R. DRAKE.

Sad Iron.

No. 48,129. Patented June 6, 1865.

Fig 1

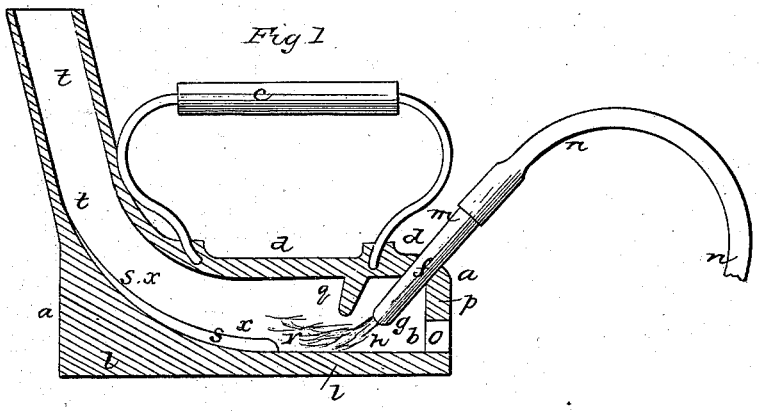
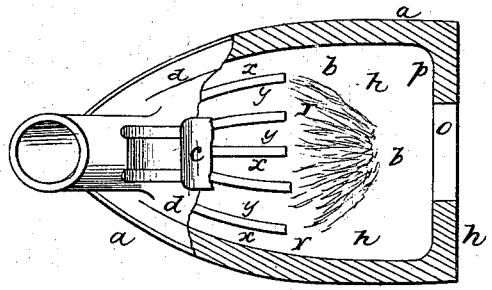


Fig 2



WITNESSES

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ROBERT DRAKE, OF NEWARK, NEW JERSEY, ASSIGNOR TO HIMSELF, JAS. F. BLESS, AND DANL. F. BLESS.

IMPROVEMENT IN SAD-IRONS.

Specification forming part of Letters Patent No. **18,129**, dated June 6, 1865.

To all whom it may concern:

Be it known that I, ROBERT DRAKE, of Newark, in the county of Essex and State of New Jersey, have invented a new and useful Improvement 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 make and use the same, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a central longitudinal vertical section of my improvement; Fig. 2, a plan or top view of the iron, with the top plate and handle removed, showing the peculiar formation of the interior of the heating-chamber.

Similar letters of reference indicate like parts.

The present invention relates principally to a new and useful improvement in the construction and formation of the interior surface of the bottom portion or plate of a sad-iron, to be heated by the combustion of gas in the interior portion thereof, and supplied thereto through any suitable flexible pipe connecting the gas-supply pipe with the same, of sufficient length to allow the iron to be readily used at any desired position upon the ironing board or table.

The object of my improvement is to facilitate and greatly increase the combustion of the gas, and prevent the escape of any of the same from the iron before it has been completely consumed, thereby heating the ironing-surface to a greater degree with the same amount of gas than possible by the construction of the heating-chamber of the irons heretofore used, for the reason that the draft of air through the same to the gas-flame was slow and not sufficient to produce a perfect combustion of the gas.

I accomplish the above results by forming the lower surface of the heating-chamber of the iron, to which air is admitted in the usual manner, commencing at or near the point where the flame of the gas, as it issues from the burner, would strike or impinge against the same, of a gradual incline in an upward direction therefrom to the chimney or outlet-flue of the iron for the products of combustion, &c., whereby the flame of the gas is caused to follow and run along upon the bottom of the iron for and during its whole passage through the chamber thereof, imparting its heat to the same where it is most desired, and at the same time being gradually conducted to and out of the chimney.

From the above it is evident that by facilitating and providing a guiding-surface, as it were, for the flame of the gas to the chimney of the iron a better draft of air through the same is generated, thus producing a much more perfect combustion of the gas and a corresponding increase of its heating-power, the advantage of which is evident.

I have also made another improvement in the formation of the heating-chamber that, in connection with its inclined surface, renders the iron all that can possibly be desired, and which will be hereinafter particularly alluded to.

a a in the drawings represent a flat-iron, made of any desirable shape and size, and with an interior chamber, *b*; *c*, its handle, fastened to upper side of top plate, *d*, in any proper manner; *f*, gas-burner inserted in and passing through the top plate, *d*, of iron, in an inclined position with the burner-orifice *g*, pointing toward the upper surface, *h*, of bottom plate, *l*, of iron.

To the outer end, *m*, of burner one end of a flexible pipe, *n*, of rubber, gutta-percha, or any other suitable material is attached, and of any desired length, the other end of which is secured in any proper manner to the supply gas-pipe. The flexible pipe *n* should be of sufficient length to allow the iron to be moved from place to place upon the ironing board or table without producing any strain upon it.

o is an aperture in rear end, *p*, of iron, forming a communication between its interior chamber, *b*, and the external air surrounding the iron.

On under surface of top plate, *d*, and a short distance in front of the burner *f*, is a projecting plate, *q*, extending across the iron and for about one-half the height of its heating-chamber, which forms and acts as a guide for the air passing into the chamber through the aperture *o*, to cause it to pass more directly to the gas-flame issuing from the burner-orifice when the iron is in use.

Beginning at or near the point *r*, where the flame from the gas-burner would first strike the iron, I form the bottom plate, *l*, on its up-

per surface, with a gradual inclination, *s s*, in an upward direction toward the chimney or exit-flue *t* of the iron, as seen in Fig. 1, for a purpose to be presently specified.

The flat-iron made and constructed as above described, when desired to be used, it is simply necessary to first turn on the gas from the supply-pipe, which, issuing from the burner-orifice, is lighted by applying any proper igniting device thereto through the air-aperture *o*, when its flames, passing first through the heating-chamber of the iron, finally escape at the chimney thereof to the air; but by my improvement the flame and all the products of combustion issuing from the burner from the ignition of the gas are caused to travel and pass over the inclined surface of the bottom, as it forms a direct, continuous, and gradual guiding-surface for the same to the chimney, and by thus bringing them all to bear upon the bottom of the iron a greater degree of heat is imparted to the same, and, moreover, a better draft is given to the air through the chamber, thus securing and increasing the perfect combustion of the gas within the iron, the advantages of which are evident.

In order to increase the radiating-surface for the heat from the flames to the bottom of the iron, I attach to or cast with and upon the same a series of longitudinal partition-plates, *x x x*, &c., projecting a little above its inclined surface, having open spaces *y y y* between every two of the same and extending to the chimney, the flames in their passage to the chimney being obliged to pass through the spaces, thus imparting heat to their respective division-plates, from which it is conveyed to the ironing-surface of the iron, as is evident.

There can be any number of the partition-plates as may be desired, and, also, it is evident that they are not necessary for the successful operation of the inclined guiding-plane for the flame, &c., hereinabove described, and that, also, they may be used with good results in the ordinary heating-chamber of gas sad-irons.

Although I have particularly described my improvements as applied to a gas-burning sad-iron, I do not intend to confine myself to the use of any particular heating agent for the iron, as it is evident there are many which can be used in my improved iron with perhaps as good results.

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

Constructing the bottom of the heating-chamber of a sad-iron with an inclined or curved guiding or deflecting surface, *r s s*, adapted to operate as herein described.

ROBT. DRAKE.

Witnesses:

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