J. JENKINS.

Tempering Steel.

No. 102,550. Patented May 3, 1870.

Fig. 1.

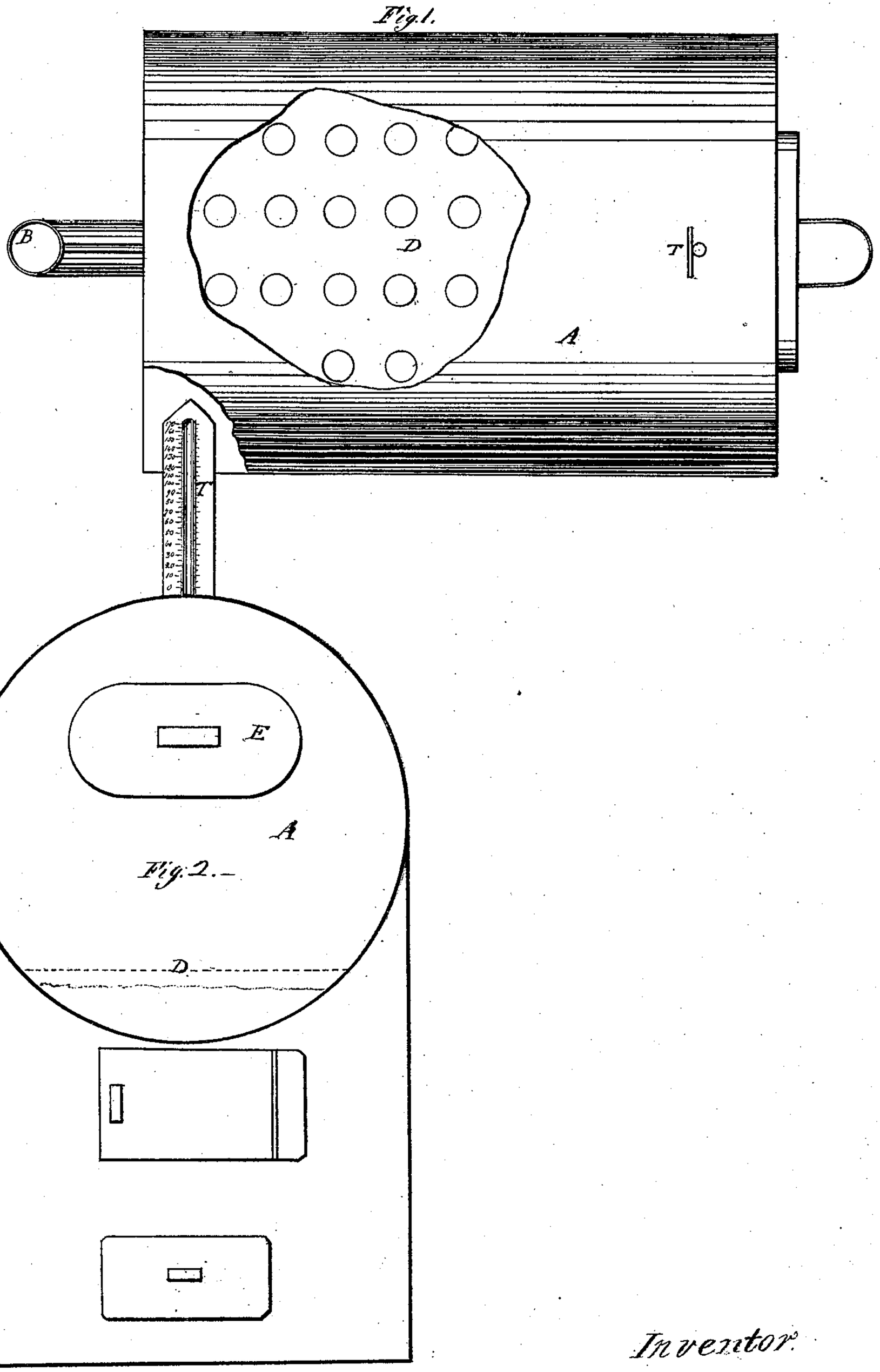

Fig. 2.

Witnesses.

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United States Patent Office.

JABEZ JENKINS, OF PHILADELPHIA, PENNSYLVANIA.

Letters Patent No. 102,550, *dated May* 3, 1870.

IMPROVED PROCESS FOR TEMPERING STEEL.

The Schedule referred to in these Letters Patent and making part of the same

To all whom it may concern:

Be it known that I, JABEZ JENKINS, of Philadelphia city and county, in the State of Pennsylvania, have invented a new and improved Process for Tempering or Drawing the Temper of Hardened Steel; and I hereby declare the following to be a full and exact description thereof, reference being had to the accompanying drawing forming part of this specification.

The nature or essence of my invention consists in tempering or drawing the temper of hardened steel in edge tools and other articles by heating them to the proper point in steam or vapor.

In the use of my improved process, a steam-boiler of any form and construction that is found convenient and adapted to the purpose may be employed, but it should be made strong enough to bear with safety a pressure of at least sixty atmospheres.

The drawing hereinbefore mentioned shows the principal features of a boiler that may be used for tempering.

The boiler proper A has beneath it the usual furnace for applying heat to it, B being the gas or smoke-pipe of the same.

A horizontal grating, D, or perforated platform is placed within the boiler at such a height as to be above the water, upon which the implements, articles, or material to be tempered is to be placed, the man-hole E affording ready access to the interior for putting in and taking out the articles, or for any other purpose.

The thermometer T, which may have that portion of the tube outside the boiler covered with a strong glass tube, or with a metal case having a plate glass front, so that the mercury column and scale may be visible, has its bulb within the boiler, so as to be immersed in the steam and to indicate precisely its temperature.

A sufficient quantity of water having been supplied to the boiler by hose-pipe or otherwise, allowing, if saturated steam be used, which I greatly prefer, about a pint and a half for every cubic foot of boiler space above it, and the articles or material to be tempered having been placed upon the platform D, heat is to be applied until the temperature of the steam, which will be indicated by the thermometer, has risen to the degree required for giving the right temper to the articles under treatment. The temperature of the steel, which is a good conductor of heat, will have risen at about the same rate with the steam, so that when the latter has reached the proper point the heat may be at once checked, and the temperature allowed to fall. This may be done by opening the furnace doors, letting off the steam, or by both means, or by any other method that may be found convenient.

The temperature or degree of heat required for the various sorts of implements, from the lancet to the large and heavy saw, is well known to skillful workmen, and varies from about 430° to 600° Fahrenheit. The tools having been forged and hardened in the usual manner, only those requiring the same temper must be put into the boiler together.

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

The above described process for tempering hardened steel, by surrounding it with steam heated to the temperature required.

JABEZ JENKINS.

Witnesses:

R. W. CURL,

C. B. CROZIN.