

No. 713,150.

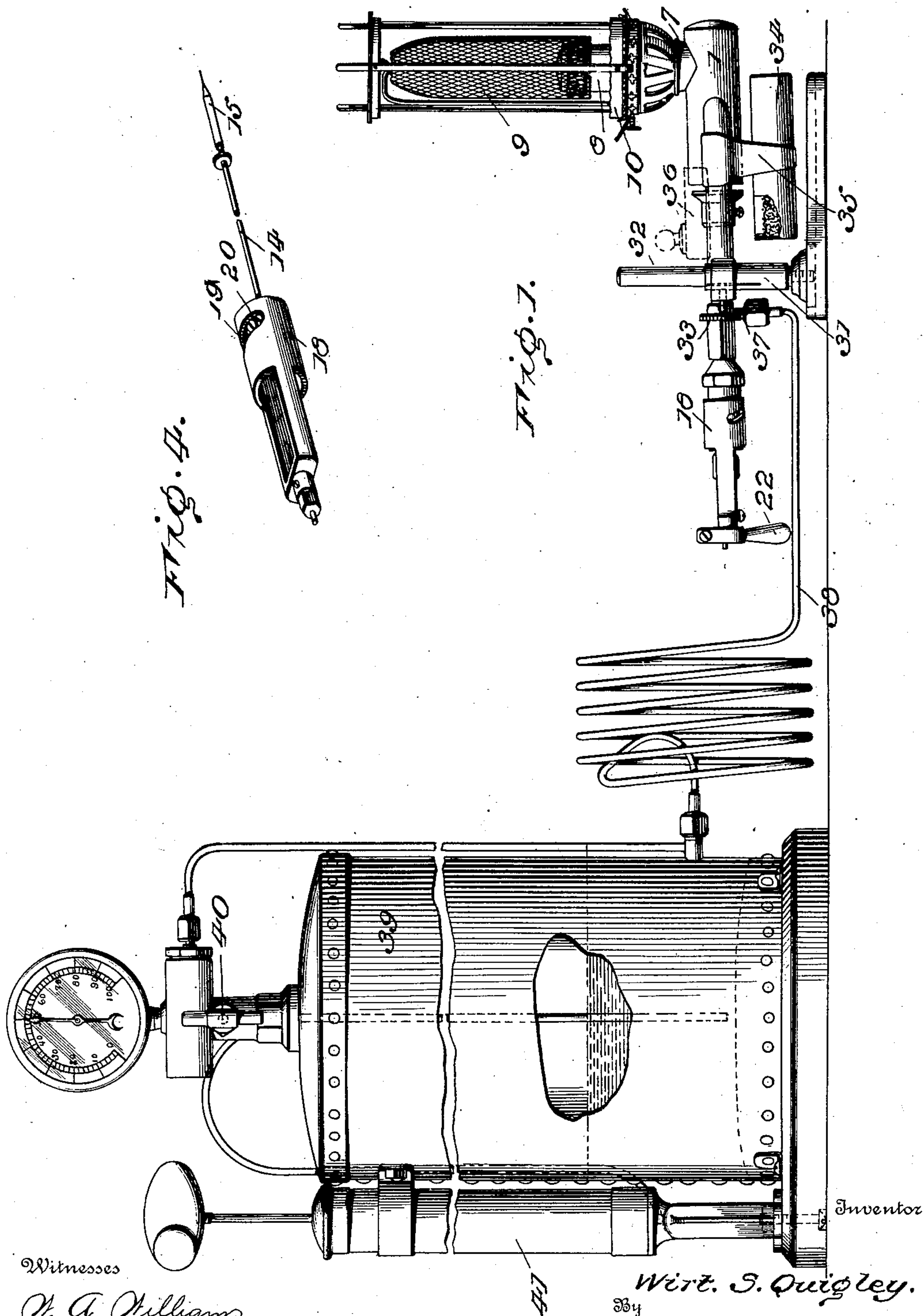
Patented Nov. 11, 1902.

W. S. QUIGLEY.  
INCANDESCENT VAPOR BURNER.

(Application filed Sept. 4, 1901.)

(No Model.)

2 Sheets—Sheet 1.



Witnesses  
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2 Sheets—Sheet 2.

Fig. 2.

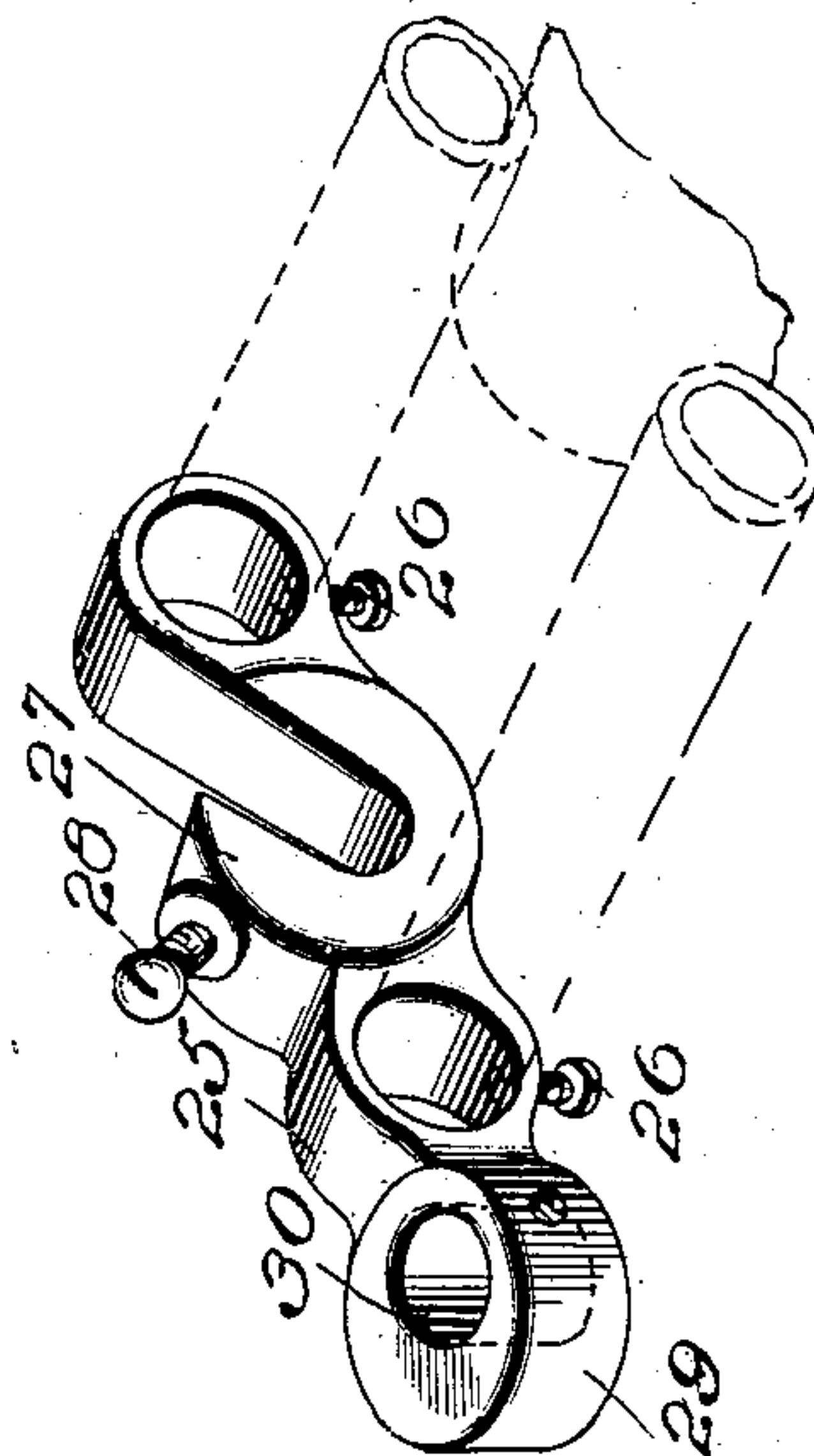
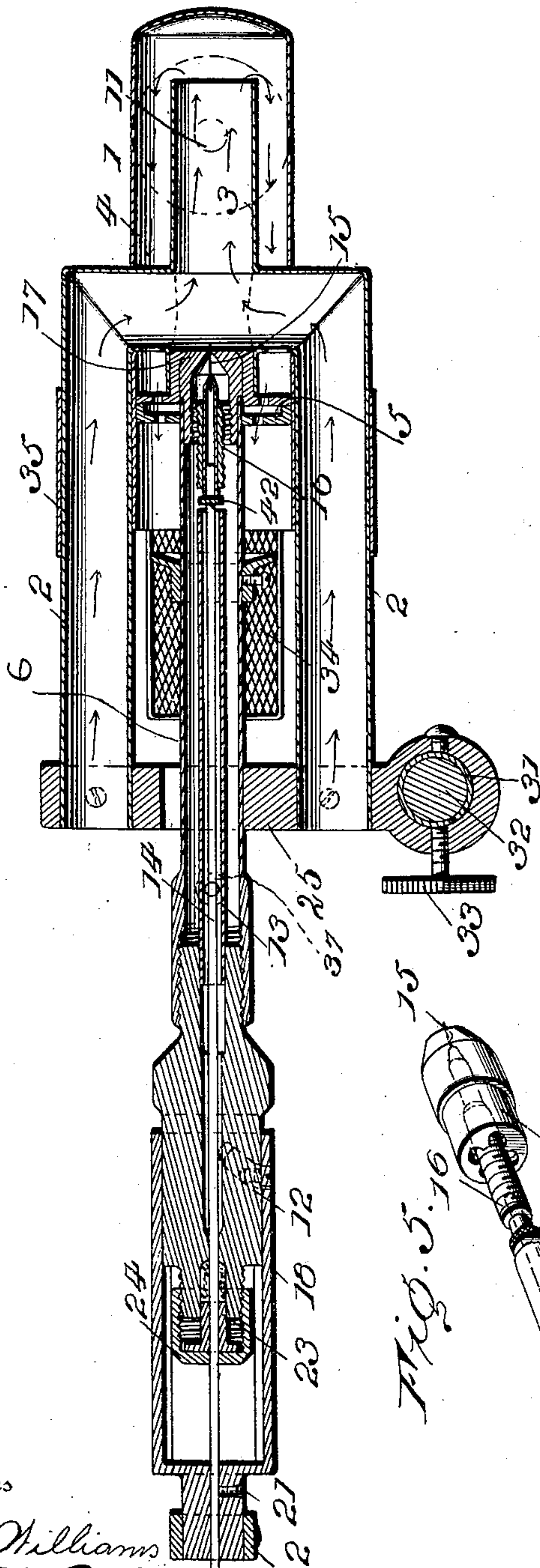


Fig. 3.

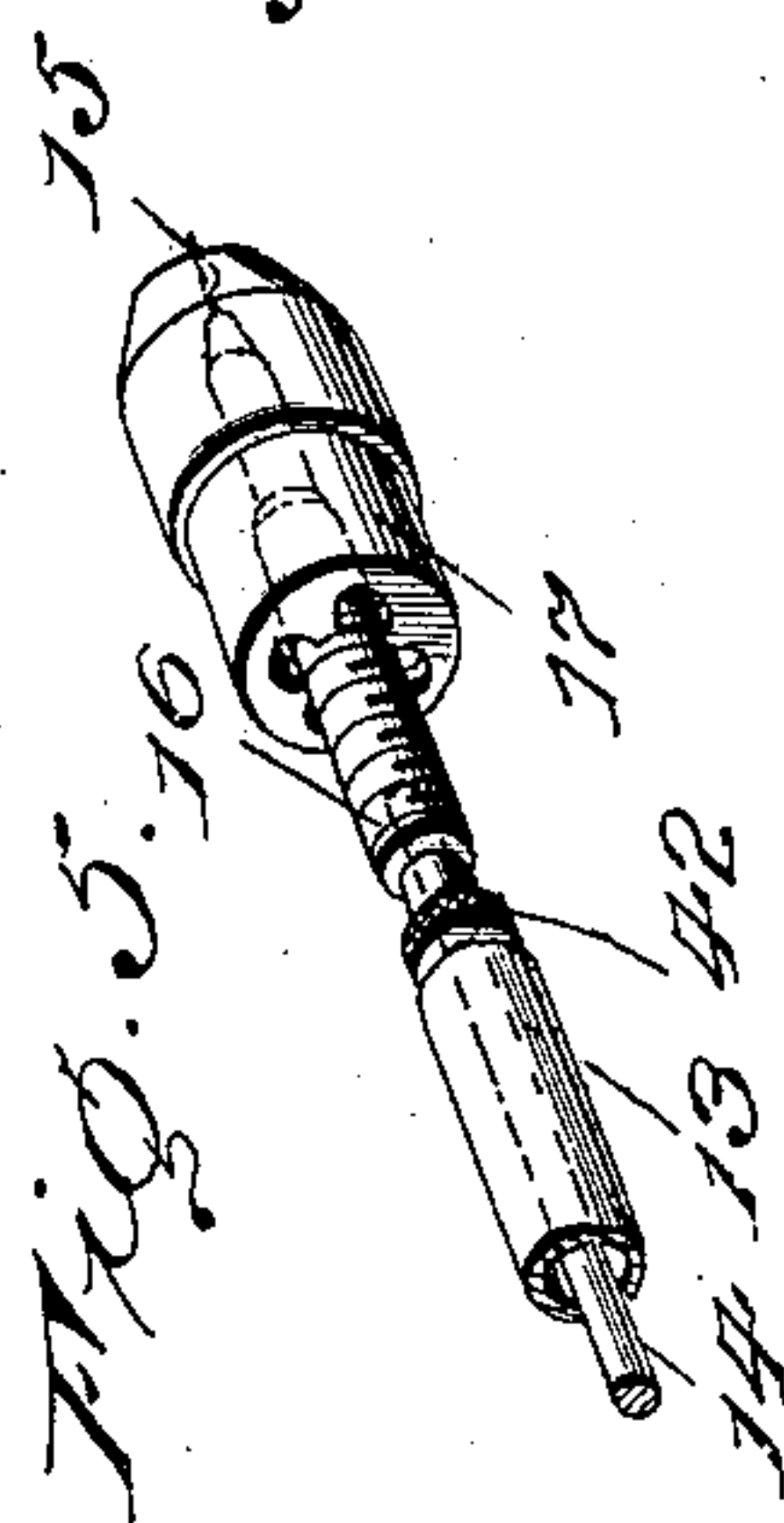


Fig. 5.

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# UNITED STATES PATENT OFFICE.

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## INCANDESCENT VAPOR-BURNER.

SPECIFICATION forming part of Letters Patent No. 713,150, dated November 11, 1902.

Application filed September 4, 1901. Serial No. 74,292. (No model.)

*To all whom it may concern:*

Be it known that I, WIRT STANLEY QUIGLEY, a citizen of the United States, residing at Philadelphia, in the county of Philadelphia, State of Pennsylvania, have invented certain new and useful Improvements in Incandescent Vapor-Burners, of which the following is a specification.

My invention relates generally to burners, and more particularly to incandescent vapor-burners, the main object being to provide a burner of this character suitable for operating stereopticons, projectoscopes, and such like apparatus in which a light of great luminosity is required.

Further objects are to provide a complete burner outfit for stereopticons and the like which shall be simple in its organization and to simplify and improve the general construction of the burner, so that the same can be readily taken apart for purposes of renewal or repair.

The nature, characteristic features, and scope of the invention will be more clearly understood by reference to the following description, taken in connection with the accompanying drawings, forming a part hereof, in which—

Figure 1 is a side elevational view of a stereopticon-burner outfit embodying features of the invention, showing the general arrangement of burner, oil-tank, and pressure-generator. Fig. 2 is a sectional view of the burner. Fig. 3 is a perspective view of the bracket. Fig. 4 is a perspective view of the needler. Fig. 5 is an enlarged detail view showing the collar 42 in its relation to the core 13 and the manner in which the nipple is supported within the vaporizing-tube.

As shown in Fig. 1, the outfit comprises a vapor-burner, a tank containing a suitable hydrocarbon fluid, and means for supplying pressure to the tank, such as an air-pump.

The burner comprises a horizontally-disposed casing 1, provided with air-intake tubes 2 and with a mixing-tube 3, with which said

tubes communicate, as shown in Fig. 2. There is an annular space or conduit 4 between said casing and mixing-tube which constitutes a chamber for a portion of the mixture of oil-gas and air, the base of which chamber is defined by a subburner 5, which surrounds the discharge end of a vaporizing-tube 6.

The casing 1 is provided with an upward extension 7, which receives the burner-head 8, the latter being constructed to carry a mantle 9 and chimney-support 10, a chimney being desirable in some instances. The mixing-tube has direct communication with said extension by means of an opening 11.

The vaporizing-tube 6 is threaded at its base to receive a needler-body 12, from which extends into said tube a core 13 and within the core a needler-rod 14, carrying a needler 15, which is guided in a nipple 16 and can be adjusted to penetrate the tip or nozzle 17. For this purpose the needler-body is provided with a revoluble member or sleeve 18, which has an angular slot 19, that is penetrated by a screw or pin 20, projecting from the needler-body, and said revoluble member 18 is attached to the needler-rod by a set-screw 21 and is manipulated by a lever 22. The needler-rod is provided with a collar 42, which prevents oil or vapor from escaping via the core. The needler-body is provided with a packing-gland 23 and with a securing-cap 24.

The casing 1 and the mixing-tube are both supported by the air-tubes 2, which are in turn supported by a bracket 25, suitably apertured to receive said tubes and served with set-screws 26 to hold them to place. The bracket 25 also supports the vaporizing-tube, which is adjustably disposed centrally thereof, the bracket being provided with an overhanging jaw 27, having a set-screw 28, which locks said vaporizing-tube against displacement.

For purposes of adjusting the burner vertically the bracket 25 is provided with an extension or lug 29, having an eye 30, in which is secured a split sleeve 31, fitted over and



reciprocal on a suitably-supported standard 32, a set-screw 33 being provided to hold said sleeve in its adjusted positions.

Below the casing 1 and the vaporizing-tube there is a starting device, which may be the alcohol-cup 34, which in the present instance is attached to the casing by means of the metal straps 35, and in order to concentrate the heat from said alcohol-cup upon the vaporizing tube I provide a screen or shutter 36, which is slidably arranged on top of the casing and can be adjusted to inclose the space between the latter and the bracket 25.

The vaporizing-tube has an oil-inlet 37, to which is attached an oil-supply pipe 38, communicating with the oil-tank 39 and provided with a regulating-valve 40. 41 is an air-pump for compressing air in the tank.

The closed outer end of the casing functions as a deflector for deflecting portions of the mixture of oil-gas and air into the conduit or chamber 4 for supplying the sub-burner.

It will be obvious to those skilled in the art to which the invention appertains that modifications may be made in details without departing from the spirit and scope of the same. Hence I do not limit myself to the precise construction and arrangement of parts hereinabove described, and illustrated in the accompanying drawings; but,

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

1. The combination of a vaporizing-tube having an oil-inlet and a vapor-discharge nozzle or jet, a hollow inner core, a needler-body attached to said vaporizing-tube and core, a needler-rod passing through the needler-body and through the core, a collar borne upon said needler-rod and acting to close the outer opening of the core, a needler attached to the needler-rod and arranged to penetrate the jet, a guide for the needler, and a device for manipulating the needler-rod, substantially as described.

2. The combination with the burner, the oil-supply connections and the vaporizing apparatus, of a bracket supporting and carrying the burner and vaporizing apparatus independently of each other, an upright or standard, and said bracket having a split sleeve, which coöperates with said standard.

3. In apparatus such as described, the combination of a horizontally-disposed casing having a burner-head constructed to carry a mantle, a mixing-tube within said casing, air-tubes supporting the casing and mixing-tube and communicating with the latter, said casing and mixing-tube forming an annular air space or chamber for a portion of the mixture of oil-gas and air, a bracket supporting said air-tubes, a vaporizing-tube supported by said bracket and discharging oil-gas into the mixing-tube, a subburner surrounding the discharge end of the vaporizing-tube and com-

municating with said chamber, oil-supply connections, and means for adjustably supporting said bracket.

4. In apparatus such as described, the combination of a horizontally-disposed casing having a burner-head constructed to carry a mantle, a mixing-tube within said casing, air-tubes supporting the casing and mixing-tube and communicating with the latter, said casing and mixing-tube forming a chamber for a portion of the mixture of oil-gas and air, a vaporizing-tube discharging oil-gas into the mixing-tube, a bracket supporting the air and vaporizing tubes, a subburner surrounding the discharge end of the vaporizing-tube and communicating with said chamber, an alcohol-cup arranged below said casing and vaporizing-tube, an adjustable screen for concentrating the heat upon the vaporizing-tube, oil-supply connections, and means for adjustably supporting the bracket, substantially as described.

5. The combination of a casing having a burner-head constructed to carry a mantle, a mixing-tube within said casing, air-tubes supporting the casing and mixing-tube and communicating with the latter, said casing and mixing-tube forming a chamber for a portion of the oil-gas and air, a vaporizing-tube discharging oil-gas into the mixing-tube, a bracket whereby the vaporizing-tube and the air-tubes are independently supported, said bracket being capable of vertical adjustment, a subburner surrounding the discharge end of the vaporizing-tube and communicating with said chamber, a starting device and drip-cup arranged below said casing and vaporizing-tube, and a screen movable with reference to the casing for concentrating heat upon the vaporizing-tube, substantially as described.

6. The combination of the vaporizing-tube having an oil-inlet and a vapor-discharge nozzle or jet, a hollow inner core, a needler-body attached to said vaporizing-tube and core, a needler-rod passing through the needler-body and through the core, a collar borne upon said needler-rod and acting to close the outer opening of the core, a needler attached to the needler-rod and arranged to penetrate the jet, a guide for the needler, a packing-gland for the needler-body, a securing-cap for holding said gland to place, and a device for manipulating the needler-rod, substantially as described.

7. The combination with the burner, the mixing-tube, the air-inlet tubes communicating with the latter, and the oil-supply connections, of a vaporizing-tube, a bracket having an overhanging jaw provided with means for locking the vaporizing-tube against displacement, and transversely-extending arms, which support the air-tubes, an upright or standard, and one of said arms having a clamping member adapted to said standard, substantially as described.

8. The combination of a vapor-burner, a



vaporizing apparatus, an oil-tank, a flexible  
feed connection between the oil-tank and vap-  
orizing apparatus, a bracket supporting and  
carrying the burner and vaporizing appara-  
5 tus independently of each other, an upright  
or standard, and a split sleeve on said bracket,  
which coöperates with said standard, substan-  
tially as described.

In testimony whereof I have hereunto  
signed my name in the presence of two sub- ro  
scribing witnesses.

WIRT S. QUIGLEY.

Witnesses:

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F. H. MAC MORRIS.