P. R. FLAMM.

MECHANIC'S FURNACE.

APPLICATION FILED JUNE 12, 1911.

1,036,086.

Patented Aug. 20, 1912.

2 SHEETS—SHEET 1.

Fig. 1.

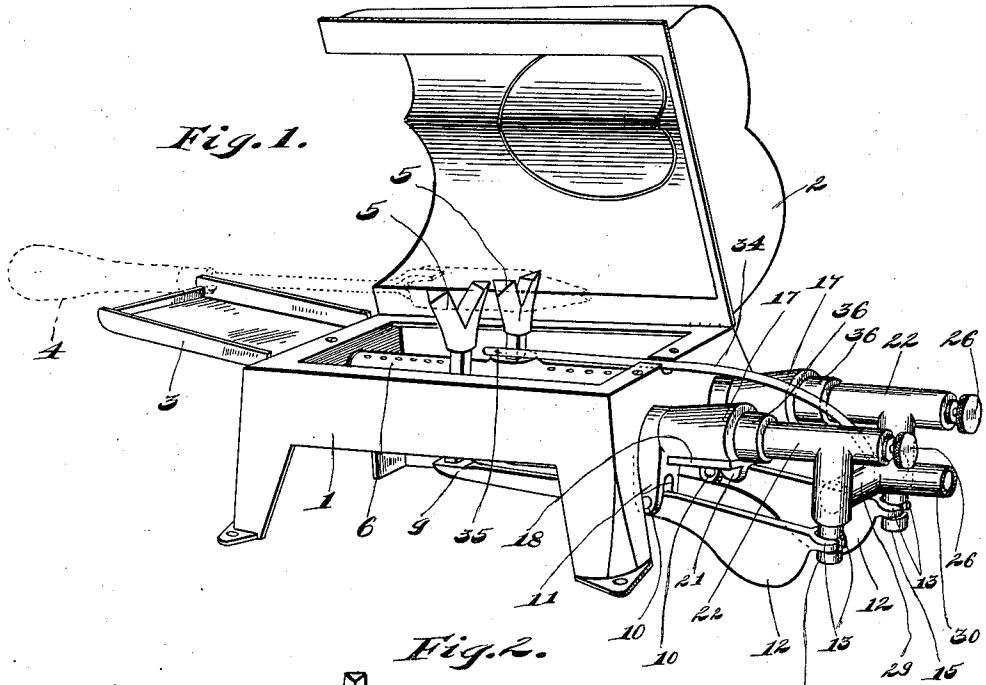
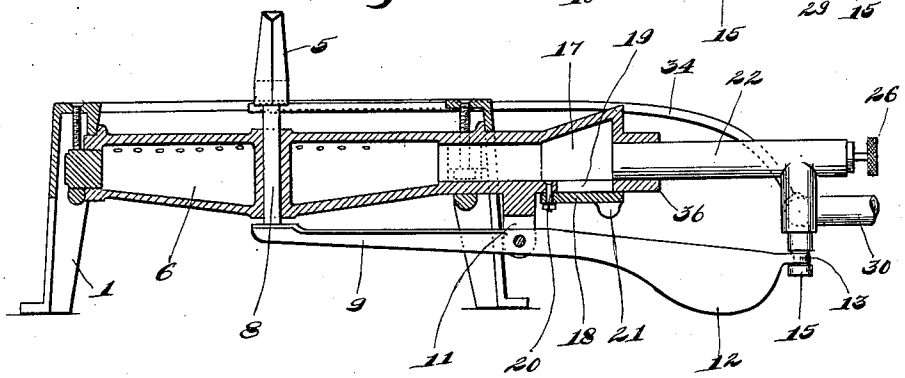


Fig. 2.



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2 SHEETS—SHEET 2.

Fig. 3.

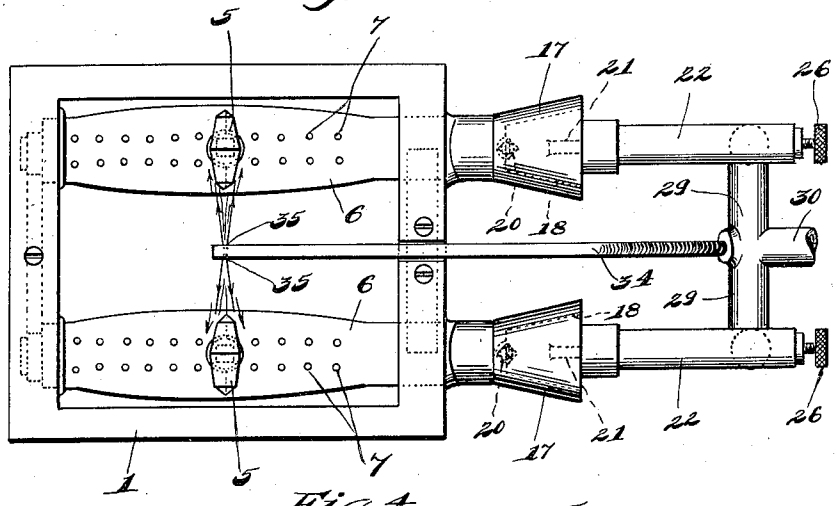


Fig. 4.

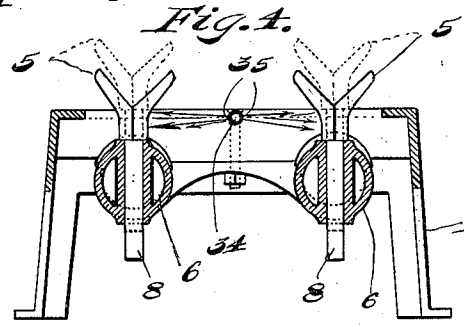


Fig. 5.

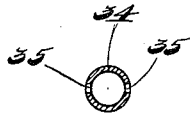
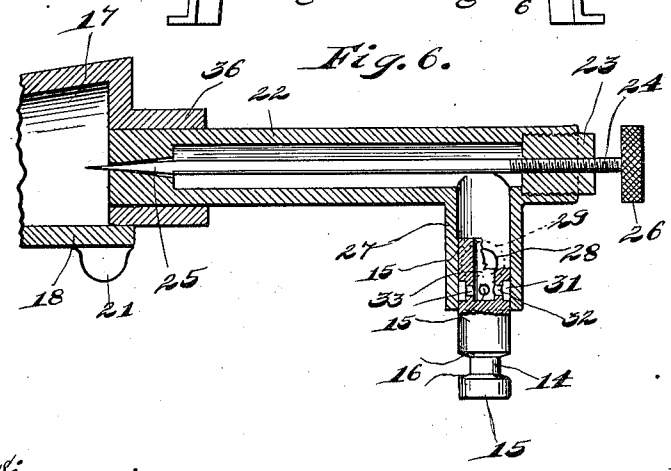


Fig. 6.



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UNITED STATES PATENT OFFICE.

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MECHANIC'S FURNACE.

1,036,086. Specification of Letters Patent. **Patented Aug. 20, 1912.**

Application filed June 12, 1911. Serial No. 632,589.

To all whom it may concern:

Be it known that I, PAUL R. FLAMM, a citizen of the United States, and a resident of the city of North Chicago, county of Lake, and State of Illinois, have invented certain new and useful Improvements in Mechanics' Furnaces, of which the following is a specification.

My invention relates to improvements in mechanics' furnaces and has for its object the provision of a furnace of this character which shall be simple of construction and efficient in operation.

The invention consists in the combinations and arrangements of parts hereinafter described and claimed.

My invention will be best understood by reference to the accompanying drawings forming a part of this specification, and in which,

Figure 1 is a perspective view of a mechanic's furnace embodying my invention, Fig. 2 is a section thereof taken through one of the burners, Fig. 3 is a top plan view of the furnace, Fig. 4 is a transverse section thereof, Fig. 5 is an enlarged transverse section of a pilot light tube employed in the device, and Fig. 6 is an enlarged detail longitudinal section showing the construction of a needle-valve and piston valve provided in the furnace.

The preferred form of construction as illustrated in the accompanying drawings comprises a frame or body 1 having a cover 2 as illustrated in Fig. 1. A shelf 3 extending from one end of the body 1 is designed to support one end of a soldering iron 4 as indicated by dotted lines in Fig. 1. The other end or copper of the soldering iron 4 is supported by a Y-shaped tool holder or support 5, a pair of these supports being provided in this furnace so that when one soldering iron is being used others may be heated. Each tool support 5 is arranged above the center of a burner 6, the latter having a series of gas perforations or jets 7 as illustrated in Fig. 4. Each tool support 5 is mounted at the upper extremity of a vertically movable stem 8, the guide therefor being cast integral with a burner 6 as shown in section in Figs. 2 and 4. The lower end of each stem 8 projects below a burner 6 and contacts with the upper surface of one end of an oscillatory lever 9 which is fulcrumed as at 10 between depending lugs 11 formed integral with one end of the burner 6. The other end 12 of the lever 9 is enlarged and therefore weighted so as to give assurance that this end of the lever will be normally in the position shown in Fig. 2. The end 12 of the lever should not however be so heavy as to counter-balance the weight of a soldering iron 4, since the latter is intended to elevate the end 12 when placed upon a tool support 5. The end 12 of each lever 9 is provided with a small fork 13 which is adapted to engage a reduced portion 14 provided in the stem or projecting end of a piston valve 15, there being shoulders 16 at each end of the reduced portion 14 which opposite surfaces of the fork 13 are adapted to engage for elevating or depressing the valve 15. These shoulders are slightly conical as illustrated in Fig. 6, this formation being productive of less friction than were the same disposed at right angles to the exterior surface of the reduced portion 14.

The burners 6 are hollow as illustrated in the several views and each is provided at one end with an air-and-gas mixing chamber 17 which is provided on its under side with a swiveled lid 18 which is designed to regulate the size of the opening 19 as shown in Fig. 2. This lid is pivoted by means of a bolt 20 and is operated by means of a small projection 21 which serves as a handle. This lid opens to atmosphere, consequently the amount of atmospheric air which may be admitted to the air-and-gas mixing chamber 17 is easily controlled or regulated by swinging said lid. The advantage of the opening 19 being on the under side of the chamber 17 is that less dust and other foreign particles will be drawn into the burner. Into each chamber 17 is inserted a hollow plug 22 having an axial plug 23 screwed into the exterior end thereof. A needle-valve 24 is screwed into the plug 23 and provided with a conical point 25 for regulating the flow of fuel as will be readily understood by those skilled in the art. The needle-valve 24 is turned by projecting knurled handle 26 by means of which the needle-valve may be adjusted for securing the correct amount of fuel for the combustible mixture in the chamber 17. Formed integral with each plug 22 and depending therefrom adjacent the exterior end thereof is a valve cylinder 27 in which is mounted for reciprocatory movement the piston valve 15 as illustrated in Fig. 6. At one side of

the valve cylinder 27 a gas port 28 is provided which communicates with a right angular branch 29 of a main gas supply pipe 30. The port 28 is arranged in the path of the valve 15 and when the latter is in the lowered position as illustrated in Fig. 6 communication of the valve cylinder 27 with the pipe 29 is cut off, consequently no gas will flow to the burners 6 when the valve is in this position. In order that gas may flow through the port 28 into the cylinder 27 the valve 15 must be elevated so as to bring a circumferential groove 31 formed therein into registration with said port 28, whereupon gas will flow from said port, thence into said groove and thence through radial perforations 32 into an axial bore 33 which is in open communication with the interior of the cylinder 27 as clearly illustrated in Fig. 6. The valve 15 is normally held in a position for closing the port 28 by means of the weighted end 12 of the lever 9 as hereinbefore described. Upon placing a tool on a tool support 5 it is obvious that the valve 15 will be instantaneously elevated for admitting gas to the burner. Were no means provided for lighting the gas when turned on to a burner 6 more or less time will be lost by the operator in lighting same, hence a pilot light is provided which will ignite the gas escaping from the perforations 7 instantaneously. This pilot light comprises a small tube 34 which is disposed intermediate the burners 6 and arranged in constant communication with the gas supply in the pipe 30. The tube 34 terminates midway between the tool supports 5, and in order that the flame of the pilot light shall be capable of lighting the gas escaping from either burner 6, a pair of oppositely disposed minute horizontal perforations 35 are provided adjacent the terminal of the tube 34. In operation the pilot light flames are divided by the tool supports 5 in order that a portion of the flame may be directed to the perforations 7 located on each side of a tool support as illustrated in Fig. 3. The arrows in this figure illustrate the flow of the incandescent particles of the pilot flame. In Fig. 5 an enlarged sectional view illustrates clearly the perforations 35 of the tube 34. The plugs 22 carrying the needle-valves 24 and piston valves 15 are removably secured to the air-and-gas mixing chambers 17 by being loosely fitted in bosses 36 extending longitudinally from said chambers as illustrated in Fig. 2. It is not necessary for the successful use of the furnace that these plugs should be removable, but in order that the needle-valve openings may be easily cleaned this construction is preferred.

The operation of the furnace is as follows: Assuming that the gas pipe 30 is provided with gas under pressure and that the pilot light is burning, then in order to heat a soldering iron 4 it is only necessary to place the same upon a tool support 5, whereupon the piston valve 15 will be elevated, thus establishing communication of a burner 6 with the source of gas supply. Gas upon flowing to the burner 6 will be instantly ignited by the pilot light and will continue to burn until the soldering iron 4 is removed from the tool support.

A soldering iron furnace of the construction set forth is simple of construction and convenient in use.

While I have illustrated and described the preferred form of construction for carrying my invention into effect, this is capable of variation and modification without departing from the spirit of the invention. I therefore do not wish to be limited to the precise details of construction set forth, but desire to avail myself of such variations and modifications as come within the scope of the appended claim.

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

In a device of the class described, the combination of a pair of horizontally disposed burners; a horizontally disposed tubular member leading to each of said burners; a needle valve in each of said tubular members; a vertically disposed valve chamber extending from each of said tubular members; a cross-pipe connecting said valve chambers; a supply pipe leading to said cross pipe; a pilot tube connecting with said cross pipe and leading to said burners; a valve in each of said valve chambers controlling the openings of said cross pipe into said valve chambers; and tool operable means for operating said valves, substantially as described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

PAUL R. FLAMM.

Witnesses:
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