

C. L. V. MUNDHENK & R. T. NISWONGER.

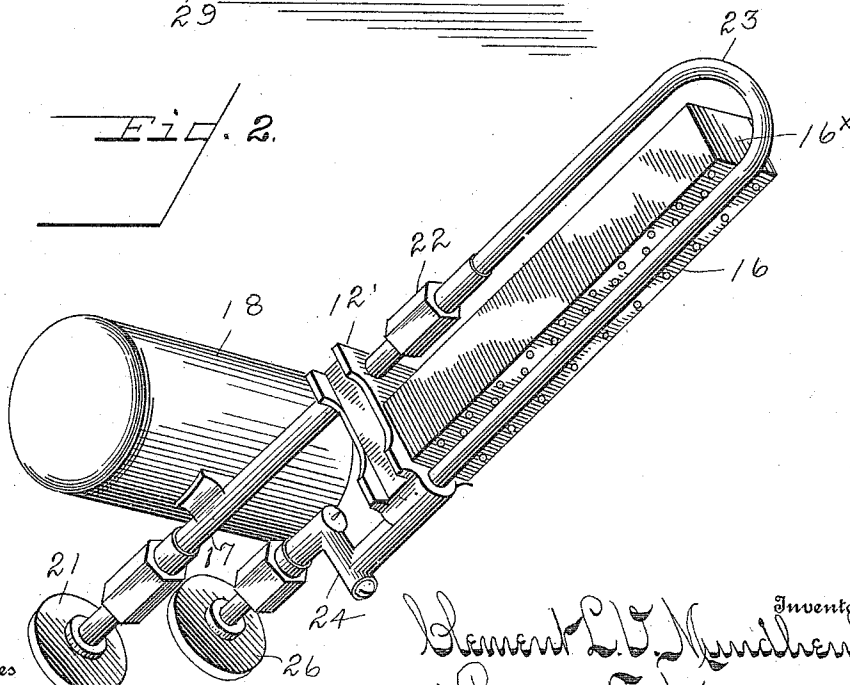
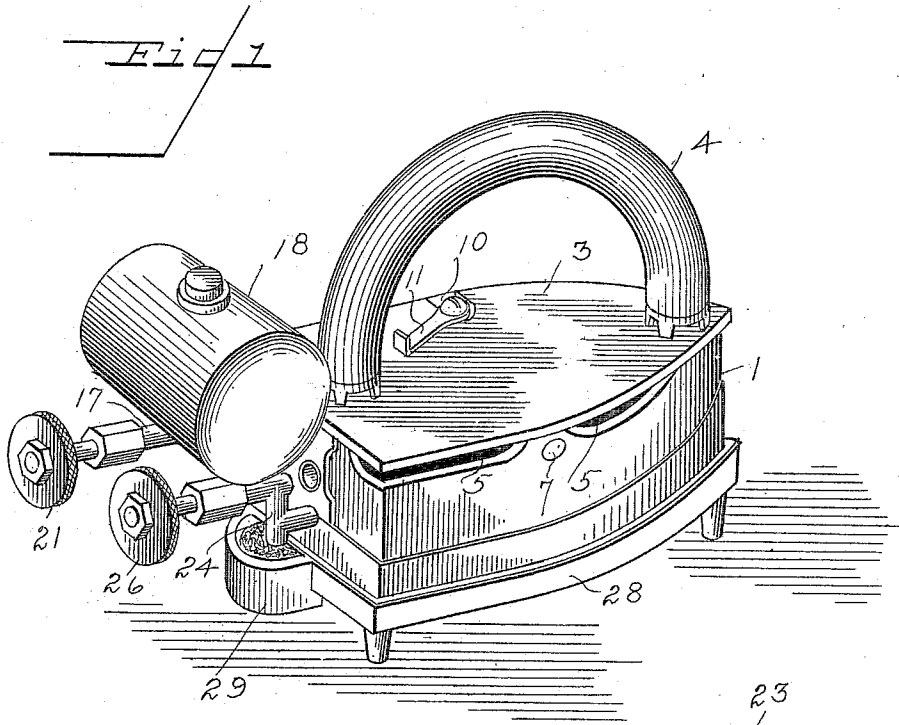
SELF HEATING IRON.

APPLICATION FILED DEC. 13, 1909.

985,922.

Patented Mar. 7, 1911.

3 SHEETS-SHEET 1.



Witnesses
H. H. Dickinson
B. McIntire

Inventors
Clement L. V. Mundhenk
and Roman T. Niswonger
By J. L. Walker Attorney

C. L. V. MUNDHENK & R. T. NISWONGER.

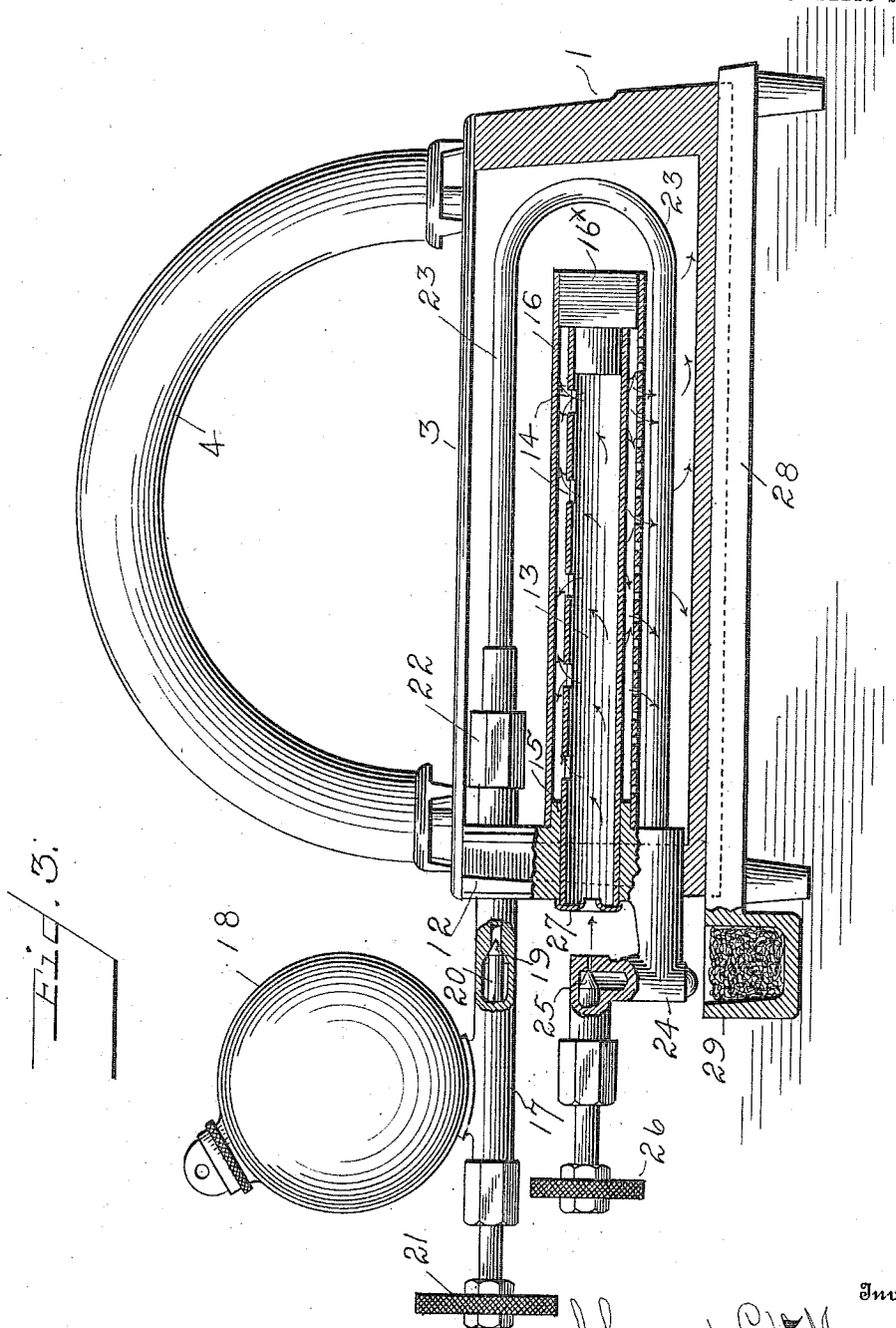
SELF HEATING IRON.

APPLICATION FILED DEC. 13, 1909.

985,922.

Patented Mar. 7, 1911.

3 SHEETS—SHEET 2.



Witnesses
N. H. Dickinson
B. McIntire

Inventors
Clement L. V. Mundhenk
Roman T. Niswonger
By J. L. Walker Attorney

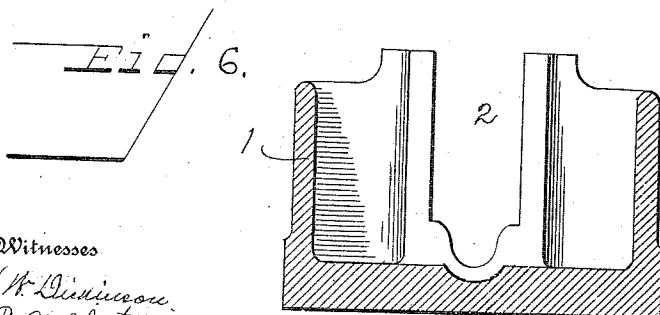
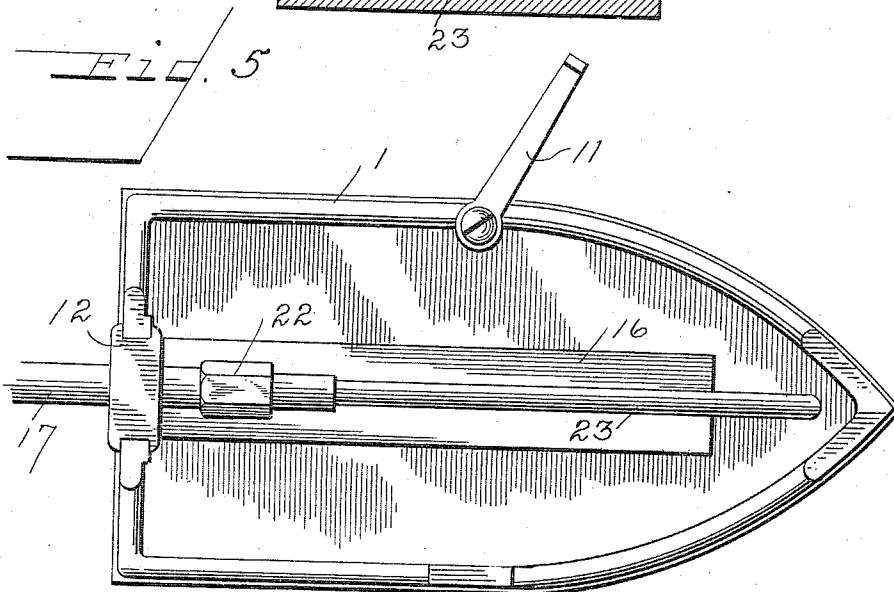
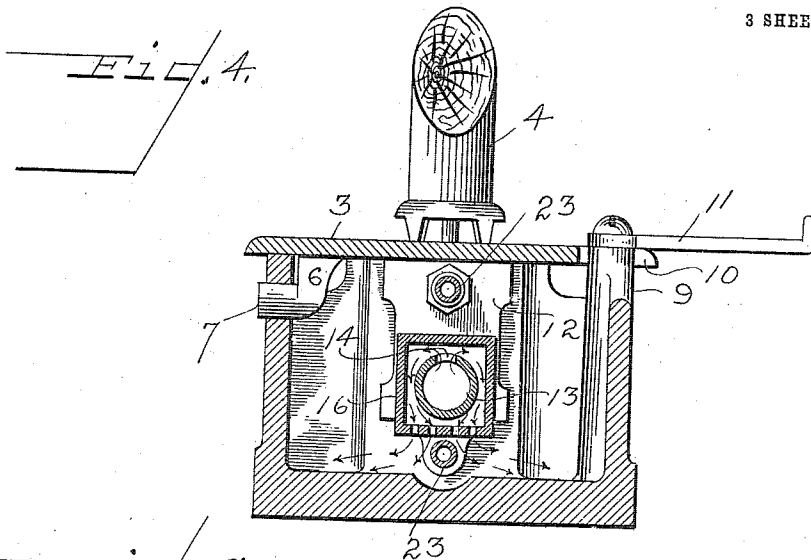
C. L. V. MUNDHENK & R. T. NISWONGER.
SELF HEATING IRON.

APPLICATION FILED DEC. 13, 1909.

985,922.

Patented Mar. 7, 1911.

3 SHEETS-SHEET 3.



Witnesses
H. H. Linderson
B. McIntire

Inventors
C. L. V. Mundhenk
R. T. Niswonger
J. L. Walker Attorney

UNITED STATES PATENT OFFICE.

CLEMENT L. V. MUNDHENK AND ROMAN T. NISWONGER, OF DAYTON, OHIO; SAID
NISWONGER ASSIGNOR TO SAID MUNDHENK.

SELF-HEATING IRON.

985,922.

Specification of Letters Patent.

Patented Mar. 7, 1911.

Application filed December 13, 1909. Serial No. 532,843.

To all whom it may concern:

Be it known that we, CLEMENT L. V. MUNDHENK and ROMAN T. NISWONGER, citizens of the United States, residing at Dayton, in the county of Montgomery and State of Ohio, have invented certain new and useful Improvements in Self-Heating Irons, of which the following is a specification.

Our invention relates to burners for fluid fuel, particularly a burner adapted to the use of liquid fuel, such as gasoline, alcohol, and similar fuels, but which may also be employed with any combustible heat producing gases.

The invention is herein shown and described as applied to a self heating smoothing or sad iron, but is not limited to such use.

The object of the invention is to simplify the structure, as well as the means and mode of operation of such devices, whereby they will not only be cheapened in construction, but will be rendered more efficient and safe in operation and unlikely to get out of repair.

A further object is to provide an improved form of burner for using any suitable liquid fuel, which will secure an even distribution of flame over a working surface of considerable area, and whereby a given surface may be heated substantially equally throughout.

With the above primary and other incidental objects in view as will more fully appear in the specification, the invention consists of the features of construction, the parts and combinations thereof, and the mode of operation or their equivalents, as hereinafter described and set forth in the claims.

Referring to the drawings, Figure 1 is a perspective view of a self heating iron fitted with the burner. Fig. 2 is a perspective view of the burner. Fig. 3 is a longitudinal sectional view of the iron and burner. Fig. 4 is a transverse sectional view thereof. Fig. 5 is a plan view with the cover of the iron removed. Fig. 6 is a transverse sectional view of the body of the iron with the burner removed.

Like parts are indicated by similar characters of reference throughout the several views.

In the drawings, 1 is the body of the iron, in connection with which the burner is illus-

trated, comprising a hollow box like receptacle of the usual flat iron shape, having in the rear or flat end a vertical slot or recess 2. A cover plate 3 is provided, to which is attached a handle 4 of wood or other material, preferably of material non-conductive of heat. The sides of the body 1 are cut away or recessed as at 5 to provide openings for the escape of the products of combustion, leaving intermediate projecting portions at the front and rear, and upon either side, upon which the cover plate 3 rests.

Projecting from the under side of the cover plate 3 is a lug 6 terminating in a lateral stud 7 adapted to engage an opening in one of the sides of the body 1 as shown in Figs. 1 and 4. At the opposite side of the body portion 1, is a stud 9 registering with a notch 10 in the cover plate 3, to the top of which is pivoted an arm 11, which when turned inward to a position over the cover plate as shown in Fig. 1, binds upon the cover plate and secures it in position. This is the usual self heating iron construction, and forms no part of the present invention.

The burner which is removable from the body portion of the iron, comprises a gibbed head 12, adapted to slide within the recess or slot 2 of the body portion. Extending through the head 12, and projecting within the body portion 1 is a tubular member 13 having openings 14 in the upper surface thereof.

Mounted on a boss 15 surrounding the tubular member 13 and projecting inward from the head 12, or otherwise secured to the head 12 is a second tubular member 16 inclosing the first mentioned tubular member 13, and provided in its lower or bottom surface with a plurality of comparatively small openings as shown in Fig. 3 and more particularly in Fig. 2.

In the drawings the inner member 13 has been shown as cylindrical, while the outer member 16 is shown as square. It is obvious that both might be formed cylindrical and concentric, or of other cross sectional form; however the outer member 16 is preferably formed flat on its under or perforated side or bottom, whereby said perforated side will be substantially parallel with the working surface of the iron. Both the tubular members 13 and 16 are closed at their extremities, preferably by a single plug member 16*, although separate closing means

may be employed for the respective tubular members. It will be noted that the openings or perforations of the tubular members 13 and 16 are on opposite sides thereof, that 5 is the openings of the former are in the top thereof, while those of the latter are in the bottom. Extending in opposite directions from the head 12 above the said tubular members 13 and 16 is a conduit 17 to the 10 outward projecting portion of which is attached a fuel reservoir 18 communicating with the conduit. The inner extremity of the conduit is provided with a valve seat for the valve 19, the stem 20 of which extends 15 through the conduit 17 and carries the hand wheel 21 by which the valve 19 is controlled. The valve 19 controls the fuel supply. A coupling 22 screw threaded upon the extremity of the conduit 17 permits the 20 cleaning of the conduit 17 and at the same time serves to connect with the conduit a U shaped tube 23 which extends forward above the burner member 16 and after making a reverse bend returns to the head in close 25 proximity to the under or perforated side of the member 16, as shown in Fig. 3.

The tube 23 communicates with a conduit 24 either formed integral with the head 12, or separable therefrom and attached by 30 screw threading or otherwise. Located in the conduit 24 is a needle valve 25 controlling an orifice substantially in axial alignment with the inner tubular member 13, the said needle valve being controlled by a hand 35 wheel 26. When alcohol is being used as fuel, a removable perforated cap 27 is secured upon the extremity of the inner tubular member 13, as shown in Fig. 3, but when gasoline is used this cap 27 is removed. A 40 stand or support 28 is provided on which the iron may rest when not in use. At the rear of the stand 28 and immediately under the conduit 24 is a receptacle 29 containing any absorbent material, but preferably loose 45 asbestos. To start the iron, the material within the receptacle 29 is charged with alcohol, gasoline or other inflammable material and ignited. The flame from the 50 burning fuel in the receptacle 29 passing about the conduit 24, heats the conduit and transforms the fuel previously admitted to the U-shaped tube 23, through the valve 20, into a vapor, which admixed with air is projected into the inner tubular member 13. 55 The combustible gas formed by the mixture of air and vapor passes from the inner member 13 through the top openings 14 as indicated by the arrows into the outer tubular member 16 in which the gas passes downward about the exterior of the inner member 13 and is discharged through the perfora- 60 tions in the under side of the outer member 16 where it is ignited. Both the burner members 13 and 16 being closed at their inner 65 ends, and each being provided with

a plurality of perforations distributed throughout their length, causes the body of gas to be divided and subdivided and thereby evenly distributed throughout the burner. The even distribution of the gas causes 70 an even distribution of flame over a considerable area of the interior of the bottom or working surface of the body portion 1. The flame emerging from the perforations of the member 16 comes directly in 75 contact with the return branch of the U shaped tube 23, heating the tube to high temperature, vaporizing the liquid fuel passing therethrough as before mentioned. The even distribution of the gas and flame 80 as mentioned causes the working surface of the iron to be evenly heated throughout increasing the efficiency of the device.

From the above description it will be apparent that there is thus produced a fluid 85 fuel burner possessing the particular features of advantage before enumerated as desirable, but which obviously is susceptible of modification in its form, proportion, detail construction, and arrangement of parts 90 without departing from the principle involved, or sacrificing any of its advantages. Having thus described our invention we claim:

1. In a device of the character described, 95 the combination with a hollow body portion, of a burner located therein comprising, a head, an inner tubular member supported on said head open at its outer end and closed at its inner end, said inner member having 100 a plurality of openings in the upper surface thereof, an outer tubular member, inclosing the inner member and closed at its ends, the said outer member having a plurality of openings in its under surface, a fuel 105 tank, a conduit leading therefrom and discharging into the inner member.

2. In a self heating flat iron, a hollow body of flat iron form having a vertical slot in one wall thereof, a removable head 110 adapted to fit within the slot, a burner member carried by the head and projecting within the hollow body comprising two tubular members one projecting within the other and both closed at their inner ends, each of said 115 tubular members having a plurality of openings distributed throughout the length thereof, the outer member having the openings thereof directed downward toward the bottom of the hollow body, the openings of the 120 inner member being directed upward, a conduit extending through the removable head and carrying on the outer end thereof a fuel tank, a portion of the conduit within the hollow member extending between the 125 burner and the bottom of the hollow body, said conduit communicating with the burner.

3. In a device of the character described, the combination of a hollow body portion, a fuel tank, a double walled tubular burner 130

member closed at its inner extremity, and having openings in the under surface of the outer wall thereof, a U shaped conduit leading from the fuel tank to the burner within the bight of which the burner member projects, whereby one arm of said conduit is placed in close proximity to the openings of the burner.

4. In a device of the character described, the combination with a hollow body portion, having a smooth exterior working surface adapted to be brought into contact with the work of a fuel tank, a burner including an inner and an outer tubular member the adjacent surface of the outer tubular member and the working surface of the body portion being substantially parallel, a plurality of openings distributed throughout that surface of the outer tubular member, adjacent to the working surface of the hollow body portion a plurality of openings in the inner tubular member located substantially diametrically opposite those of the outer member, and a conduit leading from the tank and discharging into the burner.

5. In a device of the character described, the combination with a body portion, of a burner including an inner and an outer tubular member, the outer member having a substantially flat perforated under surface, the inner member being perforated at points out of registry with the perforations of

the outer member, both said members being closed at their inner extremities, a fuel tank and a conduit leading therefrom to the burner.

6. In a device of the character described, the combination with a supporting member, of a burner comprising an inner tubular member having a plurality of perforations distributed throughout its length, an outer tubular member surrounding the first mentioned tubular member also provided with a plurality of perforations distributed throughout its length, the perforations of one of the members being out of registry with those of the other member, a fuel tank, a conduit leading therefrom and discharging into the burner, the said conduit having therein a substantially U-shaped bend in the bight of which the said tubular burner members project whereby the legs of the U-shaped portion of the conduit will extend on opposite sides of the burner and substantially parallel thereto.

In testimony whereof, we have hereunto set our hands this 2nd day of December, A. D. 1909.

CLEMENT L. V. MUNDHENK.
ROMAN T. NISWONGER.

Witnesses:

HENRY F. NOLAN,
F. L. WALKER.