

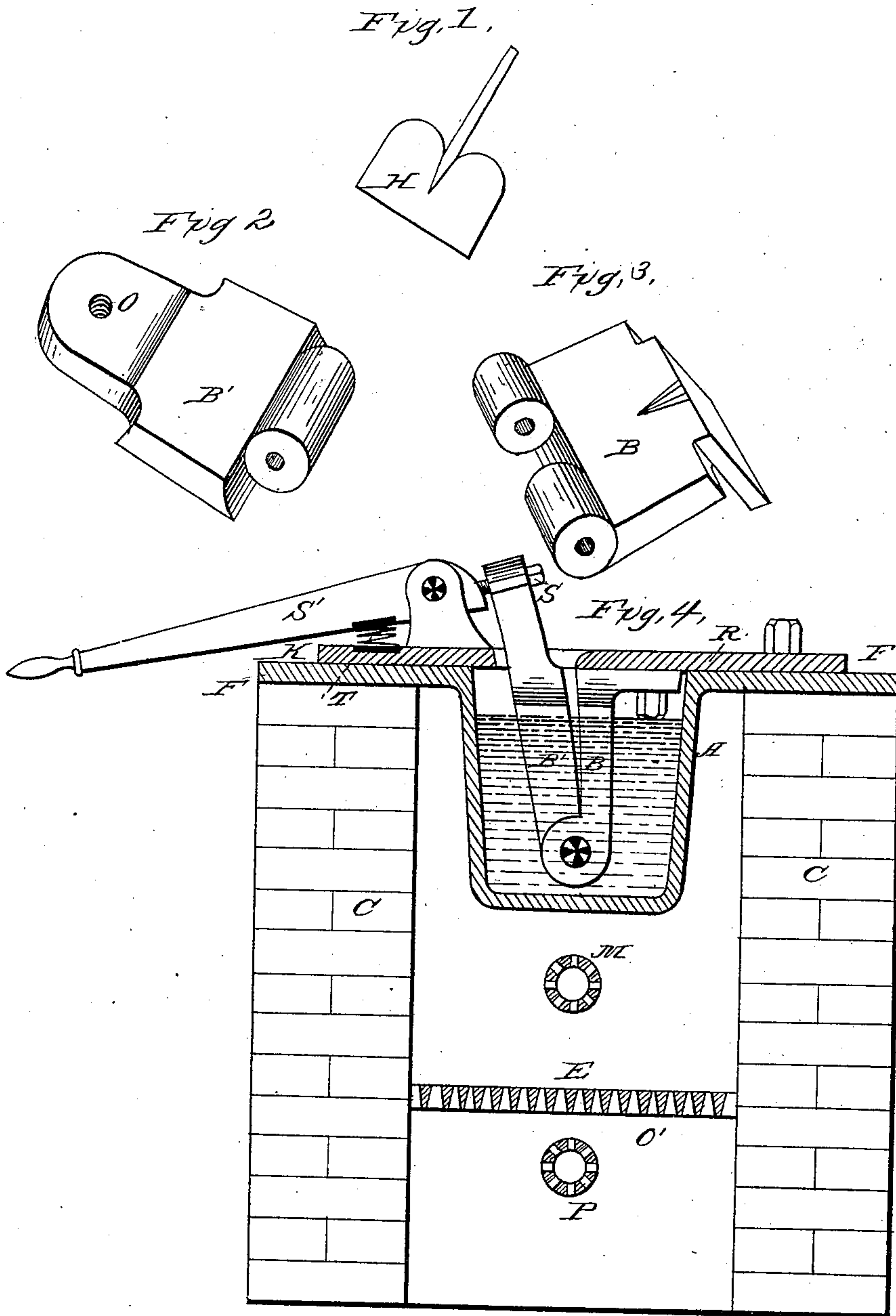
(No Model.)

J. C. RICHARDSON.

DEVICE FOR TEMPERING HOES AND OTHER THIN STEEL ARTICLES.

No. 267,457.

Patented Nov. 14, 1882.



WITNESSES:

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UNITED STATES PATENT OFFICE.

JULIUS C. RICHARDSON, OF ILION, NEW YORK.

DEVICE FOR TEMPERING HOES AND OTHER THIN STEEL ARTICLES.

SPECIFICATION forming part of Letters Patent No. 267,457, dated November 14, 1882.

Application filed March 30, 1882. (No model.)

To all whom it may concern:

Be it known that I, JULIUS C. RICHARDSON, of Ilion, in the county of Herkimer and State of New York, have invented certain new and useful Improvements in Hoe-Tempering Devices; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, which form a part of this specification.

Figure 1 is a perspective view of a hoe-blade ready for tempering. Figs. 2 and 3 are perspective views of the jaws or clamps of the tempering device, and Fig. 4 is a vertical sectional view of the tempering device complete.

Corresponding parts in the several figures are denoted by like letters of reference.

This invention relates to an improved device for tempering the steel blades of knives, edge-tools of all descriptions, hoes, and other implements; and it consists in an improved construction and arrangement of parts, which will be hereinafter fully described, and particularly pointed out in the claims.

In the drawings hereto annexed I have shown my invention applied to a device for tempering hoes.

A represents a vessel or receptacle containing molten lead, and provided at its upper edge with broad flanges F, by which it is supported upon the walls C of a suitably-constructed furnace having grate E and ash-pit P.

Bolted or otherwise secured to one side of the flange F is a plate, R, projecting, as shown, over the molten-lead receptacle A; and to the under side of said plate is bolted one of the jaws B of a vise or clamping device, which is immersed in the lead bath. To the lower edge of said jaw B is hinged the other jaw, B', which is provided near its upper edge with a screw-threaded opening, O, in which a set-screw, S, is inserted, as shown.

The faces of the jaws B B' are constructed to correspond with the configuration of the hoe-blade H or any other device or article which is to be tempered. The jaws, being re-

movable, may be easily detached and others of a different construction substituted.

Mounted upon the other side of flange F is a plate, K, having bearings L for a cam-lever, S', adapted to bear against the point of the set-screw S at the upper end of the hinged jaw B'. A spring, T, is interposed between the plate K and the handle of lever S' for the purpose of keeping the latter automatically in a raised position.

In operation the blade H is first heated to a red heat, and immersed in oil or any liquid which will cool to a hardness. It is then placed in the lead bath, between the jaws B B', which are compressed by lever S', thus holding the blade under pressure for any length of time which may be required to draw to the exact degree of temper required, and which may be determined by a pyrometer. By this means the steel blank or blade, while immersed in the lead bath, retains its exact shape, so that very little hammering is required to fit the work for grinding; and the grease is thoroughly burned off, while by other processes it is liable to be baked on, thus interfering with the grinding and polishing.

By this process blades may be tempered quickly, and with much more certainty than by methods now generally employed.

M O' are perforated pipes located respectively above and below the grate E in the furnace. A blast may be directed through either of these pipes from a rotary blower, (not shown in the drawings,) the blast through pipe O' being for the purpose of urging the fire and through pipe M for the purpose of cooling the lead in vessel A, the temperature of which is thus sufficiently under control.

Having thus described my invention, I claim and desire to secure by Letters Patent of the United States—

1. A tempering device embodying a lead bath, a pair of clamping-jaws immersed in said bath, a set-screw adjustable in one of said jaws, and a cam-lever adapted to bear against set-screw, by adjusting which the maximum pressure may be determined and regulated.

2. A tempering device embodying a lead

bath, a cap-plate, R, a pair of clamping-jaws
secured detachably to the under side of the
same, so as to be immersed in the lead bath,
and means for operating said clamping-jaws,
5 as set forth.

3. The combination of the furnace C, flanged
vessel A, plate R, clamping-jaws B B', lever
S', and spring T, as and for the purpose set
forth.

In testimony that I claim the foregoing as
my own I have hereto affixed my signature in
presence of two witnesses.

JULIUS C. RICHARDSON.

Witnesses:

W. A. KLING,
GEO. RICHARDSON.