



# UNITED STATES PATENT OFFICE.

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## SAD-IRON.

SPECIFICATION forming part of Letters Patent No. 669,162, dated March 5, 1901.

Application filed October 6, 1900. Serial No. 32,255. (No model.)

*To all whom it may concern:*

Be it known that J. PETER C. GIVEN, a citizen of the United States, residing at Wooster, in the county of Wayne and State of Ohio, have invented a new and useful Sad-Iron, of which the following is a specification.

My invention relates to an improvement in hollow sad-irons which are heated internally by gas generated from gasolene, and has for its objects the location of the generator without the iron-body, having a burner extending within the same, and having convenient and rigid attachment with the iron-body and with the supply-pipe passing there-through, the generator being constructed so it can be cleaned without emptying the gasolene from the reservoir or disturbing any of the connections, and so a low grade of gasolene can be used therein. I attain these objects by the mechanism illustrated in the accompanying drawings, in which—

Figure 1 is an isometric view of the entire sad-iron. Fig. 2 is a detached isometric view of the iron-body, the supply-pipe, the generator parts, and the burner-tube, all in relative position for assembling; and Fig. 3 is a vertical longitudinal section of the iron-body, with the supply-pipe, generator, and burner-tube all in place.

Similar numerals refer to similar parts throughout the several views.

The iron-body 1 is formed with a flat bottom of the usual shape, pointed at the fore end 2 and substantially square at the rear end 3, which extends beyond the upper part of the body, in which extension is formed the small well 4. The upper part of the iron-body 1 is hollow and open at the top, with notches 5 along the upper edge of the side walls 6 to afford ventilation when the cover-plate 7 is in place. The side walls 6 at their forward junction 8 are extended upward, so as to form the notches 9, adapted to receive and hold the forward end 10 of the cover-plate 7. Near the top of the forward junction 8 of the side walls is provided the smooth round aperture 11, adapted to pass the supply-pipe 12 and bind the curved portion thereof.

The rear wall 13 of the iron-body 1 projects above the side walls 6 to engage neatly the rear end 14 of the cover-plate 7. Near the upper edge of the rear wall 13 are the

threaded holes 15, either one of which is adapted to receive the screw 16, which is turned therethrough and into one of the slanting notches 17 in the rear end 14 of the cover-plate, by which adjustment the cover-plate is held in place. In the lower part of the rear wall 13 of the iron-body is provided the holes 18 for ventilating purposes. The rear wall 13 is also provided with the smooth round apertures 19 and 20, respectively, adapted to receive neatly and pass the burner-thimble 21 and the supply-pipe thimble 22, which project forward from the gas-generator 23. The burner-thimble 21 is smooth externally and threaded internally and is formed forward from the descending flange 24 at the forward end of the generator 23. The threaded aperture of the burner-thimble 21 continues through said flange 24 and receives the threaded rear end 25 of the burner-tube 26. The supply-pipe thimble 22 is threaded externally and internally and is adapted to receive the nut 27 externally and the threaded rear end 28 of the supply-pipe 12 internally. The gas-generator 23 is cylindrical in form, and being of larger diameter than the thimble 22 forms the shoulder 29 at the junction thereof.

To attach the generator 23 to the iron-body 1, the burner-tube 26 being screwed into the thimble 21, the same is inserted through the aperture 19 of the rear wall and the thimble 22 is inserted through the aperture 20 therein, bringing the shoulder 29 and the flange 24 against the rear face of the rear wall 13, in which position the generator is attached by turning the nut 27 onto the thimble 22 and snugly against the fore face of the rear wall 13. The thimble 21 is of such a length that its forward end is flush with the fore face of the rear wall 13. The supply-pipe 12 after being passed through the aperture 11 in the forward junction of the side walls can then be turned into the thimble 22, thus completing the attachment.

The gas-generator 23 is provided with the axial round cavity 30, which is continuous with the aperture of the thimble 22, which cavity is somewhat constricted in the middle part, forming the seat 31 for the slightly cone-shaped valve end 32 of the valve-screw 33, which is turned into the rear end of the cavity 30, a suitable packing-cap 34 being pro-

vided to prevent leakage. The forward end of the valve-screw 33 is formed of less diameter than the rear end and than the cavity 30, which forms a passage therearound. The  
 5 gas-chamber 35 is formed on the rear lower side of the generator 23, and the passage-way 36 descends from the cavity 30 to the round cavity 37 of the gas-chamber. The cavity 37  
 10 of the gas-chamber is in line with the axis of the burner-thimble and the burner-tube 26 attached therein and is closed at its forward end by the wall 38, excepting only the minute  
 15 exit-hole 39, which is also in the same axial line. The plug-screw 40 is turned into the rear end of the cavity 37 and may be used to close the passage-way 36 or the exit-hole 39  
 20 by turning its flat forward end 41 against the wall 38. The flow of gasolene or gas through these parts can of course be regulated by adjustment of this screw, if desired.

The forward end of the supply-pipe 12 is curved upward and carries the gasolene-reservoir 42, the upward curve of the supply-pipe 12 being so located that in screwing its  
 25 threaded rear end 28 into the thimble 22 the curved portion will bind in the round aperture 11, and thus firmly hold the pipe and attached reservoir 42 in proper position. The forward end of the burner-tube 26 is closed  
 30 by the plug 43 and rows of apertures 44 along its lower side give vent to the gas, which is thus directed downward toward the bottom of the iron-body 1, and the handle 45 is attached to the cover-plate 7 by standards 46,  
 35 extended from the top thereof.

In use the plug-screw 40 is generally kept open—that is, turned out beyond the passage-way 36—and the flow of gasolene or gas checked or regulated by the valve-screw 33.

40 To generate gas, gasolene having been placed in the reservoir 42 the valve-screw 33 is turned open to allow the well 4 to partially fill with gasolene and then is closed again. The gasolene in the well is then ignited and

in burning heats the generator 23, so as to 45 make gas of the gasolene passing there-through. The valve-screw 33 may then be opened again and the gas passes through the various openings and out through the exit-hole 39. The pressure of the elevated reser- 50 voir 42 forces the gas forward into the burner-tube 26, mingling with oxygen on the way, and it may be ignited on emerging from the apertures 44 of the tube. This flame will then heat the supply-pipe 12, located there- 55 above, so as to generate gas from the gasolene passing therethrough.

The exit-hole 39 and the gas-chamber cavity 37 can be cleaned without emptying the reservoir by closing the end 32 of the valve-screw against its seat 31, which stops the flow of gasolene. The plug-screw 40 can then be turned out and the parts cleaned.

Having described my invention, what I claim as new, and desire to secure by Letters 65 Patent, is—

The combination of a hollow sad-iron, a supply-pipe, a gas-generator, an attaching-nut, and a burner-tube; the gas-generator having two projecting thimbles one above the other, 70 the upper one extending within the wall of the iron and being adapted to receive the supply-pipe and the attaching-nut, and the lower one ending flush with the inner face of the wall of the iron and being adapted to receive 75 the burner-tube; and the sad-iron having an aperture in its fore end adapted to pass the supply-pipe and bind the curved portion thereof, and apertures in its rear wall adapted to receive neatly said thimbles respec- 80 tively; substantially as specified.

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

PETER C. GIVEN.

Witnesses:

JOSEPH FREASE,  
 HARRY FREASE.