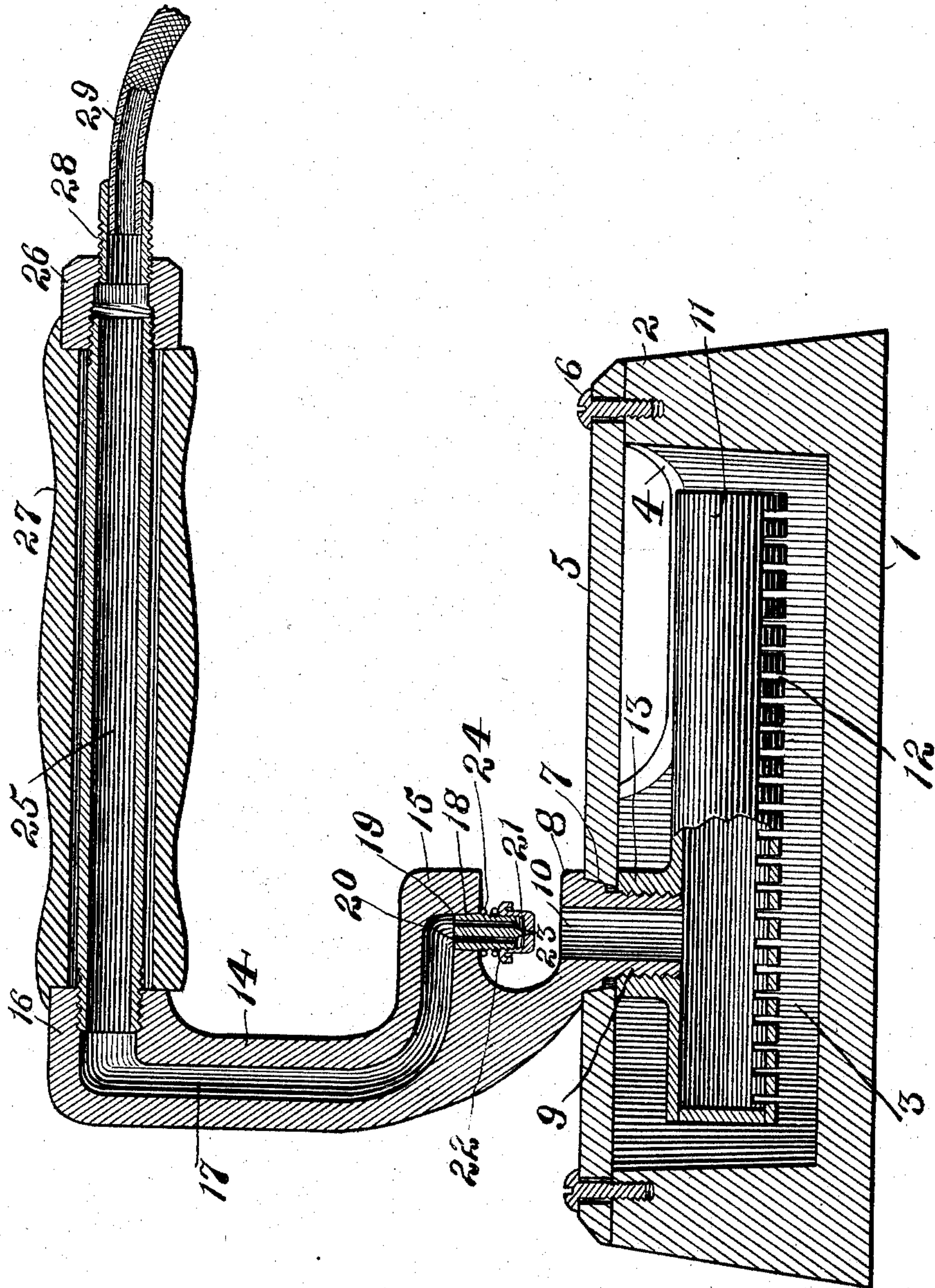


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SAD IRON.  
APPLICATION FILED MAY 2, 1910.

967,138.

Patented Aug. 9, 1910.



Witnesses:

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# UNITED STATES PATENT OFFICE.

JOHN W. LIMBERT, OF AKRON, OHIO.

SAD-IRON.

967,138.

Specification of Letters Patent.

Patented Aug. 9, 1910.

Application filed May 2, 1910. Serial No. 558,995.

*To all whom it may concern:*

Be it known that I, JOHN W. LIMBERT, a citizen of the United States, residing at Akron, in the county of Summit and State of Ohio, have invented new and useful Improvements in Sad-Irons, of which the following is a specification.

This invention relates to sad-irons of that class which are heated by the combustion of a jet of commingled air and gas interiorly-applied, and one of the objects of the invention is to provide a gas-heated sad-iron comprising the novel features of convenience, durability and general effectiveness embodying means for evenly heating the iron throughout the entire area of its smoothing surface.

The invention further contemplates providing a sad-iron of the character named having a hollow body portion adapted to contain a fluid fuel burner and having the upper portion of the body closed by a suitable cover containing means to support a mixing chamber and a handle for the manipulation of the iron, said handle being formed hollow and provided with a connection to receive the end of a flexible hose or pipe by which the fluid fuel is conveyed to the burner. It is also contemplated that the connection for the fluid fuel-conducting means will be so positioned on the handle that the conducting means will be held from contact with the clothes or material on which the smoothing surface of the iron is employed, and by mounting the mixing chamber, handle and fluid-fuel burner upon the cover, the entire mechanism of the sad-iron is removed at will from the body portion thereof.

With the foregoing and other objects in view, the invention consists in the novel construction, combination and arrangement of parts constituting the invention to be hereinafter specifically described and illustrated in the accompanying drawing which forms a part hereof wherein is shown the preferred embodiment of the invention, but it is to be understood that changes, variations and modifications can be resorted to which come within the scope of the claims hereunto appended.

The drawing presented is a vertical, central, longitudinal, sectional view of a gas-heated sad-iron embodying this invention.

Referring to the drawing, the reference numeral 1 denotes the body portion of the

iron having a side wall 2 forming a central cavity or recess 3. The upper portion of this wall 2 is preferably provided with one or more lateral openings 4 positioned near the rear portion of the iron, for a purpose to be later described.

In practice, I prefer to make the body portion of the iron with two sharpened ends to make the same more readily capable of manipulation. The weight of the iron may be increased or diminished as desired by making the walls 2 and bottom of the iron thicker or thinner to increase or reduce the weight thereof. The recess 3 in the iron is closed by means of a cover 5 secured to the upper face of the walls 2 by holdfast devices 6. The cover 5 is provided with an aperture 7 extending therethrough and preferably positioned along the medial longitudinal line thereof and said aperture is provided with an inclined inner face.

Positioned in the aperture 7 is the depending portion of a mixing chamber 8 the exterior of which is suitably fashioned to fit within the aperture 7 and below which is a reduced threaded stem 9 preferably provided with exterior threads. The mixing chamber is provided with a central opening 10, the use of which will be later described. The outer upper portion of the mixing chamber 8 is outwardly-flaring to form a shoulder at its point of union with the threaded stem. This flaring portion is adapted to be seated on the upper face of the cover 5 with the reduced threaded portion 9 extending into the recess 3. Positioned in the recess 3 is a burner 11, preferably constructed in the form of a hollow cylinder with a plurality of minute openings 12 in the lower portion thereof. This burner 11 is provided with an upwardly-extending hollow interiorly-threaded integral tube-like boss 13 adapted to be screwed onto the threaded stem 9 for supporting the burner in spaced relation with respect to the floor of the recess 3. The upper end of the boss 13 is adapted to bear against the under face of the cover 5 so snugly as to hold the mixing chamber and its connected mechanism firmly but detachably in position.

The upper portion of the mixing chamber 8 is preferably formed with an integral upwardly-extending arm 14 provided with a laterally-extending lug 15. The upper end of the arm 14 is formed with a horizontally-extending head 16 provided with an inte-



riorly-threaded opening therein which is in open communication with a passage 17 which extends outwardly into the lug 15. The under face of the lug 15 is provided with an opening 18 communicating with the passage 17 and mounted in the opening 18 is a valve-casing 19 through which extends one or more openings 20. Arranged on the lower end of the valve-casing 19 and projecting downwardly between the openings 20 is a needle-point-valve 21 formed integrally with the valve-casing 19. The exterior of the lower end of the valve-casing 19 is threaded to receive a cup-shaped member 22 having in its lower end a minute conical opening 23 the walls of which constitute a valve seat for the valve 21. Mounted exteriorly on the valve-casing 19 between the lower face of the lug 15 and the cup-shaped member 22 is a coiled resilient element 24 normally adapted to frictionally-engage the cup-shaped member 22 for preventing unintentional revolution thereof.

Secured in the threaded opening in the head 16 is a horizontal pipe 25 having its outer end threaded to receive a nut 26 the position of which may be adjusted by rotating the same. Inclosing the pipe 25 is a handle 27 of heat-insulating material such as wood having its ends preferably properly recessed to receive the projecting end of the head 16 and a portion of the inner end of the nut 26 and which is held in position through the clamping action of the latter. The nut 26 is hollow and provided with a threaded opening in its outer end to receive a nipple 28 to which is connected a flexible fuel-supply-pipe 29 the opposite end of which is connected to some suitable source of fluid-fuel-supply.

The operation of the device is as follows: The parts being assembled, as hereinbefore described, and with the cup-shaped member 22 brought to a position to withdraw the needle-point-valve 21 from its seat in the opening 23, a supply of fluid-fuel such as gas is supplied to the device through the fluid-fuel-supply-pipe 29, from whence it passes through the pipe 25 into the passage 17 and downwardly through the openings 20 into the cup-shaped member 22 and outwardly therefrom in a fine jet. The fluid-fuel-supply is fed under such pressure as will cause it to be projected from the minute opening 23 through the opening 10 in the depending portion of the mixing chamber, in doing which it draws in oxygen from the surrounding atmosphere which is carried with the fluid-fuel into the burner 11, during which operation the gas and oxygen are thoroughly commingled. The commingled gas and air escape through the openings 12 and the fluid-fuel properly mixed with the proper proportion of air is ignited by passing a match or other suitable igniting in-

strumentality through one of the openings 4. The heat generated by the combustion of the fluid-fuel within the recess 3 serves to heat the body portion of the sad-iron to the proper degree.

Experience has demonstrated that gas pressure varies, both in regard to the time of day and also that different gas-plants supply different pressures of gas to the consumers and hence in order to obtain complete and perfect combustion the supply of fluid-fuel which is passed through the opening 23 may be controlled by shifting the position of the cup-shaped member 22 to enlarge or contract the passage for the gas therein in order to regulate the supply of fluid-fuel with respect to the pressure thereof.

What I claim and desire to secure by Letters Patent, is:—

1. A sad-iron comprising a body portion having side walls forming a recess, a cover resting on said walls and having an aperture, means extending through said cover and into said walls for detachably-securing the cover thereto, a mixing chamber having a reduced portion and a head, said head projecting above and engaging said cover, said reduced portion projecting through said aperture into said recess, a burner positioned in said recess and mounted on the lower end of said reduced portion of said mixing chamber, a hollow arm extending upwardly from the head of said mixing chamber and provided with means for projecting a jet of fluid-fuel into said mixing chamber, a tube communicating at one end with said arm, a fluid-supply pipe connected to the opposite end of said tube and a handle of heat-insulating material mounted on said tube.

2. A sad-iron comprising a body portion having side walls forming a recess, a cover resting on said walls and having an aperture, means extending through said cover and into said walls for detachably-securing the cover in position, a mixing chamber having a reduced portion and a head, said head projecting above and engaging said cover, said reduced portion projecting through said aperture into said recess, a burner positioned in said recess and mounted on the lower end of the reduced portion of said mixing chamber, an arm extending upwardly from the head of said mixing chamber provided with a laterally-extending lug positioned above and spaced from the upper end of said mixing chamber, said arm further provided with an interiorly-arranged recess extending from the upper end thereof into said lug, an opening in said lug oppositely-disposed with respect to said mixing chamber, means in said opening for directing a jet of fluid-fuel from said recess into said mixing chamber, a tube communicating



at one end with the upper end of said arm, a fluid-supply pipe connected to the opposite end of said tube and a handle of heat-insulating material mounted on said tube.

5 3. A sad-iron comprising a body portion having side walls forming a recess, a cover resting on said walls and having an aperture, means extending through said cover and into said walls for detachably-securing  
10 the cover in position, a mixing chamber having a reduced portion and a head, said head projecting above and engaging said cover, said reduced portion projecting through said aperture into said recess, a burner positioned  
15 in said recess and mounted on the lower end of the reduced portion of said mixing chamber, a hollow arm extending upwardly from the head of said mixing chamber having a laterally-extending lug, said arm provided  
20 with an interiorly-arranged recess extending from the upper end thereof into said lug, an opening in said lug oppositely-disposed with respect to said mixing-chamber, means in said opening for projecting a jet of fluid-  
25 fuel into said mixing chamber, a valve for controlling the volume of fluid-fuel passing through said last-mentioned means, a tube communicating at one end with said arm, a fluid-fuel-supply-pipe connected to the op-

posite end of said tube and a heat-insulating 30 handle mounted on said tube.

4. A sad-iron comprising a body portion having side walls forming a recess, a cover resting on said walls and having an aperture, means for detachably-securing said 35 cover to said body portion, a mixing chamber having a reduced portion and a head, said head projecting above and engaging said cover, said reduced portion projecting through said aperture into said recess, a 40 burner positioned in said recess and mounted on the lower end of said reduced portion of said mixing chamber, a hollow arm extending upwardly from the head of said mixing chamber and provided with means for pro- 45 jecting a jet of fluid-fuel into said mixing chamber, a tube communicating at one end with said arm, a fluid-fuel-supply-pipe connected to the opposite end of said tube and a heat-insulating handle mounted on said 50 tube.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

JOHN W. LIMBERT.

Witnesses:

C. E. HUMPHREY,  
GLENARA FOX.