J. S. HULL.

SELF HEATING SMOOTHING IRON.

No. 181,266. Patented Aug. 22, 1876.

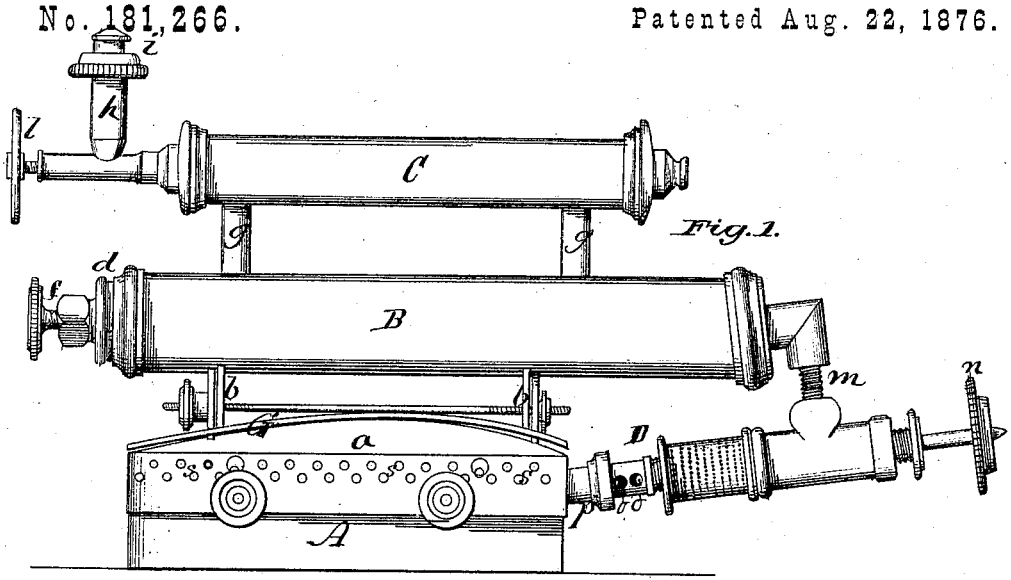


Fig. 2.

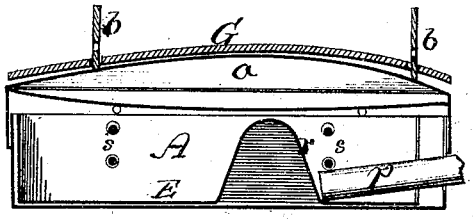
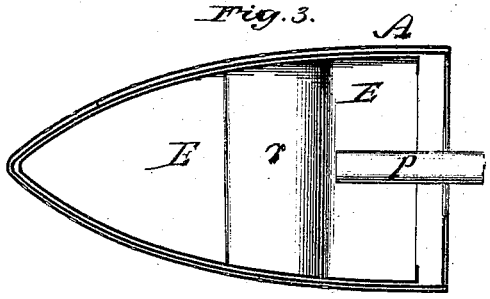


Fig. 3.



WITNESSES
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INVENTOR.

UNITED STATES PATENT OFFICE.

JOHN S. HULL, OF CINCINNATI, OHIO.

IMPROVEMENT IN SELF-HEATING SMOOTHING-IRONS.

Specification forming part of Letters Patent No. **181,266**, dated August 22, 1876; application filed November 12, 1875.

To all whom it may concern:

Be it known that I, JOHN S. HULL, of Cincinnati, in the county of Hamilton and State of Ohio, have invented an Improved Self-Heating Smoothing-Iron; and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawings, making a part of this specification—

Figure 1 being a side view of my improved self-heating smoothing-iron, provided with the self-heating apparatus; Fig. 2, a central longitudinal vertical section of the smoothing-iron proper; Fig. 3, a top view of the smoothing-iron, the top being removed.

Like letters designate corresponding parts in all of the figures.

The nature of my invention consists in a smoothing-iron provided with a close reservoir for containing a combustible fluid, and the pressure of compressed air for driving the fluid to the burner with sufficient force to produce a blowing flame; and with a self gas-generating burner for producing the flame from the combustible fluid; and also in the arrangement of the combustible-fluid reservoir above the smoothing-iron, so as to compact and balance the instrument for convenient use; and in the arrangement of an air-condenser, so as to serve the additional purpose of a handle for the smoothing-iron; and in the construction of the smoothing-iron to diffuse and equalize the heat, and protect the hand from being burned thereby, all substantially as herein specified.

The principal parts of the instrument are the body, or smoothing-iron proper, A; the reservoir B, to contain a hydrocarbon oil or other combustible fluid from which to produce heat; an air-condensing chamber, C, for condensing air in the reservoir; and a gas-generating burner, D, to produce a blowing flame, which impinges against the smoothing-iron.

The smoothing-iron A has a removable top, *a*, to which are secured supports *b b*, by which the reservoir B is attached thereto and supported.

The reservoir B may be of any convenient shape, the cylindrical form shown being simple, convenient, and good in all respects. It has a removable stopper, *d*, at one end, by the removal of which access is had to the interior supplying the reservoir with the combustible fluid; also, a vent-valve, *f*, to let off the surplus air, if desired, at the close of its use at any time.

The condensing-chamber is connected fixedly with the reservoir by two standards, *g g*, one or both of which is hollow, to serve as a means of forcing the compressed air from the chamber to the reservoir. It either has a condensing-piston within, or the condensing-piston and barrel may be a separate instrument, and temporarily attached to it only for forcing the air into it and the reservoir, and then detached, in which case an attaching-pipe, *h*, is employed, with a stopper, *i*, and check-valve *l*. This condensing-chamber or tube serves the additional purpose of a handle to hold and operate the instrument by.

The burner D is connected with the reservoir B by a connecting-pipe, *m*, and delivers the oil under pressure through a very small jet-aperture controlled by a fine conical or needle point, which is provided at the outer end of its shaft with a milled head, *n*, whereby to adjust it.

When it is lighted, the heat of the flame communicates sufficient heat to the metal of the burner-jet to gasify the oil therein and produce a gas-jet, the pressure of which increases with the pressure of air upon the fluid in the reservoir B, and the amount of which allowed to escape around the adjustable needle-point varies the length and heat of the flame as desired. Air to supply the combustion is admitted through holes *o o* in a tube surrounding flame.

The flame of the burner is directed by the said tube *p* into the hollow smoothing-iron A, and is caused to impinge against a raised cross-ridge, *r*, of an interior plate, E, which rests on the bottom of the smoothing-iron, so that the said bottom is protected from too intense heat where the flame-burner strikes. This plate is best made of copper, to rapidly diffuse and equalize the heat over the bottom. The products of the combustion escape through holes *s s* in the sides of the smoothing-iron.

To protect the hand of the user, a shield, G, made of asbestus, felt, or some other good non-conducting material, is placed over the smoothing-iron, and beneath the reservoir B. It

is generally in the form of a plate, as represented.

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

1. The combination, with a smoothing-iron, of a close reservoir for containing a combustible fluid under pressure, and a compressed-air chamber for producing the requisite pressure upon the fluid, substantially as and for the purpose herein specified.

2. In combination with a smoothing-iron provided with a close reservoir to contain a combustible fluid, and a compressed-air chamber for applying pressure to the fluid therein, a gas-generating burner for producing a blowing flame in the smoothing-iron, substantially as and for the purpose herein specified.

3. In combination with a self-heating smoothing-iron provided with a reservoir to contain a combustible fluid under pressure, an air-condensing chamber, C, constructed and arranged to serve the additional purpose of a handle for the smoothing-iron, substantially as and for the purpose herein specified.

4. In combination with a self-heating smoothing-iron, an interior plate, E, of copper, and provided with a shield-ridge, *r*, for diffusing and equalizing the heat of the burner-flame upon the bottom of the smoothing-iron, substantially as herein specified.

Specification signed by me this 3d day of May, 1875.

JOHN S. HULL.

Witnesses:
J. S. BROWN,
E. M. GALLAHER.