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J. W. FAESSLER.

STEEL HARDENING MACHINE.

APPLICATION FILED AUG. 8, 1904.

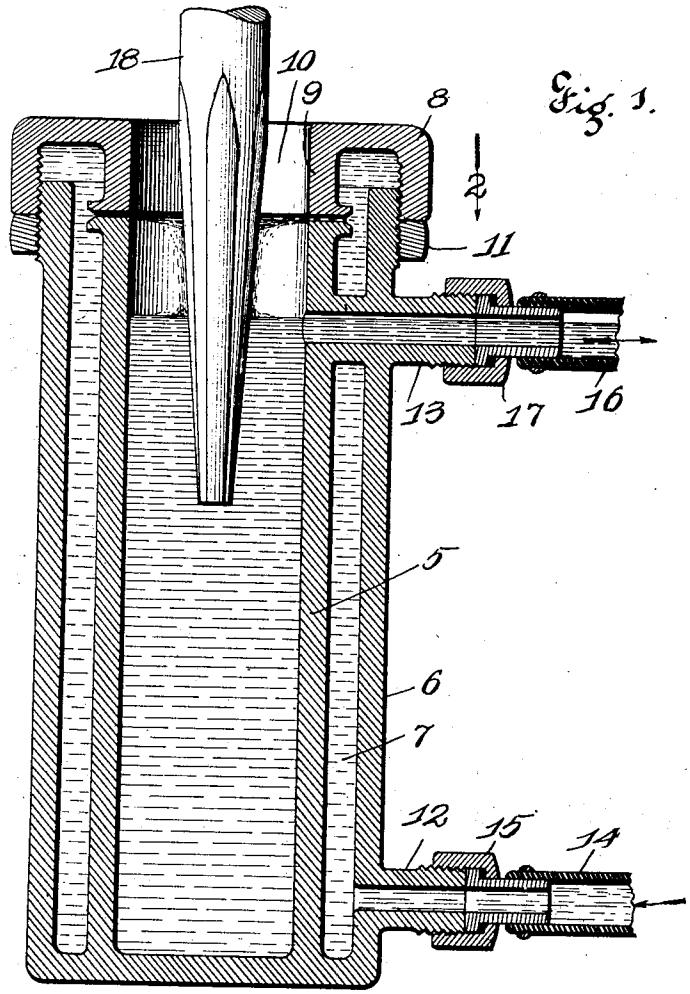


Fig. 1.

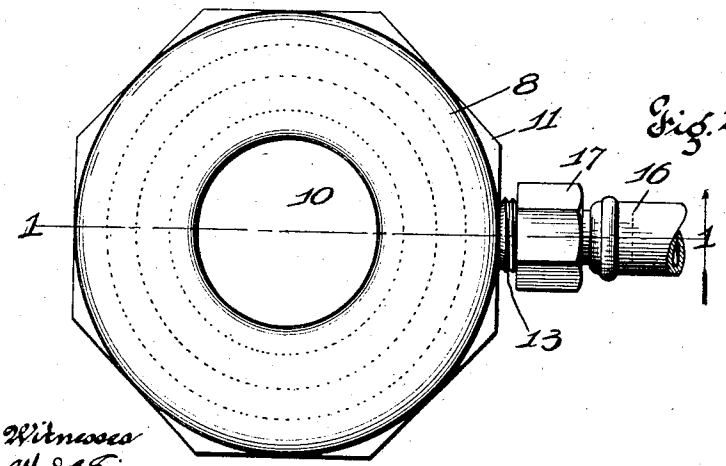


Fig. 2.

Witnesses
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UNITED STATES PATENT OFFICE.

JOHN W. FAESSLER, OF MOBERLY, MISSOURI.

STEEL-HARDENING MACHINE.

SPECIFICATION forming part of Letters Patent No. 779,841, dated January 10, 1905.

Application filed August 8, 1904. Serial No. 219,932.

To all whom it may concern:

Be it known that I, JOHN W. FAESSLER, a citizen of the United States, and a resident of Moberly, Missouri, have invented certain new and useful Improvements in Steel-Hardening Machines, of which the following is a specification containing a full, clear, and exact description, reference being had to the accompanying drawings, forming a part hereof.

My invention relates to improvements in steel-hardening machines; and it consists of the novel features herein shown, described, and claimed.

In the drawings, Figure 1 is a vertical central section on the line 1 1 of Fig. 2 and looking in the direction indicated by the arrow and showing the operation. Fig. 2 is a top plan view as seen looking in the direction indicated by the arrow in Fig. 1, the steel being removed.

Referring to the drawings in detail, my improved steel-hardening machine is preferably cast in two pieces and comprises the cup-shaped hardening-receptacle 5; the water-jacket 6 around the receptacle 5 and forming the water-chamber 7, said water-jacket extending a short distance above the upper end of the receptacle; the water-jacket cap 8, screw-seated upon the upper end of the water-jacket 6; the receptacle extension 9, extending downwardly from the inner edge of the cap 8 in alinement with the wall of the receptacle, there being a thin discharge-opening 10 extending entirely around the receptacle between the upper edge of the receptacle and the lower edge of the flange, the width of said opening being adjustable by adjusting the cap up and down upon the jacket; a jam-nut 11 upon the jacket 6 and holding the cap 8 in its adjusted position, the inlet-nipple 12 providing a water-passage to the jacket-chamber 7′ and the outlet-nipple 13 leading from near the upper end of the receptacle 5 outwardly through the chamber 7 and through the jacket 6.

The supply-pipe 14 may be connected to the inlet-nipple 12 by the union 15 or by any suitable means, and the outlet or overflow pipe 16 may be connected to the nipple 13 by a union 17 or by any other suitable means.

In the operation of my improved steel-hardening machine fresh water passes through the supply-pipe 14 into the chamber 7, and from the chamber 7 the water is discharged in a thin sheet through the opening 10, said water meeting at the center of the receptacle 5 and falling into the receptacle, and the water will flow out of the receptacle 5 through the nipple 13. The cold water will fall to the bottom of the receptacle, and the warm water will overflow and run out of the receptacle. As before suggested, the flow of water may be adjusted and regulated by adjusting the cap 8 to increase or decrease the width of the slit 10. The piece of steel to be hardened, such as that indicated by the tool 18, is inserted downwardly into the receptacle 5 through the sheet of water, thus bringing fresh water into contact with the surface of the steel as it passes downwardly, thereby greatly improving and facilitating the process of hardening and tempering.

I claim—

1. In a steel-hardening machine, a suitable receptacle; a jacket around the receptacle; a cap upon the jacket; a flange extending from the cap in alinement with the receptacle, and forming a discharge-opening extending entirely around the receptacle; and an overflow-pipe leading from the receptacle.

2. In a steel-hardening machine, a suitable receptacle; a jacket around the receptacle; a cap adjustably mounted upon the jacket; a flange extending downwardly from the inner edge of the cap and forming a thin discharge-opening around the upper edge of the receptacle; means for leading water to the jacket; and means for leading the overflow from the upper end of the receptacle.

3. In a steel-hardening machine, a suitable receptacle open at the top; a jacket around the receptacle; a cap upon the jacket; a flange extending downwardly from the inner edge of the cap and closing the jacket and forming a thin opening from the jacket into the receptacle, there being an opening through the cap inside of the flange in alinement with the open upper end of the receptacle; means for leading water to the jacket so that it will discharge in a thin sheet into the receptacle; and

means for leading the overflow from the upper end of the receptacle so that the liquid in the receptacle will maintain a water-level below the discharge-opening.

4. In a steel-hardening machine; a suitable receptacle open at the top; a jacket around the receptacle; means for leading water to the jacket; means for discharging water from the jacket in a thin continuous sheet from all sides into the receptacle; and means for leading the overflow from the receptacle, so that the liquid in the receptacle will maintain a water-level below the discharge; substantially as specified.

In testimony whereof I have signed my name to this specification in presence of two subscribing witnesses.

JOHN W. FAESSLER.

Witnesses:

ALFRED A. EICKS,

F. C. CRISLER.