

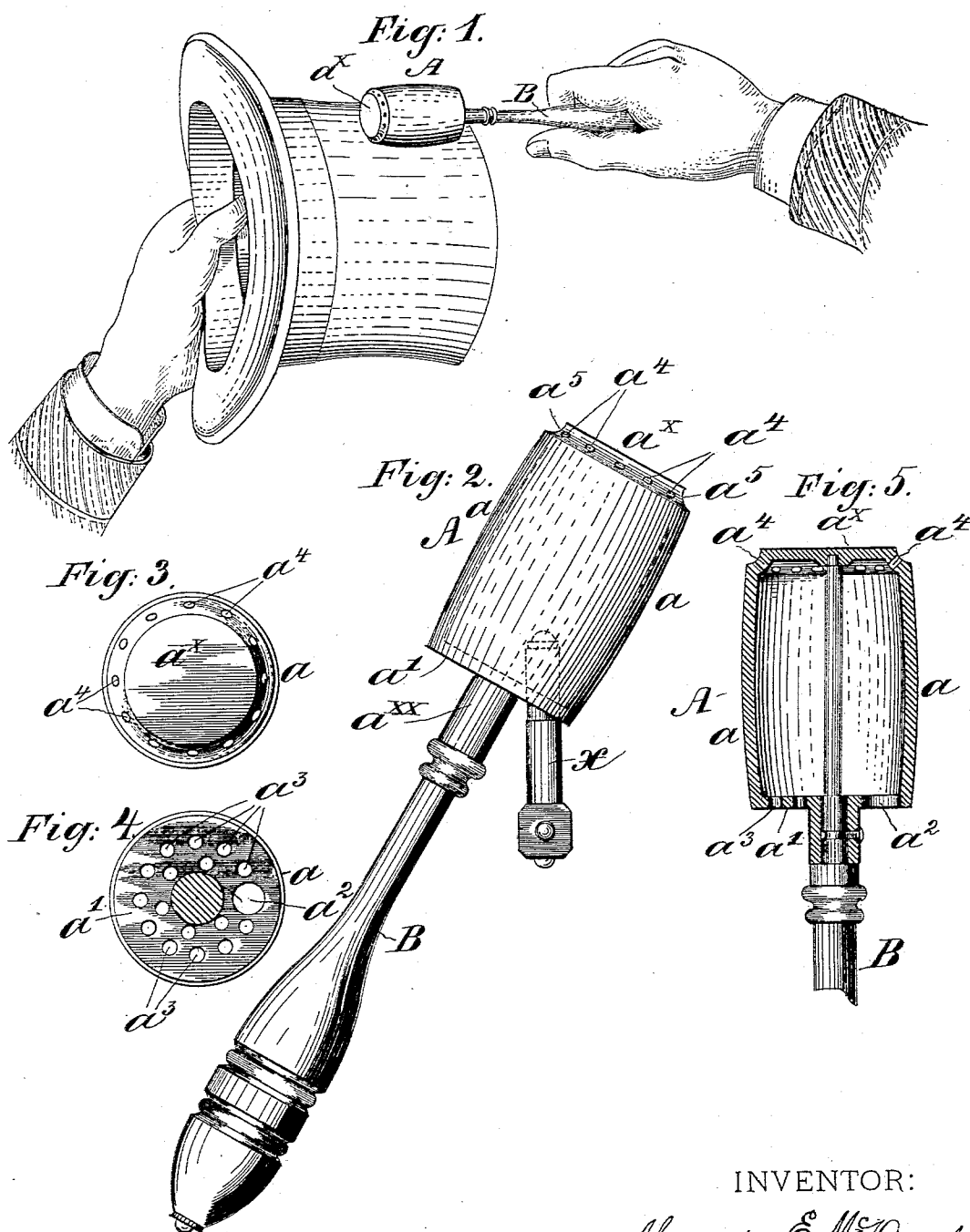
(No Model.)

2 Sheets—Sheet 1.

A. E. McDONALD.
PORTABLE HAT IRON.

No. 504,814.

Patented Sept. 12, 1893.



INVENTOR:

Alexander E. McDonald.

WITNESSES:

Peter A. Ross.

Herbert Blossom

By

Henry Combs

Attorney.

(No Model.)

2 Sheets—Sheet 2.

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Fig. 6

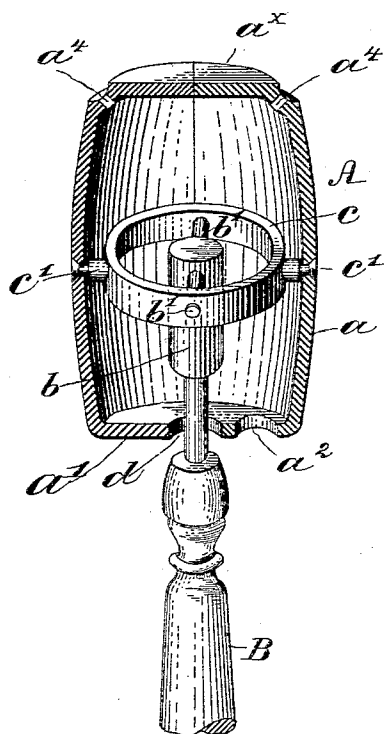
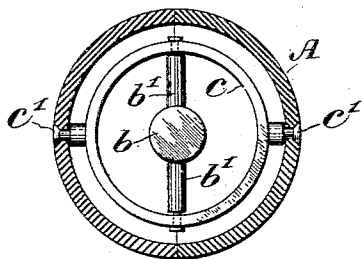


Fig. 7



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UNITED STATES PATENT OFFICE.

ALEXANDER E. McDONALD, OF BROOKLYN, ASSIGNOR TO EDWIN B. STIMPSON, OF NEW YORK, N. Y.

PORTABLE HAT-IRON.

SPECIFICATION forming part of Letters Patent No. 504,814, dated September 12, 1893.

Application filed September 17, 1892. Serial No. 446,149. (No model.)

To all whom it may concern:

Be it known that I, ALEXANDER E. McDONALD, a citizen of the United States, residing in Brooklyn, Kings county, New York, have invented certain new and useful Improvements in Portable Hat-Irons, of which the following is a specification.

My invention relates to the class of portable implements, or irons for ironing or burnishing hats, of which the iron described in my United States Patent No. 476,403 is an example.

The purpose of this invention is to provide a light and convenient implement for ironing and burnishing silk hats, and adapted to be heated conveniently for use.

The present invention consists of a metal head of circular contour when seen in transverse section, and of a barrel-shape so that its smooth exterior surface will fit the concave contour of the hat-body. By barrel-shape, I mean that when the head is seen in side elevation or in longitudinal, axial section, its sides present a rounded, convex outline. The head as here shown has also apertures in one end to admit a gas jet, for heating and to admit air to supply the flame. At its other end are outlets for the heated gases. The end of the head presents a smooth surface for smoothing the flat crown of the hat. The head has a handle fixed to it and the handle is aligned with the axis of the head. The handle will by preference, be connected to the head by a universal joint as will be hereinafter explained.

In the accompanying drawings which serve to illustrate my invention—Figure 1, is a perspective illustrative view on a small scale showing how my iron is applied to the hat-body. Fig. 2, is a side elevation of the hat-iron, showing how it may be applied to a gas-burner for heating. Figs. 3 and 4, are end elevations of the head of the iron. Fig. 5 is a sectional view of the head showing how it may be rotatively mounted on the handle. Fig. 6 is a view of the hat-iron with the head in axial section so as to show the preferred mode of connecting the head to the handle by a universal joint; and Fig. 7 is a transverse section of the head taken in the plane of the pivotal axis.

A represents the head of the iron, as a whole, and B, the handle. The head is hollow, and has somewhat the form of a barrel, being circular in cross-section at all points in its length, but largest in diameter about midway of its length. This form imparts a convex contour to the exterior, rounded surface a , of the head, which surface will be smooth or polished. The end surface, a^x , of the head will be substantially flat and also smooth. The head is secured non-rotatively to the handle, B, which latter is substantially in axial alignment with the head.

To heat the head, it is provided at its handle-end, a' , with an aperture, a^2 , to admit a gas jet, as x , in Fig. 2. It will also have an aperture or apertures in this end to admit air to support combustion. The heated gases escape at apertures, a^4 , herein shown as formed in an annular recess, a^3 , at the outer end of the head and formed along the angle where the convex ironing surface a , joins the plane ironing surface, a^x , as clearly shown. The object of this arrangement of the apertures a^4 , in preference to arranging them in one or the other of the ironing faces, is because otherwise they would interrupt or break the surface and interfere with the smoothing of the surface of the hat.

The iron is applied to the surface of the side of the hat-body as seen in Fig. 1, and carried around the hat while the handle B, is grasped tightly. The effect of this movement is to bring into contact with the hat successive parts of the convex surface a of the non-rotative head, whereby, when the head A shall have completed a revolution about the hat-body the head will have made one rotation on its axis with respect to the hat-body. If the head be rigidly fixed on the handle, the end a' of the head may have a socket, a^{xx} , seen in Fig. 2, formed on it to fit on the handle, and the handle may be secured in place in said socket by a screw driven through the wall of the socket into the handle, in a well known way. Where the head is rigidly fixed on the handle, however, some skill is required to apply the head properly to the hat and hold it in position thereon to iron the same most effectively; therefore I prefer to so secure the head to the handle that the former

may rock on the latter and adapt itself automatically to the surface of the hat, whereby less skill and care will be required in handling it. This construction is illustrated in Figs. 6 and 7, wherein a universal joint or coupling is employed to connect the handle to the head. In these views a stem, *b*, on the handle, enters the hollow head through an aperture, *d*, in the end, *a'*, thereof, and said stem is connected by trunnions, *b'*, to a gimbal ring, *c*, which rocks on trunnions, *c'*, that have bearings in the wall of the head. One set of trunnions being at right-angles to the other set, this connection of the handle to the head forms a sort of universal joint which allows the head to rock on the handle in every direction to an extent limited by the play of the stem on the handle in the aperture *d*.

To facilitate the assembling of the parts and the construction, the head may be formed in halves and these be held together by riveting down the trunnions *c'* on the exterior surface of the head; or the sections of the head may be secured together in other well known ways. I do not limit myself to the means herein shown for permitting the non-rotative head to rock on the handle; there are other known means for effecting the same result.

In the preferred construction illustrated in Figs. 6 and 7, the air to support combustion, when heating the head with a gas jet, will enter at the aperture *d*, about the stem on the handle; but where the handle is rigidly fixed to the head, holes may be punched or drilled in the handle-end of the head to admit air. Such apertures are seen at *a''* in Fig. 4. The head of the iron may be plated, if desired and the handle may be made of any suitable material, either hollow or solid, and be ornamented in any desired manner.

The method of heating the head by gas jet is well known, and I do not claim it herein. It would be feasible to heat the head in some other way, and in that case the provisions for heating the head with a jet may be omitted.

I have stated that the handle is aligned axially with the barrel-shaped head, and I prefer that it should be so arranged as otherwise it would be lopsided, but I do not wish to limit myself to the exact alignment of the longitudinal axes of the handle and head.

The characteristic features of my present invention are, first, the head, preferably non-rotative, having a continuous, convex ironing surface *a*, of which, the parts are brought into play successively as the head is carried around the hat, the said surface having a rubbing as distinguished from a rolling action; second, the mounting of the head so as

to rock on the handle and thus adjust itself automatically to the surface being ironed, and third the arrangement of the gas outlets along the angle formed at the junction of the two ironing surfaces.

I am aware that ironing machines for laundry use have had rollers made in the form of two frustums of cones placed base to base, and I make no claim to a roller of this form which could not be used in my hat iron.

Having thus described my invention, I claim—

1. As an improved article of manufacture, a portable hat-iron for ironing the side of the body of a silk hat, comprising a metal head, of barrel-shape, circular in cross-section and convex longitudinally, and a handle attached to one end of said head, the axis of the handle being aligned substantially with the axis of the head.

2. As an improved article of manufacture, a portable hat-iron for ironing the side of the body of a silk hat, comprising a hollow metal head, *A*, circular in cross-section and convex longitudinally, having apertures for the entry of air and escape of gases, and an aperture to admit a gas-jet for heating, and a handle *B*, said handle having its axis aligned substantially with the axis of the head.

3. As an improved article of manufacture, a portable hat-iron comprising a metal head which is circular in cross-section and convex longitudinally, and a handle, the head being secured at its end non-rotatively to the handle, whereby when the head is passed about the body of a silk hat its entire convex surface will be brought into rubbing contact with the surface of the hat.

4. As an improved article of manufacture, a portable hat-iron comprising a hollow metal head of barrel-shape and a handle connected therewith by a universal coupling arranged in the interior of the head, substantially as set forth.

5. As an improved article of manufacture, a portable hat-iron having a hollow head furnished with two ironing faces *a* and *a'*, in different planes, and having outlets for the escape of gases arranged in a groove situated at the angle where the said ironing faces are joined, substantially as and for the purpose specified.

In witness whereof I have hereunto signed my name in the presence of two subscribing witnesses.

ALEXANDER E. McDONALD.

Witnesses:
HENRY CONNETT,
PETER A. ROSS.