(No Model.) 2 Sheets—Sheet 1.

W. A. NICHOLAS & H. BIRNBAUM.

PORTABLE SOLDERING IRON AND POT HEATER.

No. 457,661. Patented Aug. 11, 1891.

Fig. 1.

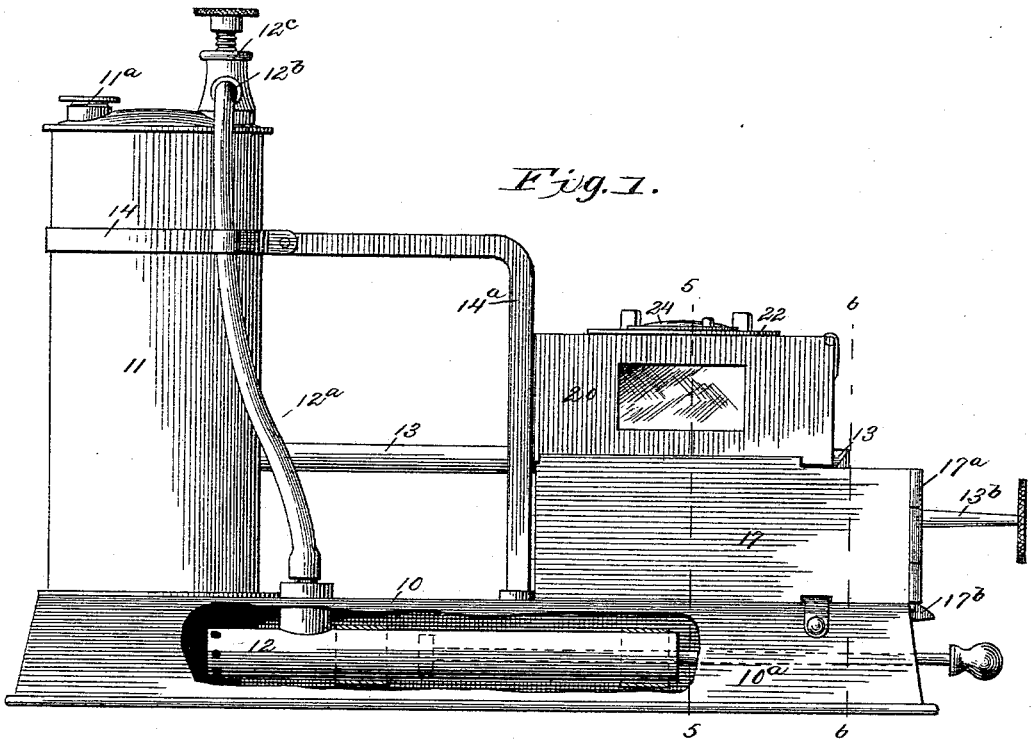


Fig. 2.

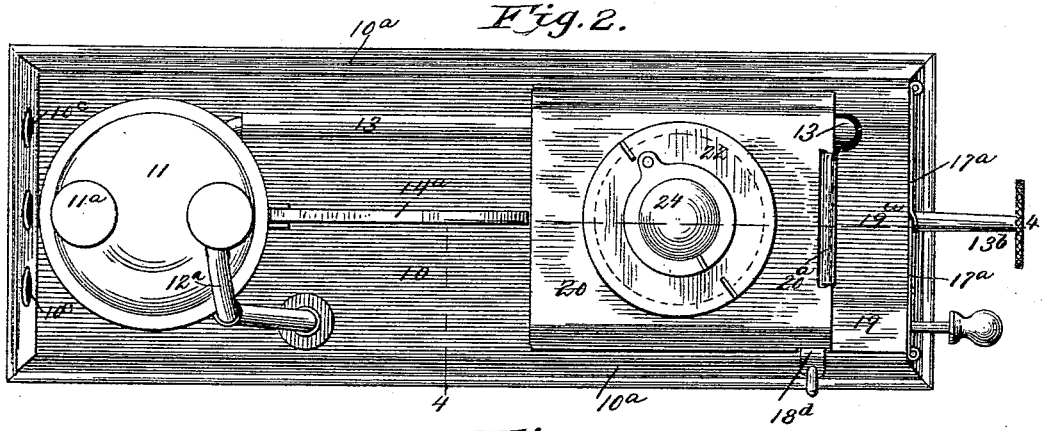
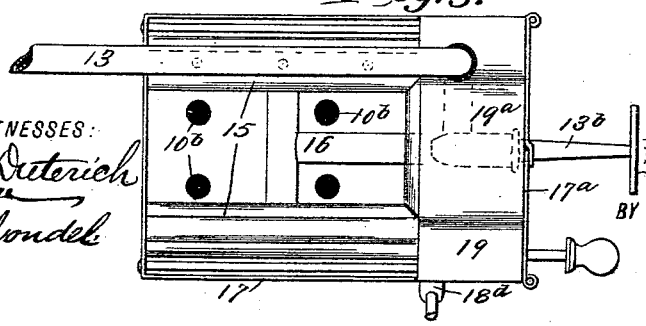


Fig. 3.



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(No Model.) 2 Sheets—Sheet 2.

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Fig. 4.

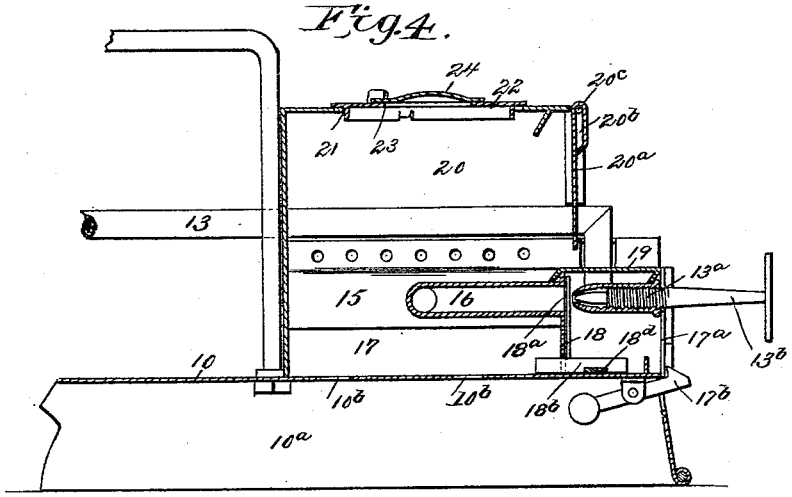


Fig. 5.

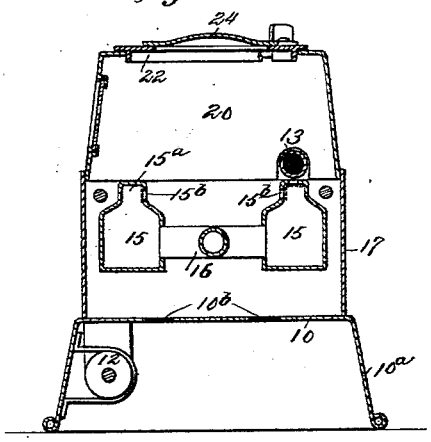


Fig. 6.

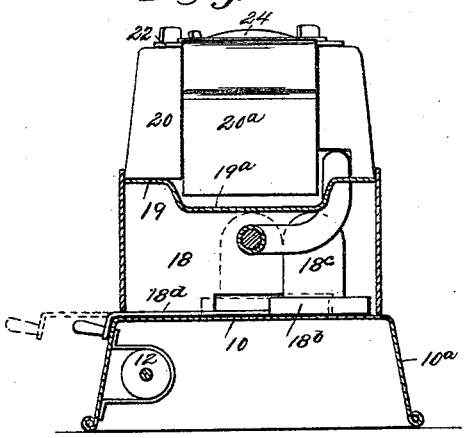
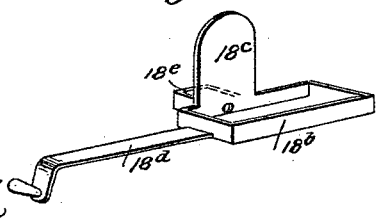


Fig. 7.



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UNITED STATES PATENT OFFICE.

WILLIAM A. NICHOLAS AND HENRY BIRNBAUM, OF RAPID CITY, SOUTH DAKOTA.

PORTABLE SOLDERING-IRON AND POT-HEATER.

SPECIFICATION forming part of Letters Patent No. 457,661, dated August 11, 1891.

Application filed December 23, 1890. Serial No. 375,642. (No model.)

To all whom it may concern:

Be it known that we, WILLIAM A. NICHOLAS and HENRY BIRNBAUM, of Rapid City, in the county of Pennington and State of South Dakota, have invented a new and useful Improvement in a Portable Soldering-Iron and Pot-Heater, of which the following is a specification.

This invention relates to an improved soldering-iron or pot-heater, particularly adapted for tinners' and plumbers' use.

The object of our invention is to produce a portable heater, employing hydrocarbons as fuel, and which can be used indoors or out in all kinds of weather, and one in which one or more irons and a pot may be heated at one and the same time.

With these objects in view our invention consists of a hydrocarbon-burner suitably supplied and incased, and a detachable hood arranged upon the casing covering the burner and adapted to receive the pot-irons, &c.

Our invention consists, further, in certain details of construction and combination of parts, as will be more fully hereinafter described, and pointed out in the claims.

In the drawings forming a part of this specification, Figure 1 is a side view. Fig. 2 is a top plan view; Fig. 3, detail top plan view of the heater with hood detached. Fig. 4 is a section on line 4 4 of Fig. 2. Fig. 5 is a section on line 5 5 of Fig. 1. Fig. 6 is a section on line 6 6 of Fig. 1. Fig. 7 is a detail view of the pan.

In the practical embodiment of our invention we employ a base 10, supported upon the sides 10^a, and in the said base, near one end of the same, are formed a series of perforations 10^b, and in the side, at the opposite end, are formed the perforations 10^c. An oil-reservoir 11 is arranged upon the base near the imperforate end, said reservoir being of any preferred construction and provided with a filling-vent 11^a. An air-forcing pump 12 is arranged beneath the base and connected with the upper end of the oil-reservoir by means of the tube or pipe 12^a and the coupling-joint 12^b, arranged in the top of the reservoir, said coupling-joint being provided with a valve 12^c, whereby the compressed air within the reservoir may be retained therein and serve to force the hydrocarbon out through the oil-supply pipe 13, connected with the reservoir near the lower end of the same. A band 14 encircles the reservoir and holds the air-tube in place, and an angle-brace 14^a connects the band with the base, whereby the reservoir is held rigid on said base. The piston-rod of the air-pump projects beyond the forward end of the base within easy reach of the operator.

The iron and pot-heater is arranged upon the perforated end of the base, these perforations being employed to supply the necessary amount of air, and in constructing the heater we employ two vaporizing chambers or receptacles 15, arranged longitudinally upon opposite sides of the perforations in the base, said chambers having narrow ridges or domes 15^a formed upon their upper faces, the opposing faces of said ridges or domes having a series of burners or perforations 15^b produced therein. The upper face of one of the ridges or domes is also provided with burners or perforations, and over said perforated face is passed the oil-supply pipe 13, the forward end of said pipe being curved downwardly at the forward end of the vaporizing-chamber, and inwardly toward the longitudinal center of the base, being provided with a valved coupling 13^a at its lower end, whereby the supply of oil or vapor to the chambers is regulated.

A T-coupling 16 connects the vaporizing-chambers, the body of said coupling projecting forward, the end of the same being contiguous to the valved coupling, whereby oil or vapor may be forced through the supply-pipe and valved coupling into the T-coupling and thence equally into the vaporizing-chambers, where it is burned at the burners or perforations 15^b. The flames will extend toward the center of the heater, thereby concentrating the heat, and the hydrocarbon in the chambers and T-coupling will be vaporized, and the burners beneath the supply-pipe heat the fuel passing through the same and tend to vaporize it.

A casing 17 surrounds the vaporizing-chambers, the said casing extending to the forward end of the base, and at said end is provided with the doors 17^a, having their oppos-

ing edges cut away to embrace the valve-stem 13^b when the doors are closed. A gravity-catch 17^b locks the doors when in a closed position. The casing extends somewhat forward of the vaporizing-chambers, and between the forward ends of the chambers and the forward end of the casing is arranged a rigid partition 18, said partition having a perforation 18^a made therein registering with the opening of the valve-coupling, and in which the connecting-pipe is secured, whereby a communication is established between these conductors. The partition thus forms a forward compartment, in which is arranged a drip and flash pan 18^b, adapted to slide upon the base and rest beneath the end of the valved coupling, a vertical plate 18^c being secured to the rear side of the pan adapted to cover the perforation in the partition when the pan is slid beneath the coupling, a handle 18^d being connected to the pan and projecting without the side of the casing for sliding the pan.

A pan 18^e is arranged upon the rear side of the partition 18, said pan 18^e being attached to the pan 18^b, the partition being slotted to permit the attachment and movement of the said pan 18^e. When it is desired to start the heater, the pans are filled with oil from the supply-pipe, then lighted and afterward slid back beneath the pipe and chamber, thus vaporizing the oil that continues to flow into the chambers, and the vapor issuing out of the burners or perforations 15^b will be ignited and the vaporization and combustion continued until the supply be shut off. When the oil is shut off, the pan 18^b is slid beneath the valved coupling to catch any drippings that may take place. A bearing plate or cover 19 covers the forward compartment, said plate extending from one side of the casing to the other, and at its center is provided with a depression 19^a, adapted to receive a soldering-iron. The oil-supply pipe passes through this plate, as clearly shown. A detachable hood 20 is arranged upon the casing and covers the burners, said hood having a door 20^a hinged at its forward end. If desired, this door may be capable of a swinging and a longitudinal sliding movement in consequence of the peculiar manner in which it is connected to the hood, the upper portion of the door having an elongated slot or guide portion 20^b, in which works the rod 20^c, rigid with the hood and forming the forward upper edge of the same. The top of the hood is provided with a circular opening 21, which is closed by a lid 22, said lid having a circular opening 23, closed by a cap 24, which is pivoted to the lid 22.

The device may be used either with or without the hood.

In operation, the reservoir is filled or nearly filled with oil, and the air-pump is then operated, compressing considerable air within the reservoir. The valve in the coupling 13^a is opened and oil forced out of the same. The pans 18^b and 18^e are now filled with oil, slid back, and lighted. This vaporizes the fuel in the feed-pipes and chambers, and the vapor issuing out of the burners is ignited and further vaporization and combustion takes place, the flames being projected toward the center of the heater, sufficient air being supplied through the perforations in the base and side to support combustion. The doors of the casing may be either opened or closed, and the hood may be used on the casing or detached, as desired. In either cases the soldering iron or irons are slid upon the bearing-plate in the depression of the same and allowed to rest upon the head of the T-coupling connecting the chambers. When the hood is on, the hinged door permits the rapid insertion of the iron and also the withdrawal of the same. When it is desired to heat a soldering-pot, the hood is necessarily used, the pot being inserted in the opening in the top of same.

On account of the casing and hood the heater is adapted for use out of doors in all kinds of weather.

Having thus described our invention, what we claim is—

1. In a device of the character described, the combination, with a base having supporting sides, one of which is perforated, the base being perforated at the end remote from the perforated side, burners arranged upon the perforated end of the base, and an oil-reservoir arranged upon the opposite end of the base and connected with the burners, substantially as shown and described.

2. In a device of the character described, the combination, with a base, of an oil-reservoir arranged thereon, a burner or burners arranged upon the opposite end of the base, and a detachable hood having a hole and cover and a door, all arranged substantially as shown and described.

3. In a device of the character described, the combination, with a base perforated at one end, of the burners arranged longitudinally upon opposite sides of the perforations, an oil-reservoir connected with the burners, a casing surrounding the burners, a transverse partition arranged in the casing and forward of the burners, and a drip-pan arranged upon each side of the said partition, substantially as shown and described.

4. In a device of the character described, the combination, with the base, of the casing arranged thereon, the longitudinal burners having perforations produced in the adjacent sides and near their upper edges, a transverse partition perforated and slotted, as described, a T-shaped pipe connecting the burners and arranged contiguous to the perforations in the partition, an oil-supply pipe arranged forward of the partition and registering with the perforation in the same and the connecting-pipe, a valve in the supply-pipe, and the drip or flash pan arranged to slide in the seat in the partition, substantially as shown and described.

5. The combination, with a base, of an oil-reservoir, longitudinal burners arranged parallel to each other near one end of the base, said burners having perforations produced in their opposing faces near their upper sides, one of said burners having perforations produced in its upper side, an oil-supply pipe connected with the reservoir and over the perforated upper side, a valved coupling connected with the forward end of said pipe, a transverse partition arranged forward of the burners, said partition being perforated opposite the valved coupling and slotted at its bottom, a T-shaped connecting-pipe connecting the burners, its open end being contiguous to the perforation in the partition, a drip-pan arranged upon both sides of the partition and sliding in the slot in the same, and a vertical plate attached to the pan, substantially as shown and described.

6. The combination, with an oil-reservoir, the burners, the casing surrounding the burners, the doors hinged at the opposite sides, the gravity-catch adapted to hold the same, the detachable hood provided with a hole and cover, and a vertically-swinging door, all arranged substantially as shown and described.

7. The combination, with the longitudinal burners, of the casing, the transverse partition, the doors, the rest-plate, and the detachable hood provided with a vertically-swinging door at its forward end, all arranged substantially as shown and described.

8. In a device of the character described, a detachable hood adapted to be placed over a burner, said hood having a hole and cover and a vertically-swinging and longitudinally-movable door at its forward end, substantially as shown and described.

9. The combination, with a base, of an oil-reservoir arranged thereon, a pump arranged longitudinally beneath the said base, a valve connected with the reservoir, a flexible tube connecting the pump and valve, a burner arranged upon the base, and an oil-supply pipe connecting the reservoir and burner, substantially as shown and described.

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