(No Model.)

W. BLANKNER.

SAD IRON.

No. 524,304. Patented Aug. 14, 1894.

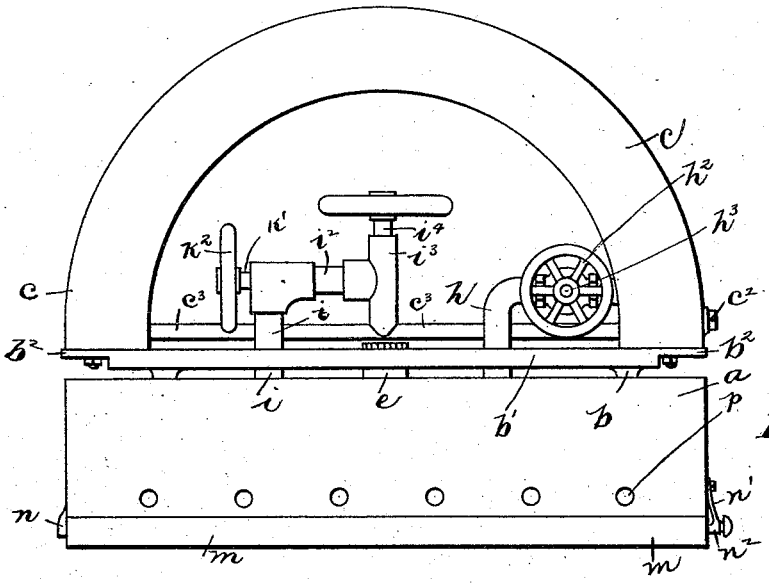

Fig. 1.

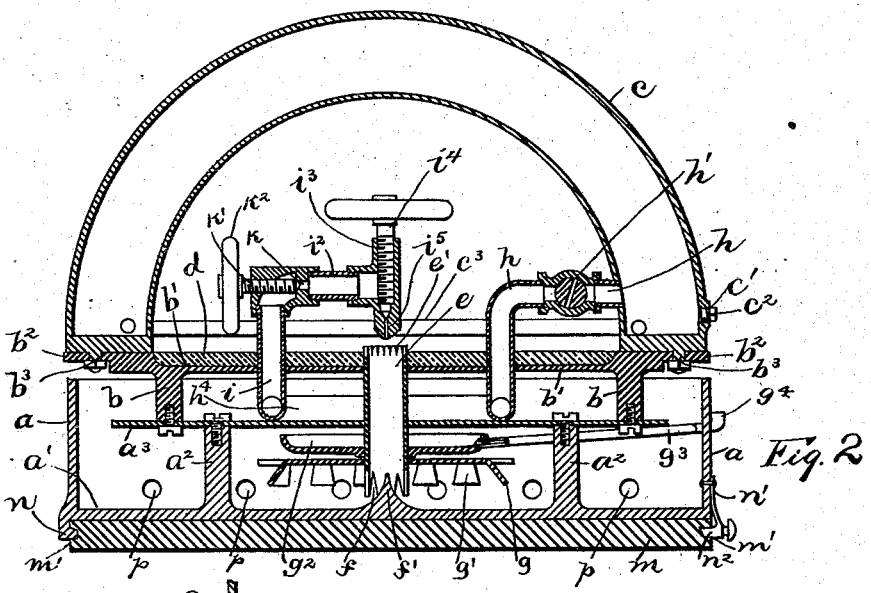

Fig. 2

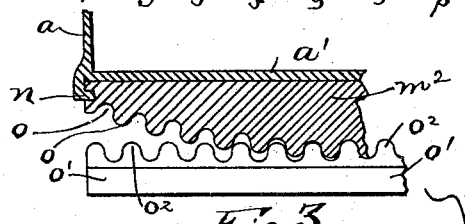

Fig. 3

WITNESSES:

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WILLIAM BLANKNER, OF AURORA, ILLINOIS, ASSIGNOR OF ONE-HALF TO CHARLES M. COATS AND CHARLES E. CORLETT, OF SAME PLACE.

SAD-IRON.

SPECIFICATION forming part of Letters Patent No. 524,304, dated August 14, 1894.

Application filed March 7, 1894. Serial No. 502,605. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM BLANKNER, a citizen of the United States, residing at Aurora, in the county of Kane and State of Illinois, have invented a certain new and useful Improvement in Sad-Irons, of which the following is a specification.

My invention relates to the improvement of sad irons and has particular relation to that class of sad irons known as self heating irons, and the objects of my invention are to provide an iron of this class of improved construction and arrangement of parts; to admit of the employment of a constant gasoline flame for heating said iron and to produce other improvements in details of construction which will be more fully pointed out hereinafter. These objects I accomplish in the manner illustrated in the accompanying drawings, in which—

Figure 1 is a side elevation of my improved iron. Fig. 2 is a central vertical section of the same and Fig. 3 is a detail view partly in section and partly in elevation showing a modification in the form of the smoothing plate or iron bottom.

Similar letters refer to similar parts throughout the several views.

a represents the body of the iron which, as indicated in the drawings, is substantially of a cup or shell shape. From the flat bottom *a'* of this iron body rise at desirable intervals posts or bosses a^2 which posts or bosses support, as shown, a horizontal plate a^3 within the shell *a*. From this plate on the outer sides of said bosses a^2 rise the vertical supporting arms *b* of a cover plate *b'*, said cover plate being by means of said arms *b* elevated slightly above the open upper side of the shell *a* and having the greater portion of its upper surface depressed, as indicated in Fig. 2 of the drawings. This cover plate is provided at opposite ends with short outwardly projecting arms b^2 with which are connected at b^3 and upon which are supported the ends of a semicircular handle *c* which rises therefrom. This handle which is in the form of a tube closed at both ends is adapted to serve as a reservoir and has formed therein a supply opening *c'* which is normally closed by a suitable plug c^2.

The lower end portions of the reservoir are made to connect by means of a cross pipe c^3 by means of which a uniform amount of oil is retained in both sides of the handle. The depressed upper surface of the top plate *b'* is filled with a suitable non-heat conducting material *d* which may be of asbestus or any other suitable material.

Arranged centrally within the body of the iron and depending from the plate *b'* is a central gas tube *e* the open upper end of which passes through said plate *b'* and insulating material and projects slightly above the latter. This upwardly projecting end portion of the tube *e* is provided with short vertical slots or saw cuts *e'* while the lower open end portion of said tube which extends to a point a short distance above the bottom *a'* is notched at regular intervals, as indicated at *f*. With the shell bottom *a'* I form centrally an upwardly extending conical projection *f'*, the tapering end portion of which projects centrally within the lower end of the tube *e*. Upon this tube *e* above said lower end portion I provide a deflector plate indicated at *g*, said deflector plate preferably being formed with downwardly inclined or flaring ears or lugs *g'* formed by the production of notches at regular intervals in the periphery of said plate. Surrounding the tube *e* immediately above the plate *g* is an oil cup g^2 the latter having in one side an inlet pipe or tube g^3 which extends outwardly and upwardly passing through an opening in the side wall of the shell *a* and terminates in an upturned end portion g^4 on the outer side of said shell wall.

From one of the lower end portions of the hollow handle *c* extends inwardly and thence downwardly a pipe *h*, said pipe being provided, as indicated at *h'*, with a suitable valve tube to be operated by an external hand-wheel h^2 connected with a valve stem h^3. The downwardly extending portion of the pipe *h* passes, as shown, through the plate *b'* and at a point immediately above and upon the internal plate a^3 is provided with a curved arm or horizontal extension h^4, which extending upon and above the plate a^3 passes, as shown, about one side of the tube *e*. At its remaining end this horizontal pipe h^4 is connected to the lower end of an upwardly extending gas pipe *i*, the latter passing upward and outward through the plate *b'* and insulating material *d* and at its upper end being

connected with a short pipe i^2 which extends inwardly at right angles, said pipe i^2 connecting with a short vertical valve pipe i^3 which is thus supported, as shown, immediately above the upper open end of the central pipe e. At the junction of the pipe sections i and i^2 is provided a valve k by means of which the degree of communication between said pipes i and i^2 is regulated, said valve consisting of the stem k' and hand wheel k^2. In the vertical valve pipe i^3 I provide a vertical valve stem i^4 which controls a needle point opening i^5 in the lower end of said valve pipe.

As indicated at m I provide my improved iron with a detachable smoothing or base plate which has formed in each end thereof a notch or socket m'. With the shell or iron body a I provide at one end thereof a downwardly and thence inwardly extending hook n which, as shown, is adapted to engage with one of the notches m' of said detachable base plate and to the opposite end of said iron body at a point above the bottom thereof I secure one end of a spring catch arm n' which extending downwardly has an inturned end portion n^2 which is adapted to engage with the remaining notch m' of the iron base m. As indicated in Fig. 3 of the drawings the lower surface of the smoothing plate m^2 may be curved in the arc of a circle and said curved surface provided with transverse fluting grooves indicated at o, the teeth between said fluting grooves being adapted to enter corresponding grooves in a horizontal fluting plate o' having corresponding grooves and teeth on its upper face as indicated at o^2.

In the side wall of the shell a I provide at desirable intervals air openings p.

The manner of utilizing my improved irons and operating the same is substantially as follows: The oil which is introduced into the hollow handle or reservoir c through the opening c' is allowed to flow outwardly therefrom through the pipe h the flow being regulated by the valve h'. From this pipe h the oil is conducted through the generator pipe h^4 which communicates with the vertical pipe i. The cup g^2 being filled with oil through the medium of the feed pipe g^3, the oil contained in said cup is ignited by a flame which may be communicated thereto through said pipe g^3 or through one of the side openings p of the shell. Sufficient heat is imparted from the burning oil in the cup g^2 and from the plate a^3 which is heated thereby to generate gas within the generator pipes h^4 and i. The gas thus generated is allowed to pass through the valve opening which is controlled by the valve k thence through the pipe i^2 and into the valve pipe i^3 and the valve of the latter being sufficiently opened the gas is discharged through the needle point opening i^5. The gas which is thus discharged from the lower end of said valve and pipe i^3 passes downward through the central tube e and outward about the flaring surface of the conical projection f' at which point the gas may be lighted through the flame of a match inserted through the openings p. The heat from this flame which is deflected downward by the plate a^3 and deflector plate g results in the shell bottom and the base plate which is connected therewith being uniformly and thoroughly heated in a comparatively short space of time.

By regulating the flow of gas through the pipes i^2 and i^3 which may be accomplished by the proper manipulation of the valve stems k' and i^4, it is evident that the volume of flame which issues from the lower end of the tube e may be regulated thus regulating the degree of heat imparted to the iron bottom. From this operation it will be seen that the iron while in use may have imparted thereto a uniform degree of heat and that the iron may be used continuously without the necessity of re-heating the same at intervals and without the necessity of burning or otherwise injuring the smoothing face of the iron base by exposing it to a direct heat.

It will be observed that the parts of my improved device are conveniently and compactly arranged so as to result in the iron presenting a neat external appearance and that said iron may be produced at a reasonable cost of manufacture.

Having now fully described my invention, what I claim, and desire to secure by Letters Patent, is—

1. In a sad iron the combination with the shell a, a horizontal plate a^3 supported therein, a top plate b' supported above said shell, a central burner tube b passing downward through said top plate and internal plate a^3 and a deflector plate g on said tube, of a hollow handle rising from said top plate, a valve pipe supported above said burner tube, a horizontal pipe section h^4 supported within said shell upon the plate a^3 one end of said horizontal pipe communicating with the hollow handle c and the remaining end thereof communicating with said valve pipe and a valve controlled orifice in said valve pipe, substantially as and for the purpose specified.

2. In a sad iron the combination with a shell a, a central conical projection f' in the bottom thereof, a top plate supported above said shell, a hollow handle rising from said top plate, a central tube e passing through and depending from said top plate the lower end of said central tube surrounding the upper portion of said vertical projection and a deflector plate g on said tube, of a valve pipe supported vertically above the burner tube e, a horizontal pipe h^4 within the shell one end of the pipe 4 communicating with said hollow handle and the remaining end with said valve pipe and a valve controlled orifice in said valve pipe, substantially as and for the purpose specified.

WILLIAM BLANKNER.

In presence of—
JOHN M. RAYMOND,
A. H. SWITZER.