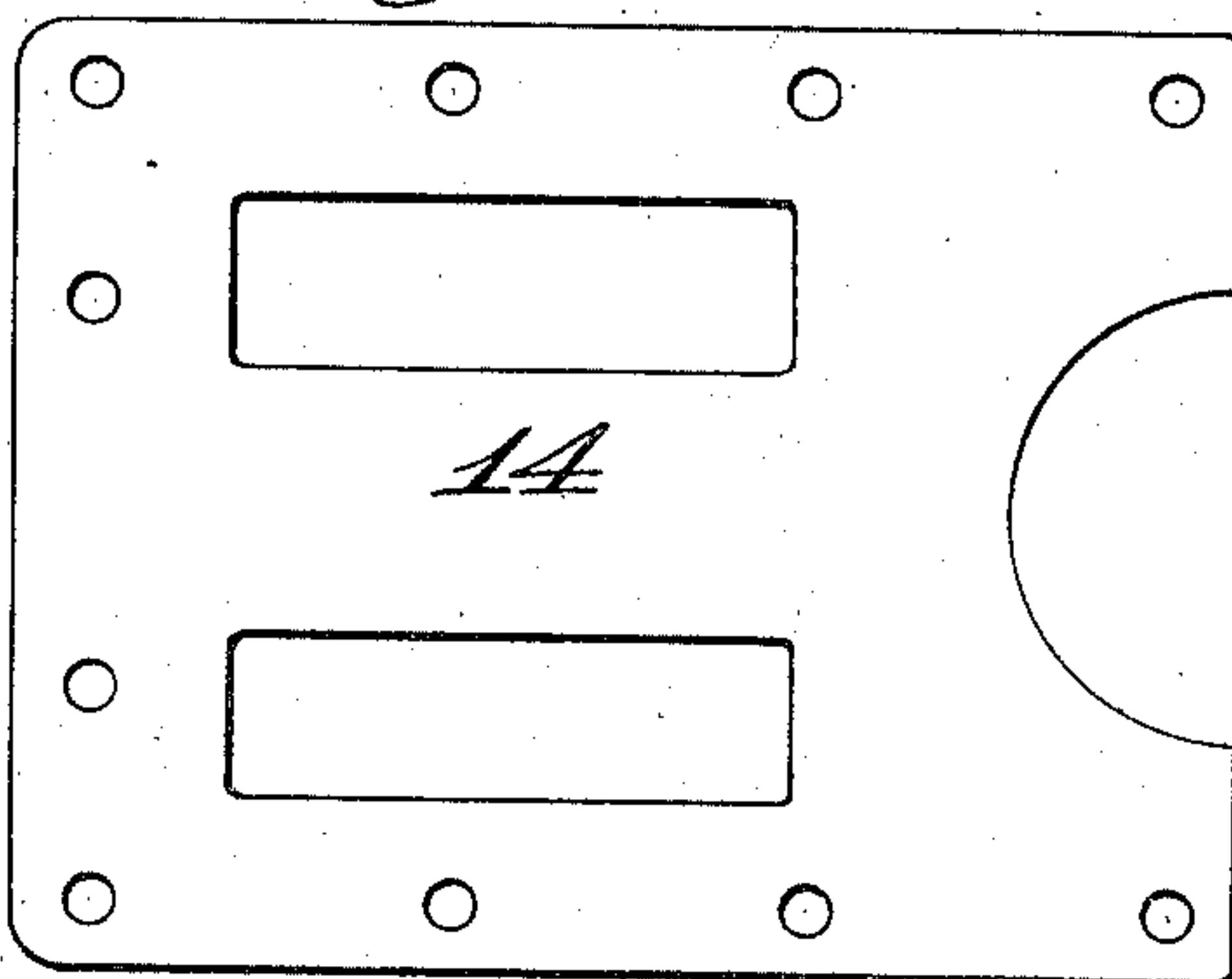


Fig. 6.



Witnesses:
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UNITED STATES PATENT OFFICE.

JOHN S. THURMAN, OF ST. LOUIS, MISSOURI.

OIL-BURNER.

SPECIFICATION forming part of Letters Patent No. 725,176, dated April 14, 1903.

Application filed August 16, 1902. Serial No. 119,945. (No model.)

To all whom it may concern:

Be it known that I, JOHN S. THURMAN, a citizen of the United States, residing at St. Louis, Missouri, have invented a certain new and useful Improvement in Oil-Burners, of which the following is a full, clear, and exact description, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a rear elevational view of my improved oil-burner. Fig. 2 is a vertical sectional view. Fig. 3 is a plan view of one of the members of my improved burner. Fig. 4 is a front elevational view. Fig. 5 is a detail view of the centrally-located partition-wall, and Fig. 6 is a detail view of one of the washers.

This invention relates to a new and useful improvement in oil-burners, the object being to construct a burner in a simple and inexpensive manner, which burner will be efficient and economical in the use of fuel and which can be readily taken apart, cleaned, and assembled.

With these objects in view my invention consists in the construction, arrangement, and combination of the several parts, all as will hereinafter be described and afterward pointed out in the claims.

In the drawings, 1 indicates one of the castings of my improved burner, which forms one-half of the casing and whose counterpart is represented by the numeral 2, the two castings when assembled with an interposed plate 3 between them forming the completed burner, into which lead pipes 4, 5, and 6, pipe 4 supplying oil or fuel to the burner, pipe 5 supplying compressed air or steam to the burner, and pipe 6 supplying heated air. These pipes have appropriate threaded connections with their respective castings.

By reference to Figs. 2 and 4 it will be seen that the two portions of my improved burner when assembled form an inclosing shell 7, substantially cylindrical in shape and open at one end. Into this cylinder heated air from some suitable source is admitted through the pipe 6, said air passing from the chamber in one casting to the chamber in the other casting through openings 8. (See Fig. 3.)

Each casting is provided with a partition-wall 9, forming chambers 10 and 11, chamber 10 receiving fuel and conducting it to discharge-opening 12, where it is discharged downwardly onto a sheet of hot air or steam issuing in the form of a thin wide blast under pressure from chamber 11 through the contracted elongated opening 13. Plate 3, before referred to, which is introduced between the castings 1 and 2, forms the bottom wall of chamber 10 and the top wall of chamber 11, said plate at its outer edge being beveled so as to direct the issuing oil downwardly, while the air or steam issuing through opening 13 is directed substantially in a horizontal line. By referring to Fig. 4 it will be observed that the opening 13 is slightly wider than the opening 12, and this is advantageous, as all the fuel from opening 12 is caught by the blast of air or steam and carried away from the burner. The plate 3 referred to is preferably cut away at 3^a opposite the openings 8, so as to permit the heated air to pass up into the casting 2 and around the chamber 10.

In order to regulate the size of the openings 12 and 13, paper washers 14 and 15 are used on each side of the plate 3, the thickness of each sheet of paper determining the width of the opening. These paper washers are cut away opposite the openings 3^a and 8 and also at the front end of the machine to form the blast-openings.

From the above it will be seen that the burner can be very easily and cheaply made, as the two castings forming the same are finished only on their contiguous faces to make a close joint with the paper washers. The plate 3 can be made of rolled metal and stamped to the proper shape. Securing-bolts are introduced around the marginal flanges to clamp the two castings together with the plate 3 and its paper washers between them.

While I have mentioned paper as the material of which the washers are composed, it is obvious that sheet metal of different gages can be used, according to the width of the nozzle-openings desired. In fact, paper is referred to on account of its cheapness and ease of renewal.

I am aware that many minor changes in the construction, arrangement, and combination of the several parts of my device can be

made and substituted for those herein shown and described without in the least departing from the nature and principle of my invention.

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

1. In an oil-burner, the combination with an oil-chamber having a discharge-opening 10 for directing the fuel downwardly, a chamber for containing steam and having a discharge-opening for directing said steam substantially in a horizontal direction under the fuel-opening, and an air-chamber around said oil-chamber and said steam-chamber, the said 15 parts being formed in integral sections adapted to be secured together to form the complete burner; substantially as described.

2. In an oil-burner, the combination with 20 an oil-chamber having a discharge-opening for directing the fuel downwardly, a chamber for containing steam and having a discharge-opening for directing said steam substantially in a horizontal direction under the fuel- 25 opening, and an air-chamber around said oil-chamber and said steam-chamber and having an uncontracted mouth, the said parts being formed in integral sections adapted to be secured together to form the complete burner; 30 substantially as described.

3. In an oil-burner, the combination with two like castings having marginal flanges, said castings having walls 7 and 9 which form an open-ended cylinder with transversely-dis- 35 posed nozzle-walls across its open end, a plate interposed between said castings, means for spacing the castings from the plate to form nozzle-openings at the open end of the cylinder, and means for clamping said castings 40 with the interposed plate together; substantially as described.

4. In an oil-burner, the combination with castings 1 and 2, forming a wide open-mouthed air-chamber and inclosed burner of a plate 3 45 interposed between said castings, pipes 4, 5 and 6 connected to said castings, U-shaped washers on each side of plate 3 for determining the width of the nozzle-openings, and means for clamping said castings together; substan- 50 tially as described.

5. In an oil-burner, the combination with castings having walls 7 and 9, a plate 3 interposed between said castings and forming chambers 10 and 11, which chambers have discharge-openings 12 and 13, the latter being 55 the longer and sending its blast in substantially a horizontal direction, and the former sending its blast downwardly so as to be intersected by the blast from opening 13, U-shaped washers on each side of plate 3 for 60 determining the width of said nozzle-openings, means for securing said castings together, and pipes leading to the several chambers in the castings; substantially as described.

6. In an oil-burner, the combination with 65 two castings, of a plate clamped between them, said plate having a beveled face at one side, a lip on one of the castings cooperating with said beveled face to form a nozzle-open- 70 ing, and washers for forming an adjustable nozzle-opening between the other casting and said plate; substantially as described.

7. In an oil-burner, the combination with two castings, of a plate clamped between them, said plate having a beveled face at one 75 side, a lip on one of the castings cooperating with said beveled face to form a nozzle-opening which directs a blast at an angle to the plate, and washers for forming an adjustable nozzle-opening between the other casting and 80 said plate; substantially as described.

8. In an oil-burner, the combination with two castings, of a plate clamped between them and having a beveled face at one side, a lip on one of the castings cooperating with 85 said beveled face to form a nozzle-opening which directs a blast at an angle to the plate, and means for forming an adjustable nozzle-opening between the other casting and said plate, said last-mentioned nozzle-opening di- 90 recting a blast substantially in the plane of the plate so as to intersect the first-mentioned blast; substantially as described.

In testimony whereof I hereunto affix my signature, in the presence of two witnesses, 95 this 14th day of August, 1902.

JOHN S. THURMAN.

Witnesses:

F. R. CORNWALL,
GEORGE BAKEWELL.