

(No Model.)

L. R. BLACKMORE.

TINNER'S SOLDERING APPARATUS.

No. 414,370.

Patented Nov. 5, 1889.

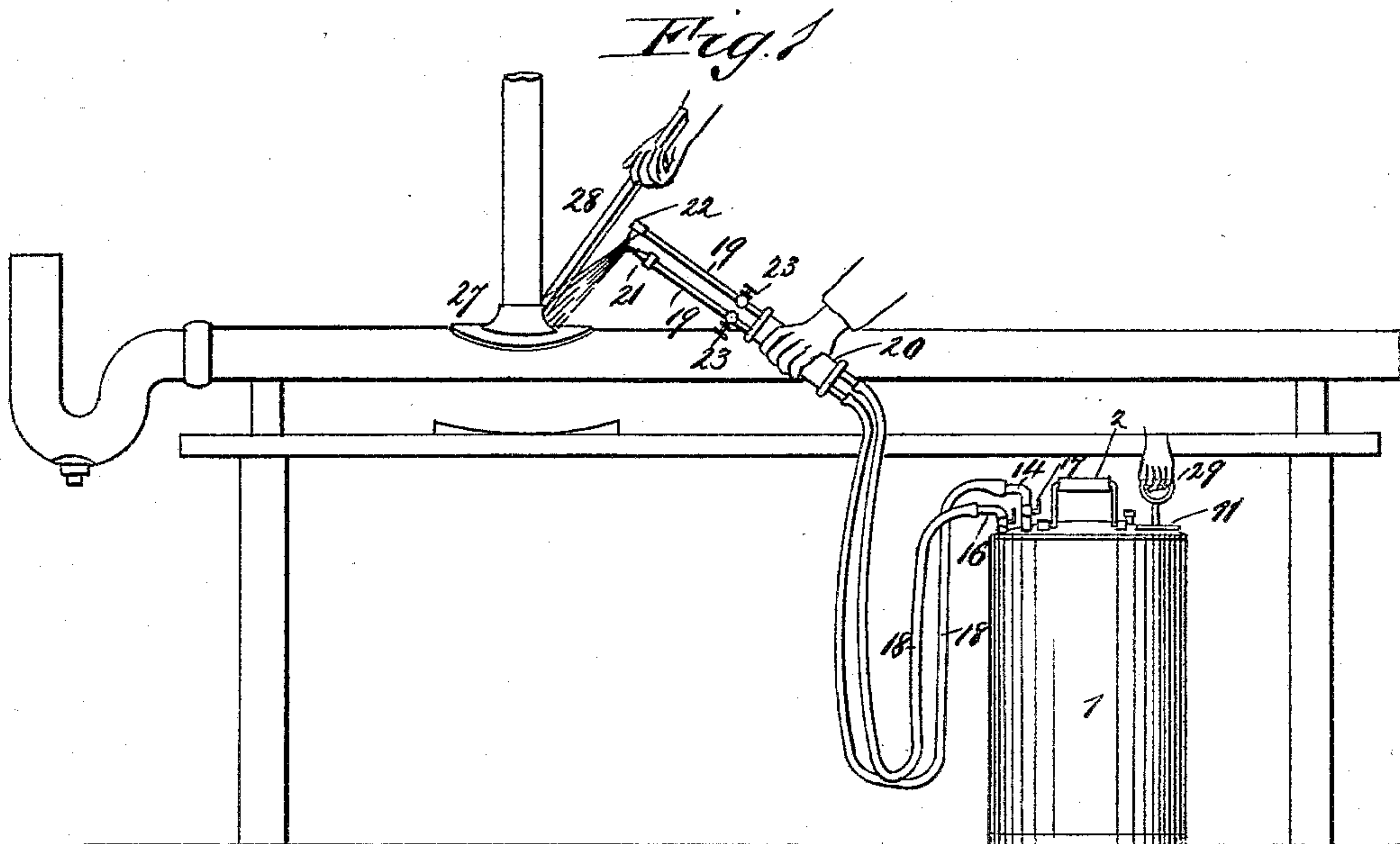


Fig. 2

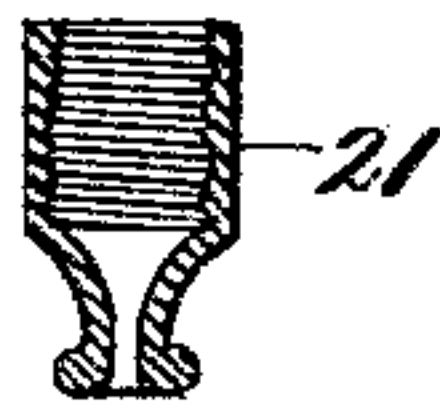
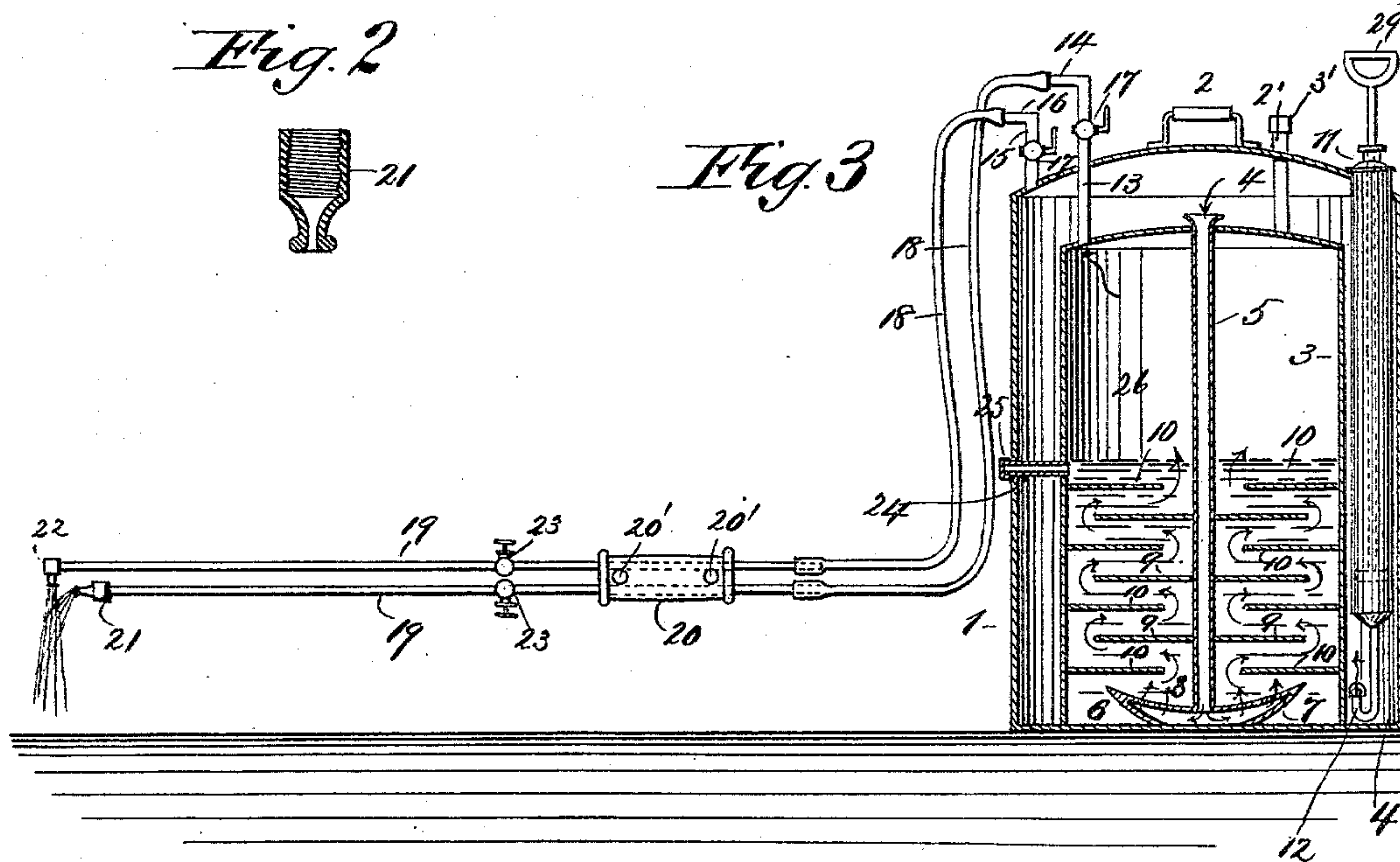


Fig. 3



WITNESSES:

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LAWRENCE R. BLACKMORE, OF NEWARK, NEW JERSEY.

TINNER'S SOLDERING APPARATUS.

SPECIFICATION forming part of Letters Patent No. 414,370, dated November 5, 1889.

Application filed October 30, 1888. Serial No. 289,496. (No model.)

To all whom it may concern:

Be it known that I, LAWRENCE R. BLACKMORE, of Newark, in the county of Essex and State of New Jersey, have invented a new and Improved Tinner's Soldering Apparatus, of which the following is a full, clear, and exact description.

This invention relates to an apparatus to be used by plumbers, tinner's, lead-burners, gas-fitters, zinc-workers, &c., in soldering and brazing, and has for its object to provide a safe and effective apparatus by means of which a steady fierce flame may be produced and regulated in size, and plumbing-irons, torches, and other dangerous means for heating solder dispensed with.

This invention consists in a tinner's soldering apparatus constructed and arranged as hereinafter described and claimed.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar figures of reference indicate corresponding parts in all the views.

Figure 1 illustrates the invention in use. Fig. 2 is a detail of one of the burners, and Fig. 3 illustrates the invention with the gas-generating furnace in vertical section.

In the construction of this invention a portable closed receptacle 1 is employed, having the handle 2 at its top and an inner receptacle 3 secured to its bottom, with an air-space 4 located between the sides and tops of the receptacles. The receptacle 3 has a tube 2' with cap 3' mounted in its top and projecting through receptacle 1 for the supply of gasoline or other fluid, and is provided with an air-tube 5, extending centrally from top to bottom thereof, and having its upper end opening into the air-space 4 between the tops of the receptacles, and its lower end terminating in a strainer 6, consisting of a shallow chamber 7, having a perforated top 8, through which air from the tube 5 may pass up into the receptacle 3.

In order that the air entering receptacle 3 from chamber 7 may ascend gradually in the receptacle 3, the air-tube 5 is provided with a series of horizontal plates 9, which alternate with a series of horizontal plates 10, projecting from the interior wall of receptacle 1. The series of plates 9 and 10 are carried up to a sufficient height in the receptacle 3, the

plates 9 extending from the tube 5 almost to the wall of receptacle 1, and the plates 10 extending from the wall of receptacle 1 almost to the tube 5. At one side of receptacle 1 is located an air-pump 11, having its nozzle 12 opening into the air-space 4. At the top of receptacle 3 is located a tube 13 for the passage of combustible vapor from receptacle 3, the tube 13 extending up through air-space 4 and the top of receptacle 1 and terminating in an angular projection 14.

An air-tube 15, opening into air-space 4, is located at the top of receptacle 1 and extends upward, terminating in an angular projection 16. The passage of combustible vapor through tube 13 and the passage of air through tube 15 are controlled by suitable stop-cocks 17. To the projections 14 and 16 are connected flexible tubes 18, joined to the ends of parallel metallic tubes 19, mounted in a cylindrical handle 20. The handle 20 may be formed in two parts connected together by bolts 20'. To the outer ends of the tubes 19 are screwed burners 21 22, located at an angle to each other, whereby the streams of combustible vapor and air issuing therefrom will intersect each other and join together to form a single stream. The discharge of combustible vapor and air from burners 21 22 is regulated by stop-cocks 23, located in the tubes 19, forward of the handle 20, whereby they are in convenient reach of the operator. The flexible tubes 18 may be of such length as to enable the burners to be used at any distance required from the receptacle 1.

In order to ascertain the quantity of fluid in receptacle 3 a tube 24 is located at a suitable height in the side of receptacle 1, projects through air-space 4 and the side of receptacle 3, and is closed at its outer end by a cap 25.

In use, a suitable amount of gasoline, petroleum, or other kindred fluid being placed in receptacle 3, the pump 11 is operated and air thereby forced into air-space 4, down through tube 5, and up through the perforated top of strainer 6, from which it passes upward through the gasoline 26 in a zigzag direction, owing to the plates 9 and 10. The action of the air forced through the gasoline generates a combustible vapor, which is carried through pipe 13, its flexible pipe 18, and discharge-

tube 19, and is emitted in a strong jet from burner 21. The air supplied by pump 11 also fills the air-space 4, and is forced through tube 15, its flexible tube 18, and discharge-tube 19, and is emitted in a strong jet from burner 22. The stream formed of the jets of combustible vapor and air from burners 21 and 22, being ignited, affords a steady fierce flame, which may be regulated by the stop-cocks 23, and may be applied to a joint 27 in soldering, as shown in Fig. 1, the handle 20 being held in one hand and a stick of solder 28 in the other. The pump 11 may be operated by a handle 29, as shown, or by power. The burners 21 and 22 may be unscrewed from tubes 19 and other burners attached with different-sized jet-holes.

By means of this invention a safe apparatus is provided for heating in soldering and brazing joints, and a powerful flame is obtained which is fully under the control of the operator.

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

1. A portable tinner's soldering apparatus consisting of an outer and inner receptacle with an air-space between them, an air-pump mounted on the outer receptacle with discharge-nozzle opening into the air-space, a vertical air-tube having its upper end opening into the air-space and its lower end opening into the lower end of the inner receptacle, a series of overlapping plates mounted on the interior surface of the side of the inner receptacle and on the vertical air-tube and affording zigzag passage-ways for the ascent of air, a combustible-vapor-discharging tube leading from the inner receptacle, and an air-discharge tube leading from the outer receptacle, the combustible-vapor and air discharge tubes having regulating stop-cocks and terminating in burners located adjacent to each other at an angle, substantially as shown and described.

2. A portable tinner's soldering apparatus consisting of an outer and inner receptacle with an air-space between them, the inner receptacle being adapted to contain gasoline or other kindred fluid and having a chamber with perforated top in its lower end, an air-pump mounted on the outer receptacle with discharge-nozzle opening into the air-space, a vertical air-tube having its upper end opening into the air-space and its lower end opening into the chamber with the perforated top, a series

of overlapping plates mounted on the interior surface of the side of the inner receptacle and on the vertical air-tube and affording zigzag passage-ways for the ascent of air from the perforated chamber, discharge-tubes leading from the inner and outer receptacles with regulating stop-cocks, flexible tubes leading from the discharge-tubes, and parallel tubes connected to the flexible tubes and having regulating stop-cocks and burners at their outer ends arranged at an angle to each other, substantially as shown and described.

3. In a portable tinner's soldering apparatus, an outer receptacle 1, an inner receptacle 3, with air-space 4 between the sides and tops of receptacles 1 and 3, an air-tube 5, located in receptacle 3, with its upper end opening into air-space 4 and its lower end opening into chamber 7, having perforated top 8, the series of horizontal plates 9, projecting from tube 5, and the series of horizontal plates 10, projecting from the receptacle 3, the plates 9 and 10 overlapping each other and forming zigzag passage-ways for the ascent of air, an air-pump 11, connected to receptacle 1 and having its discharge-nozzle 12 opening into air-space 4, a combustible-vapor-discharge tube 13, extending from the top of receptacle 3 through receptacle 1 and having a stop-cock 17, an air-discharge tube extending from the top of receptacle 1 and having a stop-cock 17, flexible tubes 18, extending from tubes 13 and 15, and parallel tubes 19, connected to tubes 18 and mounted in handle 20, with stop-cocks 23 and detachable burners 21 and 22, arranged at an angle to each other at the outer ends of tubes 19, substantially as shown and described.

4. In a tinner's soldering apparatus, the combination, with an outer receptacle to contain air, of an inner carbureting-receptacle, an air-pump mounted on the outer receptacle and discharging into the air-space between the two receptacles, an air-pipe extending from said air-space to the bottom of the inner receptacle, with one end opening into the air-space and the other into the lower end of the inner receptacle, an air-delivery pipe connected with the space between the two receptacles, and a combustible-vapor-delivery pipe connected with the inner receptacle, substantially as set forth.

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Witnesses:

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