H. L. WELLS.

SAD-IRON.

No. 191,908. Patented June 12, 1877.

Fig. 3.

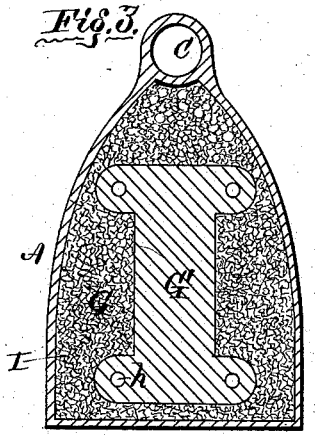


Fig. 2.

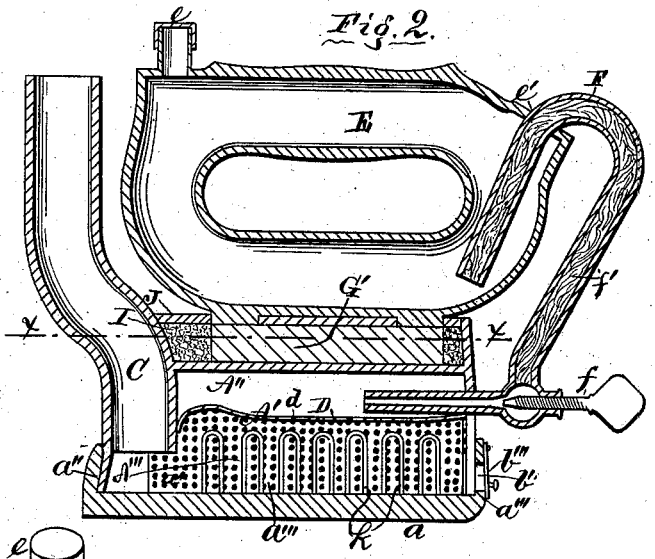
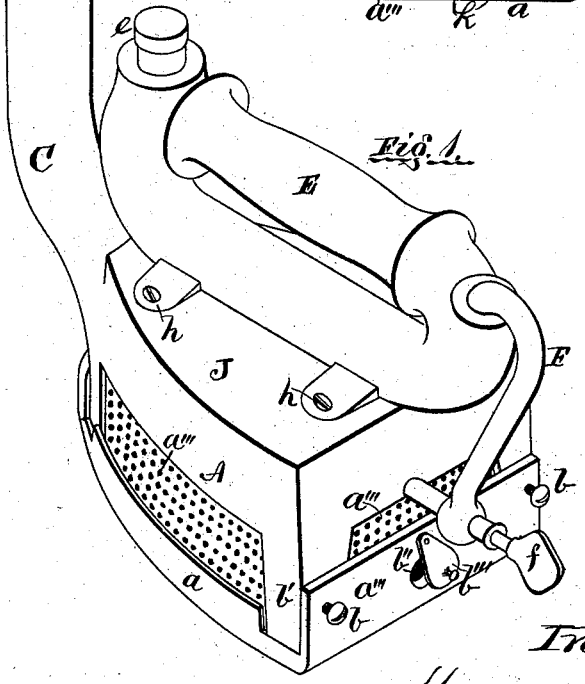


Fig. 1.



Witnesses:

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UNITED STATES PATENT OFFICE.

HARVEY L. WELLS, OF BURLINGTON, IOWA.

IMPROVEMENT IN SAD-IRONS.

Specification forming part of Letters Patent No. **191,908**, dated June 12, 1877; application filed April 18, 1877.

To all whom it may concern:

Be it known that I, HARVEY L. WELLS, of Burlington, in the county of Des Moines and State of Iowa, have invented certain new and useful Improvements in Sad-Irons; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

My invention relates to improvements in sad-irons of that class which are provided with a heating apparatus adapted for being heated by the lighter grades of petroleum; and the invention consists in certain new and improved devices and combinations of devices, all as hereinafter more fully set forth.

In the accompanying drawing, Figure 1 is a perspective view of a sad-iron embodying my invention. Fig. 2 is a longitudinal central vertical sectional view. Fig. 3 is a horizontal sectional view in the line *x x* in Fig. 2.

Referring to the parts by letters, A represents the sad-iron, having a chamber, A′, the bottom *a* of which is removable, and is secured in place as follows: The forward end of the bottom *a* is projected upward and contains a recess, *a″*, which receives the nose or lower front end of the upper part, as shown at Fig. 2. The rear end of the bottom has a flange, *a‴*, through which screws *b* pass and secure it to lugs *b′* on the body of the iron, as shown at Fig. 1. The flange *a‴* has an opening, *b″*, which communicates with the chamber A′, and is provided with a sliding cover, *b‴*. C is a pipe leading from the chamber A‴. D is a vaporizing-plate, and may be constructed as desired. I prefer a simple plate, with its upper side concave, as shown at Fig. 2. The plate D is placed within the chamber A′, some distance above the chamber-bottom, and is pierced with a few very small holes, *d*. The plate D divides the chamber A′ into an upper compartment, A″, and lower compartment A‴. The walls of the compartment A″ are imperforate, except for the admission of a pipe hereinafter referred to, and the walls of the compartment A‴ are partly of foraminous material *a‴*, for the admission of air. E is the handle, made hollow, as shown at Fig. 2, and provided with a capped hole, *e*, through which it may be charged with burning fluid, and is also provided with a hole, *e′*, through which a tube, F, passes. The tube F extends from near the lowest part of the reservoir-handle E, upward to its exit *e′*, and thence downward to where it enters the chamber A″, and thence extends inward to a point near the center of the plate D. Immediately exterior to the chamber A″ the tube F is provided with a conical regulating-valve, *f*, above which and to its end the tube F is filled with cotton or other suitable material *f′*.

The handle E is secured to the iron as follows: Above the wall which forms the top of the chamber A″ is a cavity, G, in which is placed a wooden block, G′, to which the handle E is secured by screws *h*. The block G′ only fills a portion of the cavity G, the balance of which is partly filled with burnt alum I, or any other suitable non-conductor of heat, and which will prevent the heat of the subjacent iron A from being conducted to the handle E. The alum I is capped with a retaining-cover, J.

In use the reservoir E is supplied with gasoline or any other light grade of petroleum, which, by capillary attraction, will be carried over through the cotton *f′*, and is discharged upon the plate D through a small opening or openings in the end of the tube F. To start the heating apparatus a lighted taper or lamp-tube may be inserted through the opening *b″* to heat the plate D from its lower side, heating which will vaporize the gasoline on its upper side, and the chamber A″, becoming filled with said vapor, it will then be forced downward, through the small openings *d*, into the chamber A‴, where it will combine with air entering through the perforated sides *a‴*, and may be ignited and will continue to burn and heat the iron, the smoke, if any, escaping through the chimney C. After the vapor ignites, the lamp or taper may be withdrawn, and the heat of the burning vapor in the chamber A‴ will keep the plate D at a vaporizing temperature of the fluid above it.

The supply of fluid to the plate D may be regulated by the valve *f*, and it may be entirely cut off, when desired, by the same means.

The sliding cover *b'''* may be used to regulate the supply of air to the chamber A''' necessary to support combustion.

To facilitate heating the bottom *a*, iron bows *k* may be secured therein, and extend upward through the flame in the chamber A'''.

What I claim as new is—

1. The hollow reservoir-handle E, in combination with the pipe F, chamber A', and plate D, substantially as described, and for the purpose specified.

2. In combination with the chambers A'' A''', diaphragm D, and pipe F, leading from a gasoline-reservoir, an air-regulating valve, *b'''*, substantially as described, and for the purpose specified.

In testimony that I claim the foregoing as my own I affix my signature in presence of two witnesses.

HARVEY L. WELLS.

Witnesses:
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