

H. E. LUCAS.
GAS IRON.
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934,923.

Patented Sept. 21, 1909.

Fig. 1.

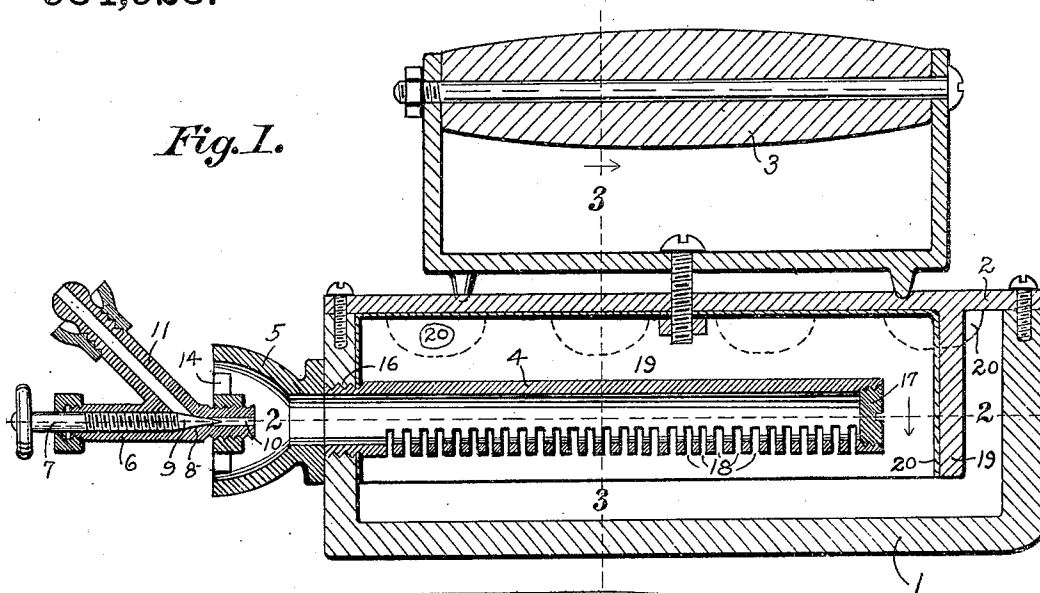


Fig. 2.

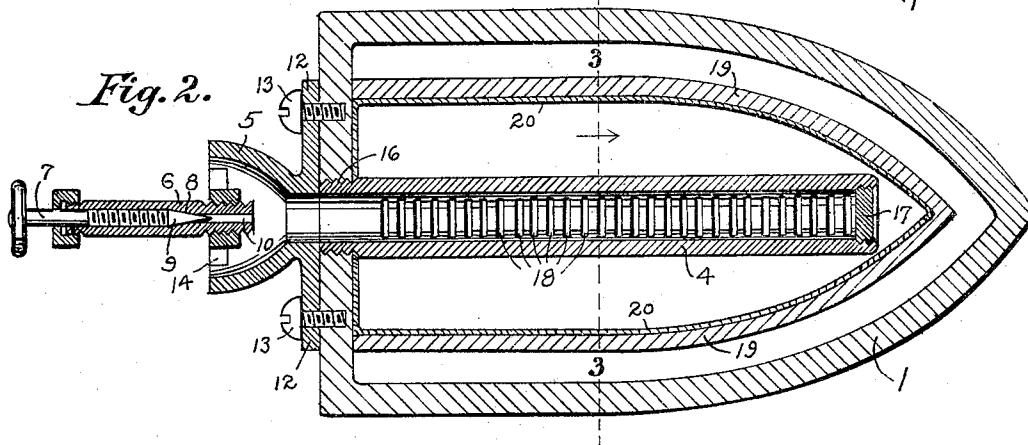
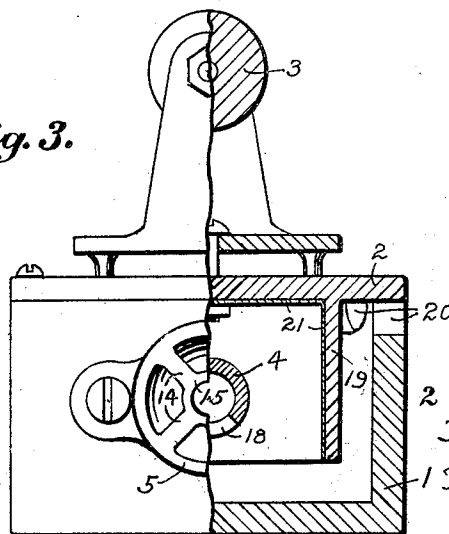


Fig. 3.



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UNITED STATES PATENT OFFICE.

HOWARD E. LUCAS, OF MASSILLON, OHIO, ASSIGNOR OF ONE-HALF TO THEODORE C. McQUATE, OF CANTON, OHIO.

GAS-IRON.

934,923.

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To all whom it may concern:

Be it known that I, HOWARD E. LUCAS, a citizen of the United States, residing at Massillon, in the county of Stark and State of Ohio, have invented a new and useful Improvement in Gas-Irons, of which the following is a specification.

The invention relates to a smoothing iron adapted to be heated by a gas flame burning within the body of the iron; and the objects of the improvement are to provide a simple form of valve and mixer for controlling and admitting the supply of gas and air to the burner, and to provide flanges in the iron for shielding the flame and deflecting it downward to impinge and heat the bottom of the iron.

The primary objects of the improvement, thus set forth in general terms, and other benefits and advantages, are attained by the construction and arrangement of a preferred embodiment of the invention, illustrated in the accompanying drawings, forming part hereof, in which—

Figure 1 is a longitudinal section in the median vertical plane of the iron, showing the valve and mixer attached thereto; Fig. 2, a horizontal section on line 2—2, Figs. 1 and 3; and Fig. 3, a rear end elevation of the iron on one side and a cross section on line 3—3, Figs. 1 and 2, on the other side, without the valve.

Similar numerals refer to similar parts throughout the drawings.

The principal parts of the iron include the hollow body 1, the cover 2, the handle 3, the burner 4, the mixer 5, the valve case 6 and the valve stem 7.

The cone-shaped valve seat 8 is formed in the valve case in which the correspondingly cone-shaped valve proper 9 formed on the forward end of the stem is adapted to fit, and the stem is arranged to screw in and out of the case to seat and unseat the valve. The axial gas port 10 is provided in the case and extends from the apex of the seat cavity to the free end of the valve in the mixer.

The gas inlet pipe 11 is formed or attached on one side of the case and is preferably inclined rearward at an angle of about 45 degrees thereto, to the rear end of which pipe a suitable flexible supply tube (not shown) is adapted to be joined. The gas inlet pipe opens into one side of the cone-shaped seat

cavity, so that a very slight movement of the valve proper to and from its seat serves to open, regulate or close the valve; and it is not necessary to reduce the size of the stem proper of the valve to make a way for the gas.

The mixer 5 is shaped as a bell and is secured to the rear end of the iron body by means of the flanges 12 and the screws 13. The larger end of the bell is directed to the rear and the open frame or spider 14 is formed or attached therein, which spider includes the axial bearing 15 into which the forward end of the valve is adapted to be screwed. The forward smaller end of the mixer is continuous with the rear end of the burner 4 which latter is screwed into the aperture 16 formed in the rear wall of the iron body.

The burner 4 is preferably made in the form of a tube, the free end of which extends well forward in the cavity of the iron body and is closed by means of the plug 17. The transverse slots 18 are provided in the lower side of the burner through which the mixed gas and air are adapted to flow for burning in the iron cavity. It is evident that by reason of the bell-shaped form of the mixer, a sufficient amount of air is admitted through its larger rear end to mix with the gas to cause complete combustion.

The depending flanges 19 are formed or attached on the iron cover, and these flanges are preferably located parallel with the side walls of the iron body and extend downward on each side of the burner and forward from the rear wall to a junction near the forward end of the iron, thus forming a complete shield around the burner excepting only on the under side, and leaving a comparatively narrow interval between the flanges and the side and forward walls of the iron body. The openings or vents 20 are provided in the upper portions of the side and forward walls of the iron through which the products of combustion are adapted to escape.

It is evident that the depending flanges will shield the flame from any undesirable air currents which might be blown or sucked in through the exit openings; and that the flame from the burner will first flow downward to impinge the bottom of the iron, thence laterally and forward underneath the edges of the flanges to impinge the side and

forward walls of the iron, and thence upward in the interval between said walls and the flanges to an outlet through the openings in the upper portions of said walls. It is
5 furthermore evident that by reason of the tortuous course which the flame must follow from the burner to the exits, the combustion will have been fully completed, and that no live flame will ever issue from the vents.

10 The under side of the cover and the inner side of the rear wall between the flanges and the inner sides of the flanges, which parts form what may be called a combustion chamber, are preferably lined with asbestos 21 to
15 prevent the radiation of heat through these walls, thereby insuring that substantially all the heat caused by the combustion of the gas will be deflected downward to impinge the bottom of the iron.

20 What I claim as my invention, and desire to secure by Letters Patent, is—

1. A smoothing iron having a hollow body with a gas burner therein and having open-

ings in the upper portions of its walls, and flanges depending from the cover on each side of the burner and arranged to shield the flame from the openings and to deflect the flame first downward to impinge the bottom and thence upward between the walls and the flanges toward the openings. 25 30

2. A smoothing iron having a hollow body with a gas burner therein and having openings in the upper portions of its walls, and flanges depending from the cover on each side of the burner and arranged to shield the flame from the openings and to deflect the flame first downward to impinge the bottom and thence upward toward the flanges and the openings, the combustion chamber formed by the flanges being lined with asbestos to prevent a radiation of heat therefrom. 35 40

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Witnesses:

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