

J. P. ROBERTS.
LIQUID FUEL BURNER.
APPLICATION FILED DEC. 14, 1909.

975,460.

Patented Nov. 15, 1910.

2 SHEETS—SHEET 1.

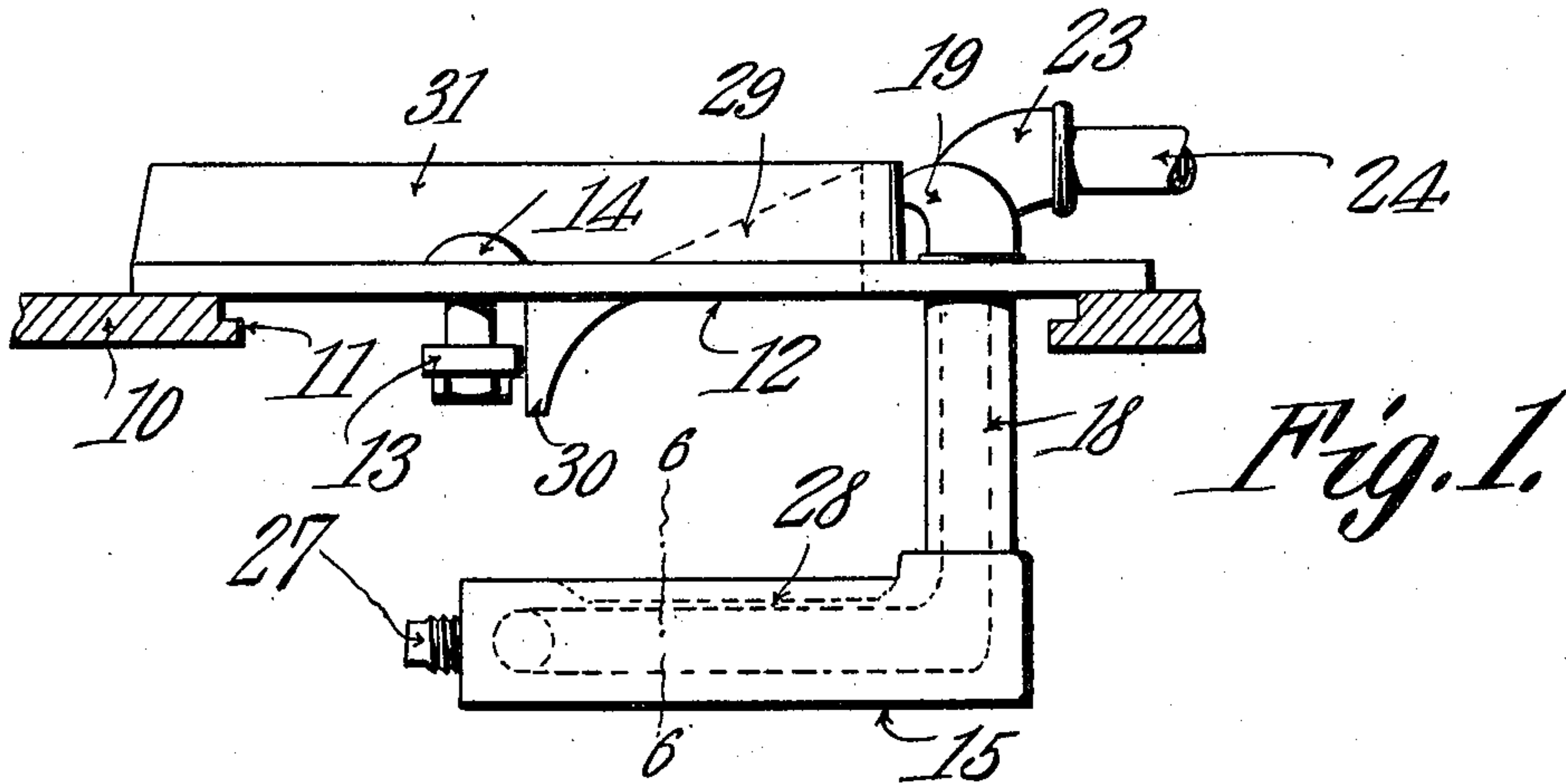


Fig. 1.

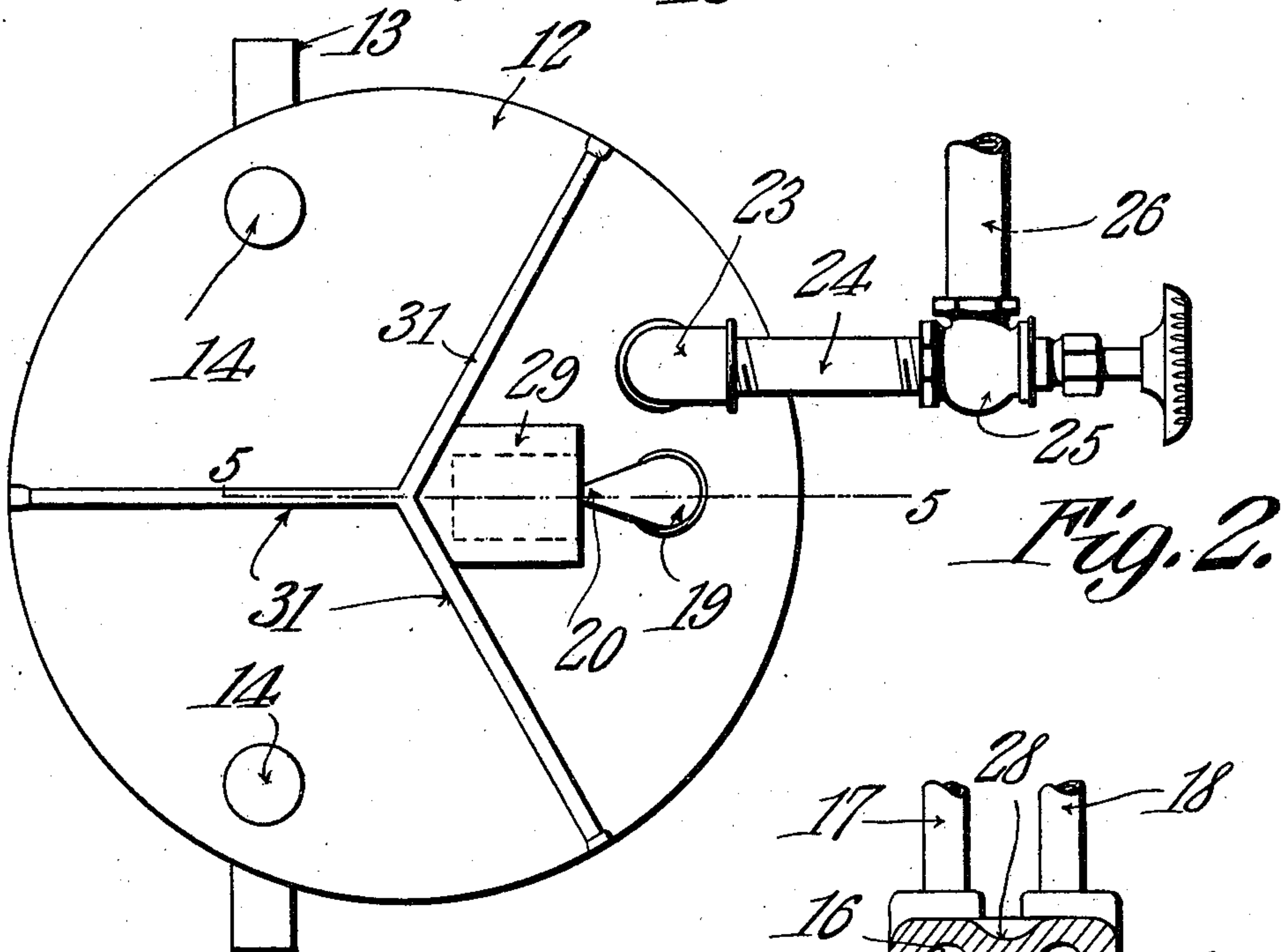


Fig. 2.

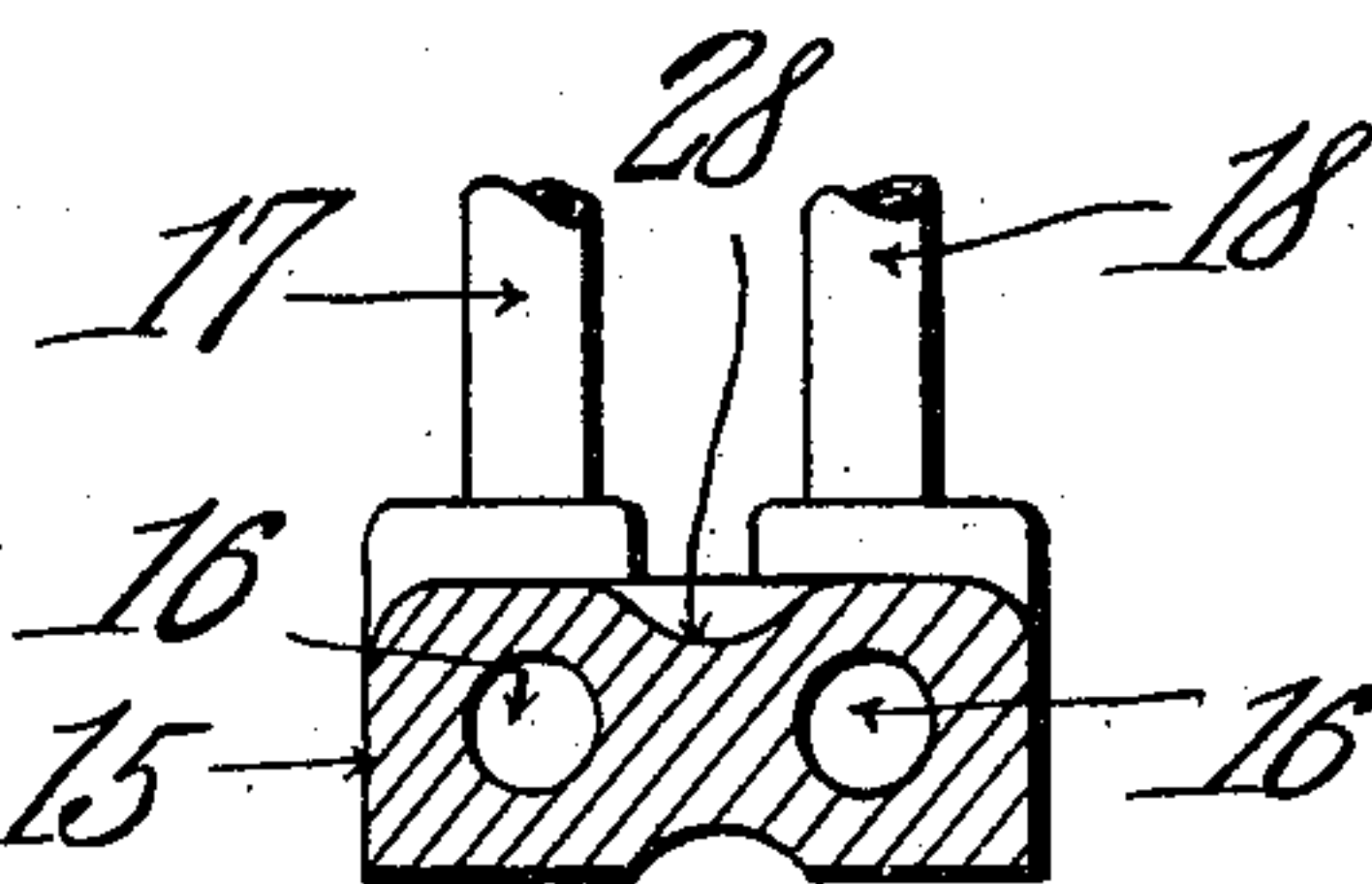


Fig. 6.

Witnesses

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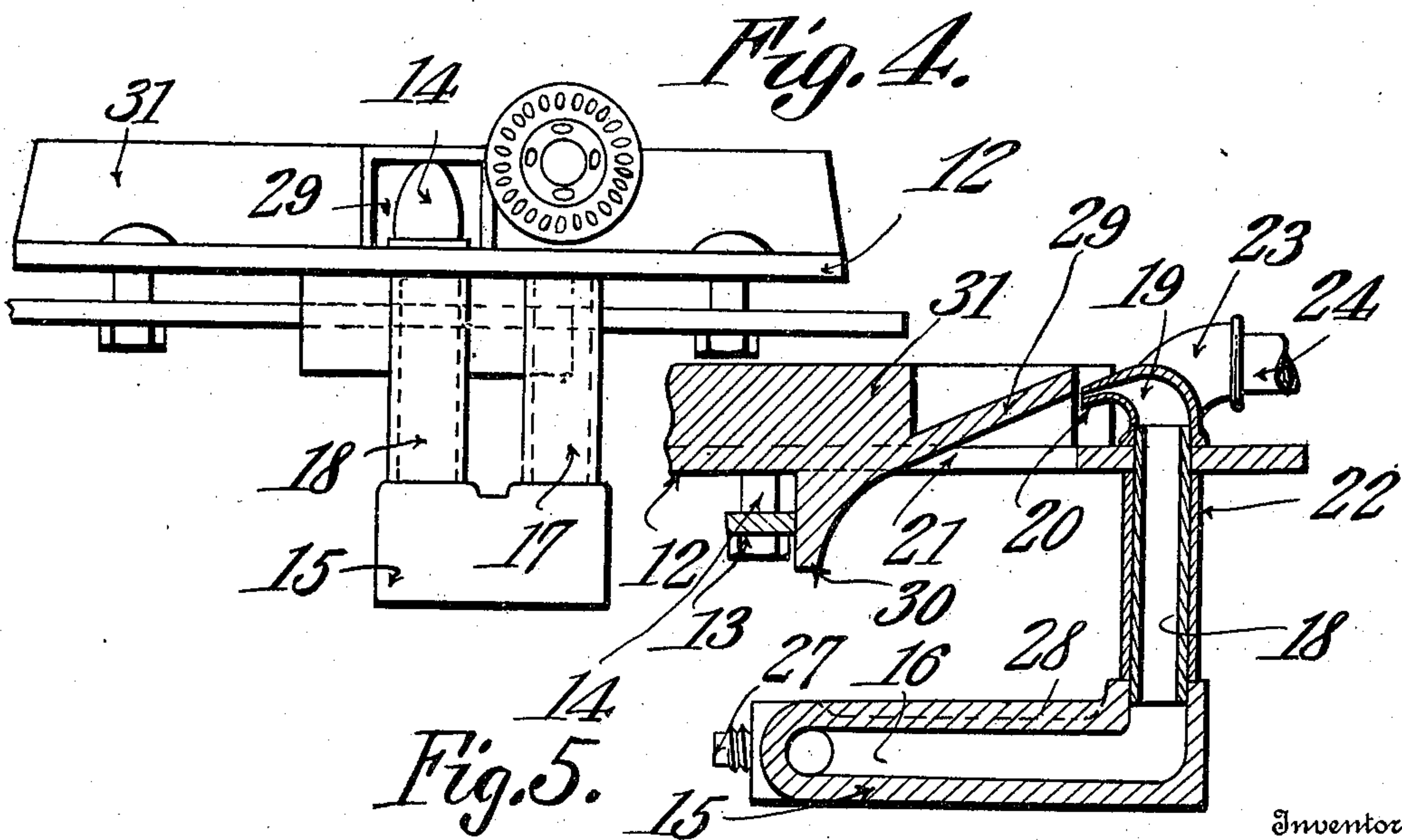
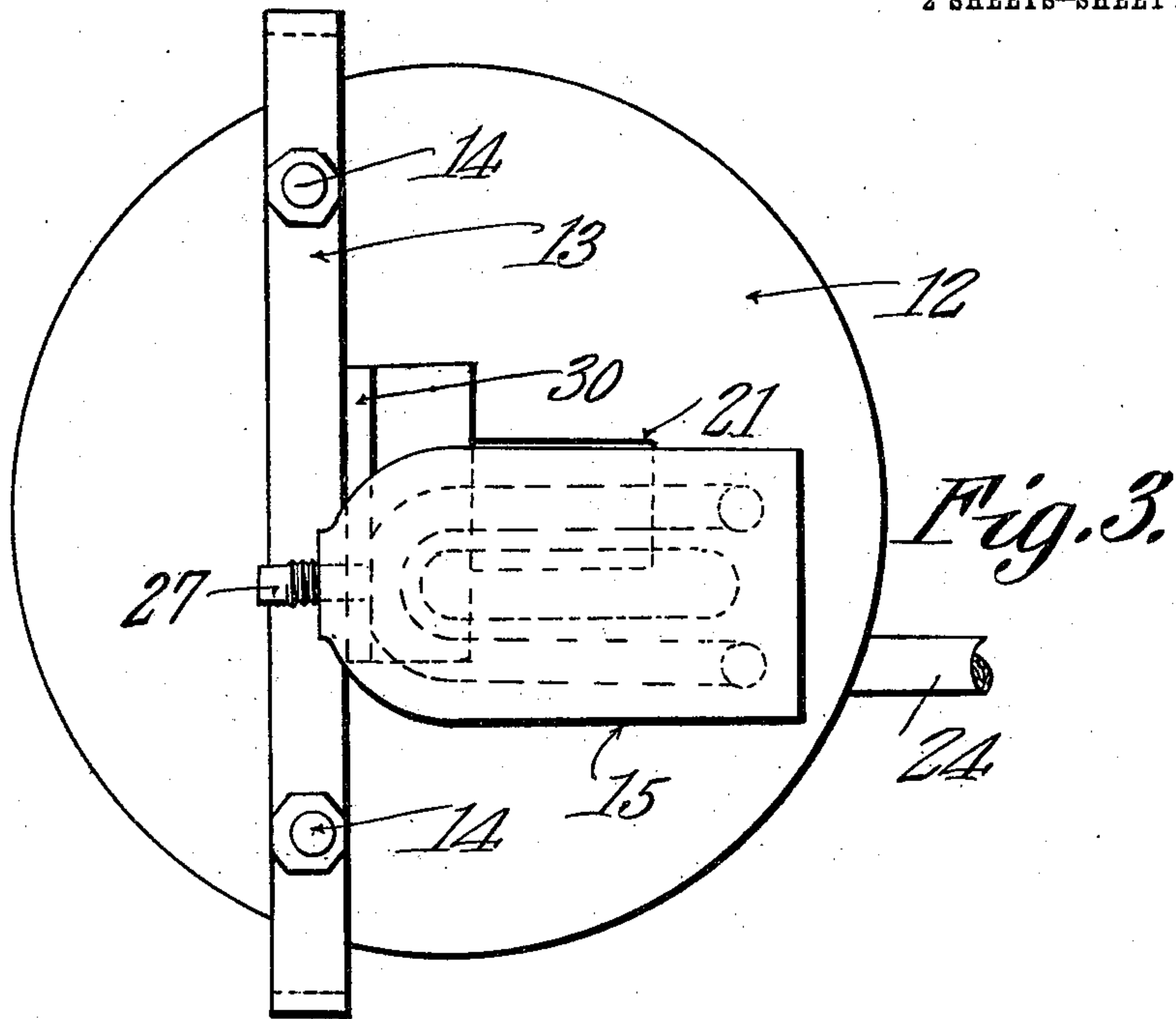
By C. A. Snow & Co. ^{Attorneys}

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Witnesses

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UNITED STATES PATENT OFFICE.

JOHN P. ROBERTS, OF LOS ANGELES, CALIFORNIA.

LIQUID-FUEL BURNER.

975,460.

Specification of Letters Patent.

Patented Nov. 15, 1910.

Application filed December 14, 1909. Serial No. 533,070.

To all whom it may concern:

Be it known that I, JOHN P. ROBERTS, a citizen of the United States, residing at Los Angeles, in the county of Los Angeles and State of California, have invented a new and useful Liquid-Fuel Burner, of which the following is a specification.

This invention relates to that class of liquid fuel burners which are designed to be supported in the lid opening of an ordinary coal burning stove, and in which vapor or gas is generated in a closed chamber from which it is fed to a burner.

It is the object of the present invention to provide in a burner of this type an improved flame deflector for directing the flame to the generator, and thus providing for a more rapid vaporization of the liquid fuel.

Another object is to provide improved supporting means which enables the burner to be readily applied to any ordinary coal burning stove.

The invention also has for its object to provide a burner embodying certain novel structural details as will be hereinafter described and claimed.

In the accompanying drawings: Figure 1 is a side elevation of the burner in position on a stove. Fig. 2 is a top plan view, Fig. 3 is a bottom plan view and Fig. 4 is an end view of the burner. Fig. 5 is a transverse section on the line 5—5 of Fig. 2. Fig. 6 is a transverse section on the line 6—6 of Fig. 1.

In the drawings, 10 denotes the top of the stove, and 11 one of the usual lid openings. Over this opening is placed a plate 12 which supports the entire burner structure, said plate taking the place of the lid. The bottom of the plate carries a bar 13 which extends across the lid opening into engagement with the under side of the stove top, the bar being connected to the plate by bolts 14. Upon tightening up these bolts, the plate is securely held in place over the lid opening.

The generator or vaporizing chamber is located within the fire pot of the stove, beneath the plate 12, and comprises a casting 15 having formed therein a looped passage 16, one end of which is connected to an inlet pipe 17, and the other end to an outlet pipe 18 leading to the burner.

The burner comprises an elbow 19 screwed at one end on the pipe 18 down against the top of the plate 12, said pipe extending through an opening in the plate. The

elbow is located above the plate, and has a downwardly directed tip 20, said tip being presented in the direction of an opening 21 in the plate 12. The pipe 18 depends from the plate, through the lid opening, into the fire pot of the stove, and is connected to the generator already described, the latter having a nipple on top to which the pipe connects. The pipe is inclosed by a sleeve 22 located between the top of the nipple and the under side of the plate 12. The inlet pipe 17 also extends to the generator through an opening made in the plate 12, and through the lid opening, and on its upper edge is screwed into an elbow 23, said elbow screwing down against the top of the plate. The lower end of the pipe 17 screws into a nipple on the generator. This pipe is also surrounded by a sleeve in the same manner as the pipe 18.

By the structure herein described, the inlet and outlet pipes are also made to serve as a support for the generator. The elbow 23 is connected to a short section of piping 24 leading to the casing 25 of a valve which controls the flow of fuel to the generator. From the valve casing, another pipe 26 leads to the tank or other source of supply (not shown). At the bend of the passage 16, the generator has a threaded aperture which is closed by a screw plug 27 which, upon being removed, permits access to the passage for the purpose of cleaning the same.

In the top of the generator is a depression 28 forming a cup to hold a supply of fuel when starting the burner. The opening 21 is surmounted by a hood 29 into the open end of which the tip 20 discharges, the top wall of the hood being presented at an oblique angle to the plate 12. On the bottom of the plate is a deflector comprising a flange 30 formed integral with the plate, and located above the generator. One side of the flange is curved, and forms a continuation of the inner side of the top wall of the hood. The tip 20 is presented at the same angle as the top wall of the hood.

To start the burner, a small supply of oil is allowed to run into the depression 28. This oil being ignited, the oil in the generator is heated, and the vapor thus generated issues from the tip, and passes into the hood 29 and through the opening 21. The vapor is mixed with air passing through the hood, and is burned in the fire pot of the stove. Air to support combustion is also

supplied through the stove. The air supply is regulated by the dampers of the stove. The hood 29 and the deflector 30 spread the flame, and direct it to the generator, whereby the latter is kept intensely heated and a thorough and rapid vaporization of the oil is effected. On top of the plate 12 are lugs 31 which are provided to support cooking utensils in order that the space on the stove occupied by the plate may not be wasted.

What is claimed is:

1. In a liquid fuel burner, a plate having an opening, a hood surmounting said opening, and having a top wall extending at an oblique angle to the plate, a burner tip presented into the open end of the hood, a generator beneath the plate, a supply connection to the generator, an outlet from the generator to the burner, and a deflector on the bottom of the plate forming a continuation of the aforesaid wall of the hood, said de-

flector being presented in the direction of the generator.

2. In a liquid fuel burner, a plate having an opening, a hood surmounting said opening, and having a top wall extending at an oblique angle to the plate, a burner tip presented into the open end of the hood, a generator beneath the plate, a supply connection to the generator, an outlet from the generator to the burner, and a deflector on the bottom of the plate, said deflector having a curved surface forming a continuation of the inner surface of the top wall of the hood, and said curved surface being presented in the direction of the generator.

In testimony that I claim the foregoing as my own, I have hereto affixed my signature in the presence of two witnesses.

JOHN P. ROBERTS.

Witnesses:

ESTHER NYGREN,
EMILY SPENGLER.