

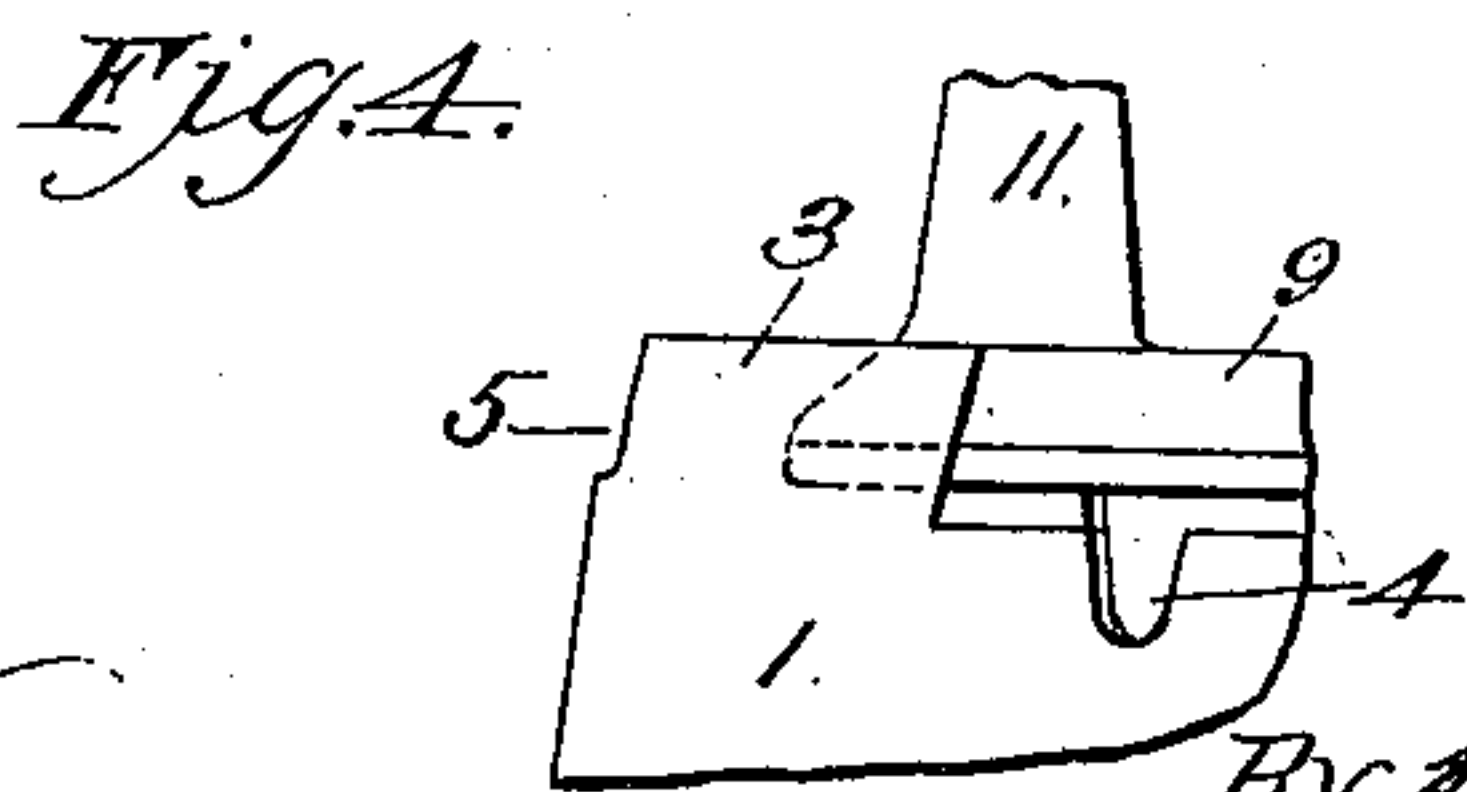
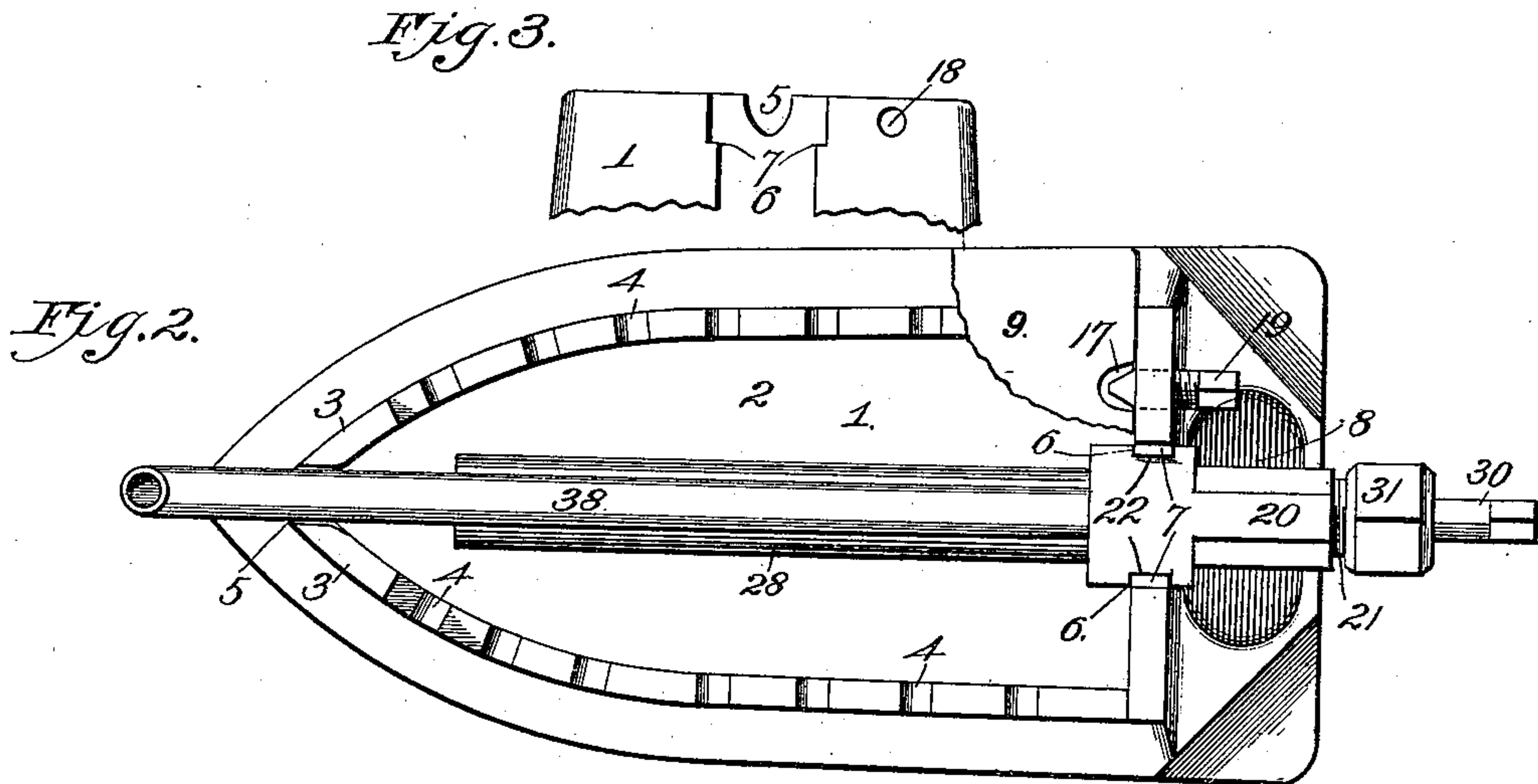
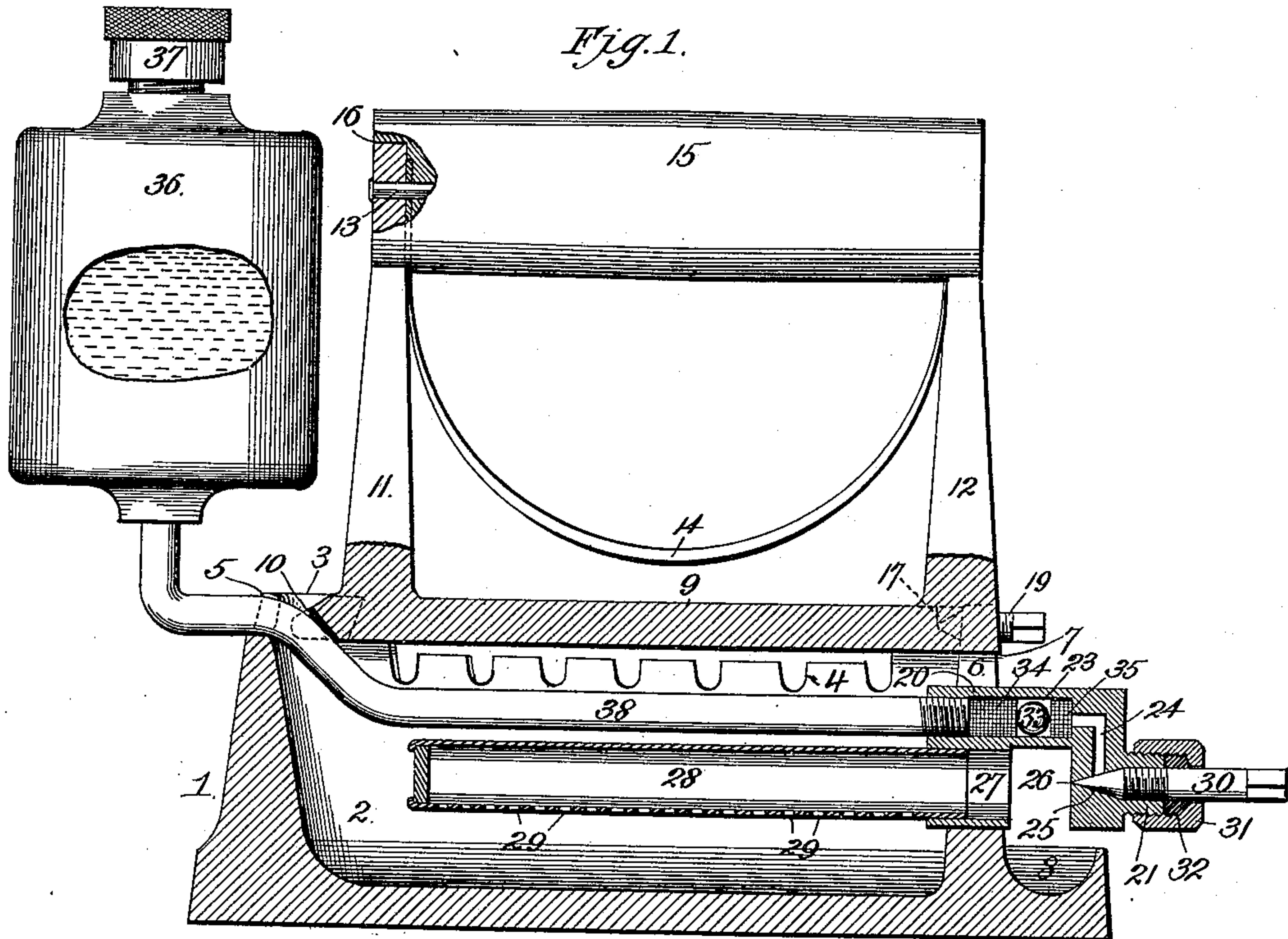
No. 621,035.

Patented Mar. 14, 1899.

A. E. CORDRAY.
SELF HEATING SAD IRON.

(Application filed Mar. 15, 1898.)

(No Model.)



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UNITED STATES PATENT OFFICE.

ALPHEUS E. CORDRAY, OF KANSAS CITY, MISSOURI.

SELF-HEATING SAD-IRON.

SPECIFICATION forming part of Letters Patent No. 621,035, dated March 14, 1899.

Application filed March 15, 1898. Serial No. 673,986. (No model.)

To all whom it may concern:

Be it known that I, ALPHEUS E. CORDRAY, of Kansas City, Jackson county, Missouri, have invented certain new and useful Improvements in Self-Heating Sad-Irons, of which the following is a specification.

My invention relates to self-heating sad-irons, and more especially to that class or type which embody a gasolene tank and burner, the object being the provision of an "iron" composed, essentially, of three parts—viz., the base or ironing surface, the handle, and a gas generator and burner—which may be easily and quickly assembled or disconnected and are of strong, durable, and inexpensive construction.

Other objects of the invention will appear in the following description, and its scope or novel features will be pointed out in the appended claim; and in order that the invention may be fully understood I will proceed to describe it with reference to the accompanying drawings, in which—

Figure 1 represents, mainly in vertical longitudinal section, a sad-iron constructed in accordance with my invention. Fig. 2 is a top plan view of the base or ironing-surface and a burner therein, the supply-tank for the latter and the greater part of the top plate of the iron being omitted. Fig. 3 is a rear elevation of part of the iron to show more clearly the connection between the top plate which carries the handle and the base or ironing portion. Fig. 4 is a side elevation of the front upper corner of the iron to show the shoulders against which the top plate is clamped.

In the said drawings, 1 designates the base or ironing portion of an iron provided with the large and customary cavity 2 in its bottom, which cavity, however, is segmental in cross-section in order that it may be cleaned without difficulty and also that the surface impinged upon by the flame from the burner, to be presently described, may extend substantially concentric thereto and the base of the iron be uniformly heated throughout. The side walls of this hollow base are cut away at their upper ends almost their full length, so as to leave the converging front portions 3 thereof and the rear wall projecting to a higher plane, and to provide for

the entrance to the burner of the requisite quantity of air to support combustion said side walls are provided in their upper edges with a series of notches 4, and at the apex of said converging portions 3 an opening or notch 5 is provided, for a purpose which will hereinafter appear. The rear wall is provided centrally with a vertical notch or slot 6, which near its upper end is slightly widened, so as to provide horizontal upwardly-disposed shoulders 7, and rearward of said wall the base of the iron is provided with a cavity 8 to receive and vaporize any oil which may be discharged from the vaporizing-tube with the vapor or gas therein generated.

9 designates the top plate for and of the same configuration as the iron, substantially, and said plate is provided at its front end and under side with a notch 10, which registers with notch or opening 5, and integrally formed or cast with said plate at its front and rear ends, respectively, are vertical standards 11 and 12, the latter projecting slightly rearward of the plate and of size to fit snugly in the widened portion of notch 6 and upon the shoulders 7 thereof. The said top plate fits snugly between the rear wall and under the sloping and overhanging shoulders provided by the rear ends of the projections 3 in order that the rear end of the top plate must be elevated before the top plate can be withdrawn from engagement—that is, from under the overhanging ends of projections 3—and it also finds a support upon the side walls at the four points contiguous to the projections 3 and the rear wall, as shown clearly.

The upper ends of the standards 11 and 12 are connected by a rod 13, which extends also through the upper ends of the hand guard or shield 14, of about the same width at its middle as the iron and tapering to its ends, said guard or shield deflecting the heat radiating from the iron from the operator's hand, and mounted upon said rod 3 is a handle 15, of wood or equivalent material, notched at its ends, as at 16, to receive the upper ends of the standards and the shield.

The rear end of the top plate is provided with a notch 17 in its upper side, which registers with a threaded opening 18 in the rear

wall of the iron and is adapted to receive the end of a screw-pin 19, mounted in said opening and provided with a rectangular head or end adapted for engagement with a key or wrench. By means of this adjustable pin the handle portion of the iron may be reliably secured in position, to the end that the iron may be handled without any possibility of accidental disconnection between said parts.

The device for heating the iron is constructed as follows—that is to say, 20 designates an inverted-U-shaped casting provided with a threaded boss 21, projecting rearwardly from one of its arms, and in the opposite sides of the other arm with vertical grooves 22, whereby it may be slipped down into the notch 6 in the rear wall of the iron and be reliably supported thereby. The horizontal or bridge portion of this U-shaped casting is longitudinally bored to provide the passage 23, having its front end threaded and its rear end diametrically diminished and communicating with the upper end of a vertical passage 24 in the rear arm, which vertical passage in turn communicates at its lower end with the valve-passage 25, terminating in the jet-orifice 26, arranged opposite the center of the longitudinal passage 27 in the lower end of the front arm of the casting, said opening 27 forming practically a mixing-chamber for air and gas and also receiving the rear end of the burner-tube 28, which projects longitudinally forward into the hollow base and is provided at its under side with jet-orifices 29, to the end that the jets of flame from the burner-tube shall impinge upon the rounded base of cavity 2, and consequently heat the iron at the proper point for the work in hand. A needle-valve 30, of the customary form and construction, controls the passage of gas or vapor through the jet-orifice 26 and is formed angular at its rear end, that it may be engaged and operated by the same key that is used for turning the screw-pin 19. To prevent gasolene or vapor escaping by the way of the threaded boss 21, I mount upon the valve-stem and said boss the adjustable packing-box 31, provided with a suitable packing material 32.

Arranged in the channel or passage 23 and of slightly less diameter than the same is a vaporizing-ball 33, preferably of steel, and at opposite sides of said ball are strainers 34 and 35, preferably consisting of solid cylinders made by rolling sheets of wire-gauze of very fine mesh, which strainers serve to filter the gasolene and also to facilitate its vaporization by dividing it up into exceedingly fine streams, and the ball, which is raised to a very high temperature, causes the gasolene in passing to spread out into substantially a cylindrical film, which envelops the ball at all points except where it is in contact with the base of the passage in order that it shall be thoroughly vaporized. The gauze cylinder 35, while performing a filtering function, is used chiefly to prevent the ball from cutting off

the passage of the vapor by rolling up against the diminished end of the channel or passage. Consequently a spring or any other device which will hold the ball away from the diminished end of the passage and not close up said passage will serve equally as well.

36 designates a cylindrical gasolene-tank having its supply-opening closed by a cap 37, which cap may be made air and liquid tight by means of a lining of cork or equivalent material, (not shown,) and 38 designates a pipe which supports the gasolene-tank in a vertical position at the front end of the handle and is screwed into the front end of the passage 23 of the casting. Said pipe therefore comprises a vertical portion, a horizontal portion, and an angular portion, the latter at its apex extending through the hole or opening formed by the notches 5 and 10 in the front ends of the base and top plate, respectively, of the iron.

The parts being assembled as shown, to start the burner it is necessary to open the valve slightly and permit a small quantity of gasolene to drop down in the cavity 8. The valve is then closed and a lighted match applied to the gasolene in said cavity, and the flame therefrom by impinging directly on the thin wall of the casting surrounding the ball 33 quickly raises said parts to a vaporizing temperature. The valve is then opened the requisite distance, and the vapor thus generated is discharged through said jet-orifice 26 forwardly through the mixing-chamber 27 and into the burner-tube, which latter forms practically a mixing-chamber in itself, owing to the fact that the air sucked into the chamber 27 by the forceful discharge of the vapor enters said tube before the mixture is complete. The gas thus produced is ignited by the flame of the gasolene in the cavity 8 or by a lighted match or taper applied at the mouth of the mixing-chamber, and by reason of the fact that the flame-jets impinge directly upon the base of the iron it is quickly raised to the desired temperature, and by reason of the good conductivity of the metal the steel ball is maintained at a vaporizing temperature, to the end that the vaporizing operation shall be continued as long as the iron is in use and is discontinued simply by manipulating the valve so as to close the jet-orifice 26. In practice the set-screw 19 and the valve 30 will be operated by means of a key (not shown) which accompanies the iron.

From the above description it will be apparent that I have produced a self-heating sad-iron which embodies the features of advantage enumerated as desirable in the statement of invention and which is reliable in operation, under perfect control of the operator, and may be manufactured at small cost, and it is to be understood, of course, that I may resort to such changes in the detail construction or arrangement of the parts as do not involve a departure from the spirit and scope of the invention.

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

5 In a self-heating sad-iron, a heating attachment comprising a U-shaped casting provided with a gasolene passage or channel, a mixing-chamber, a valve-seat passage terminating in a jet-orifice opposite the mixing-chamber, a vapor-passage connecting the
10 valve-seat opening and the first-named passage, a needle-valve controlling said jet-orifice, a packing-nut thereon, a strainer in the gasolene-channel, a vaporizing-ball in said

channel rearward of said strainer, a burner-tube communicating with the mixing-chamber and having its jet-orifices in its under side, a gasolene tank or reservoir, and a pipe connecting the same with the front end of the gasolene-channel, substantially as described.

In testimony whereof I affix my signature 20 in the presence of two witnesses.

ALPHEUS E. CORDRAY.

Witnesses:

F. S. THRASHER,
M. R. REMLEY.