

(No Model.)

2 Sheets—Sheet 1.

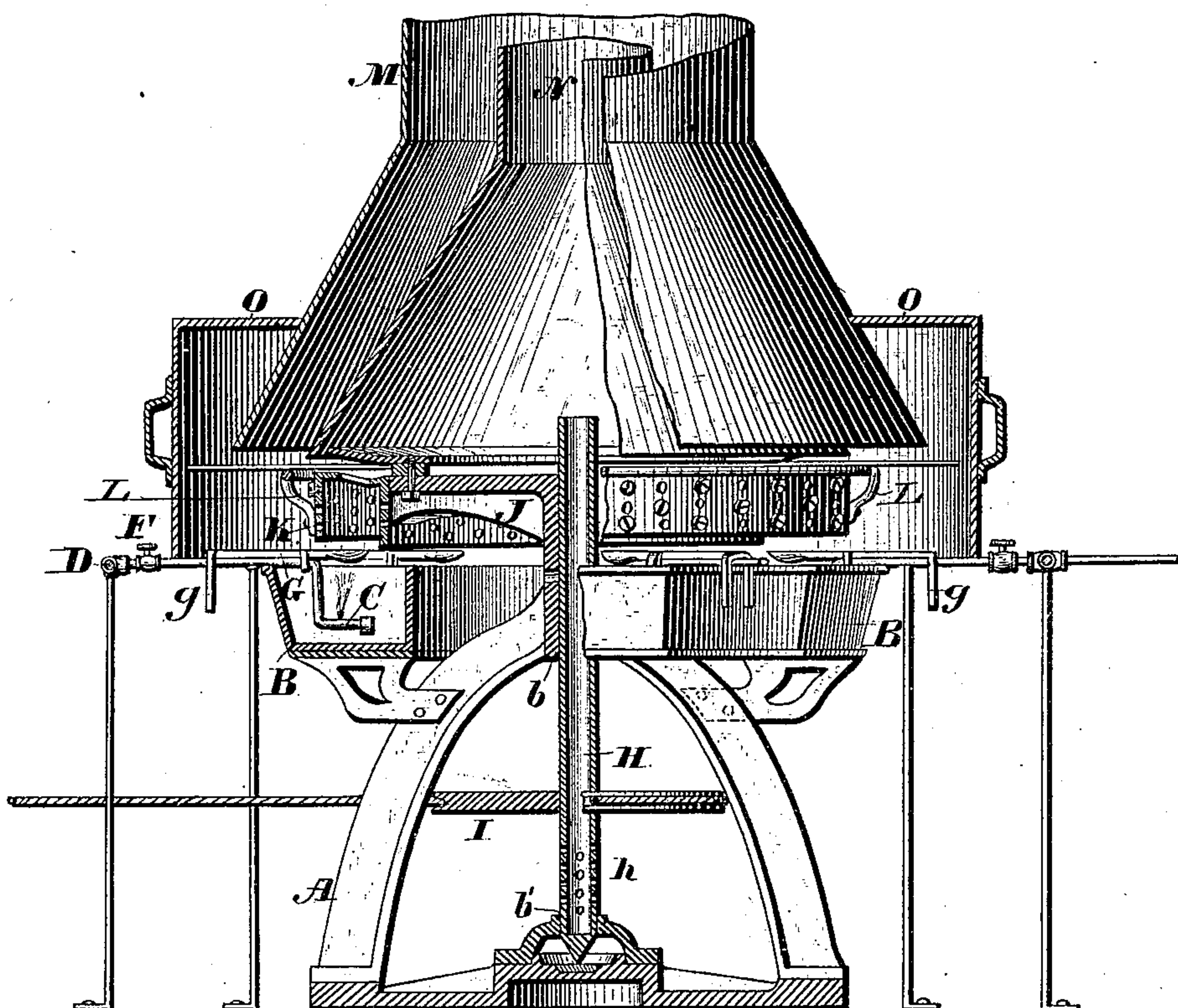
G. H. PERKINS.

Rotary Benzine Furnace for Heating Soldering Irons.

No. 234,424.

Patented Nov. 16, 1880.

Fig. 1.



Attest:

J. Henry Kaiser.
John Doherty

Inventor:

George H. Perkins.
By W. C. Mawhood,
Bonsall Taylor.
Attys.

(No Model.)

2 Sheets—Sheet 2.

G. H. PERKINS.

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Fig. 2.

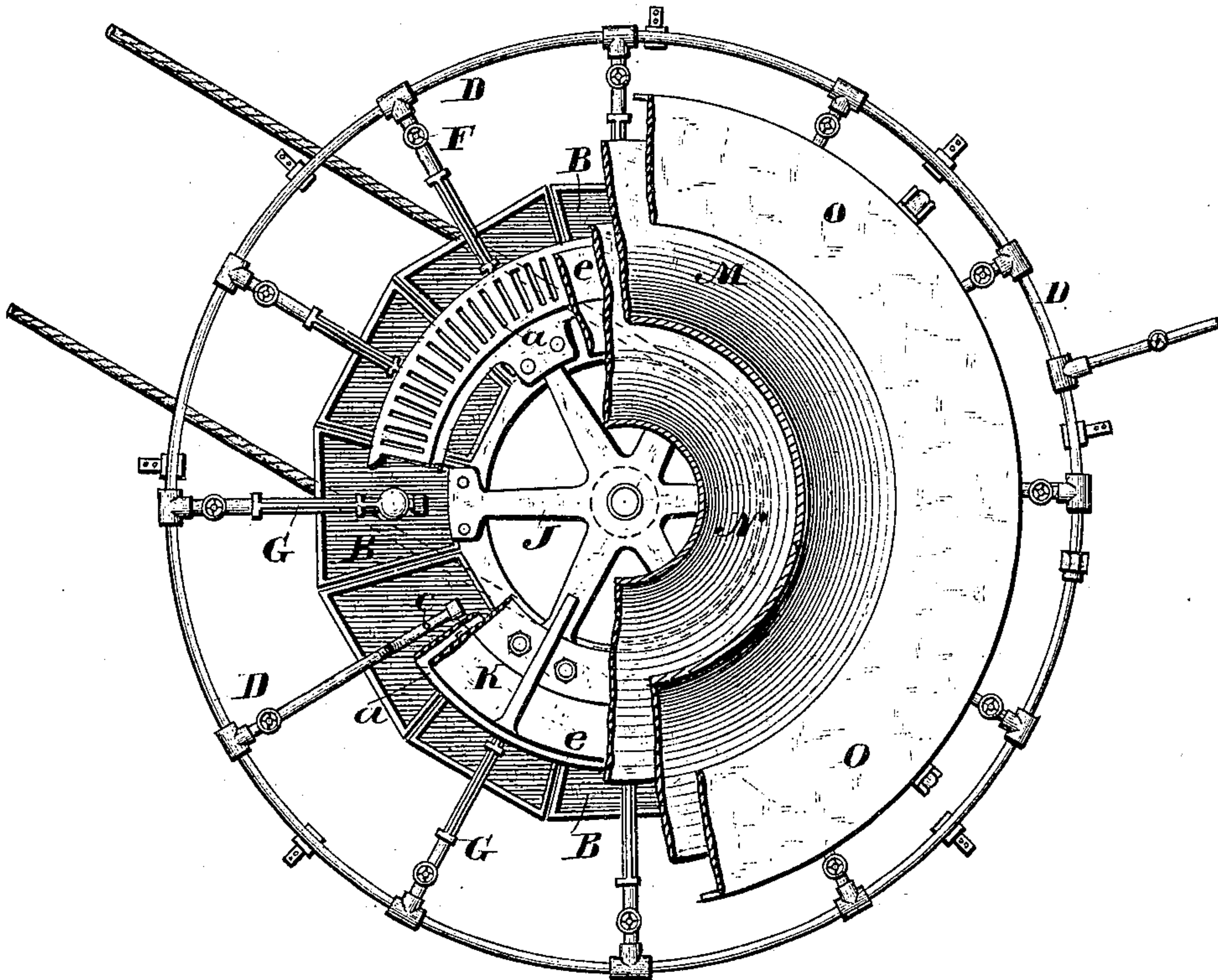


Fig. 3.

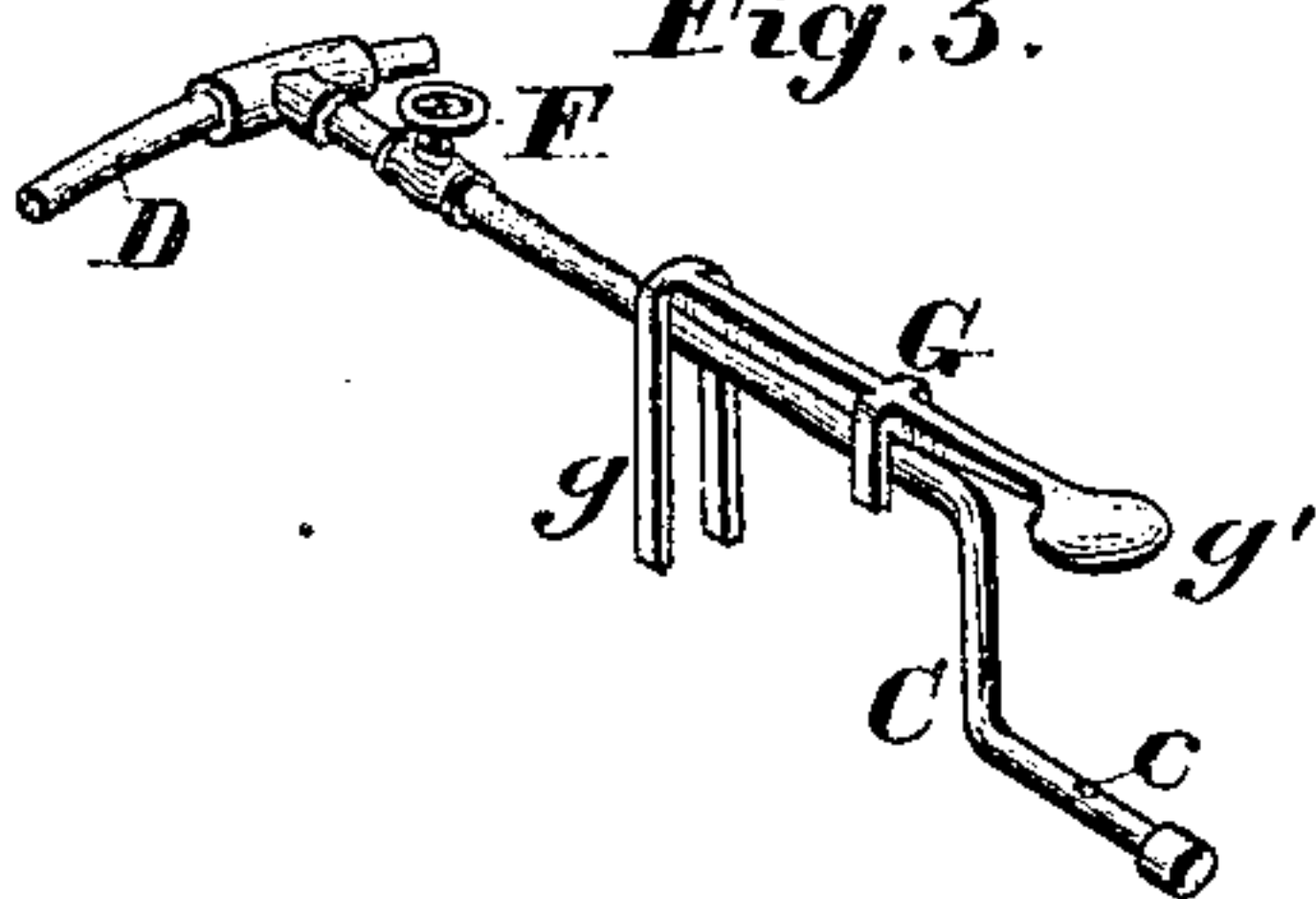
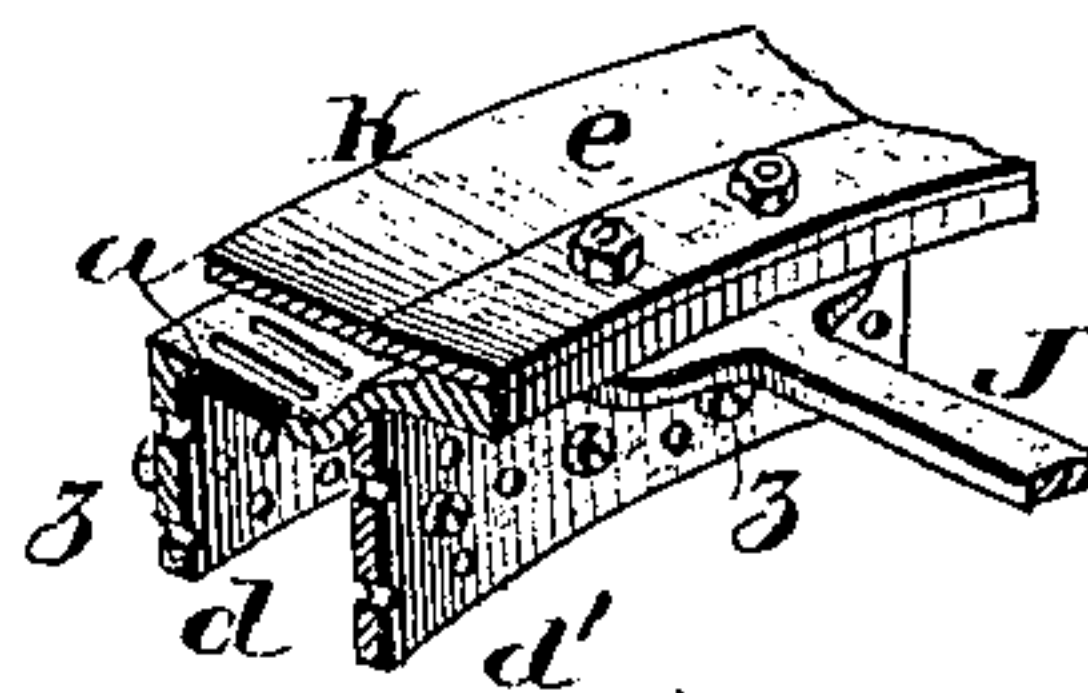


Fig. 4.



Attest:

J. Henry Kaiser.
John Solley Jr.

Inventor

George H. Perkins.

By W. C. Strawbridge,
Bonsall Taylor.
Atty's.

UNITED STATES PATENT OFFICE.

GEORGE H. PERKINS, OF PHILADELPHIA, PENNSYLVANIA.

ROTARY BENZINE-FURNACE FOR HEATING SOLDERING-IRONS.

SPECIFICATION forming part of Letters Patent No. 234,424, dated November 16, 1880.

Application filed April 5, 1880. (No model.)

To all whom it may concern:

Be it known that I, GEORGE H. PERKINS, of Philadelphia, Pennsylvania, have invented a Rotary Benzine-Furnace for Heating Soldering-Irons, of which the following is a specification.

My present invention may, if desired, be employed in connection with the benzine-distributing apparatus described in my Letters Patent No. 150,606, dated May 5, 1874. It relates in some degree also to the method set forth in my Letters Patent No. 151,619, dated June 2, 1874, for heating soldering-irons, while it best employs the burner described and claimed in my Letters Patent No. 169,372, dated November 2, 1875, while being capable of use with other forms of burner.

The object of my invention is to provide a rotary apparatus in which cold or cooling soldering irons or dies may be placed, and in which they may be heated to the requisite degree while the apparatus is rotating, so that when the irons approach the point at which they were introduced they may be sufficiently heated for removal and use.

The fire-pot or furnace herein described is especially designed for use in connection with a rotary automatic apparatus for effecting the union of forms of metal by heat and pressure, for which I have applied for Letters Patent by application filed in the United States Patent Office March 19, 1880. It will, however, be comprehended that this apparatus can be employed separately or in connection with other mechanisms than the above apparatus.

Of the drawings, Figure 1 is a view, partially in side elevation and partially in sectional elevation, of a form of furnace conveniently embodying my invention; Fig. 2, a top-plan view of the same, partially sectional, to illustrate construction; Fig. 3, a perspective detail of a burner and flame-disseminator, and Fig. 4 a perspective view, partially sectional, of the rotating circular receptacle, in which the soldering-irons are placed to be heated.

Similar letters of reference indicate corresponding parts.

The following is a description of the form of apparatus represented, which consists, essentially, of a frame-work supporting a circular

series of benzine-troughs, in which are contained a series of benzine-burners and of a circular receptacle adapted to be continuously rotated above the burners, the arrangement being such that disseminated flame from the burners is caused to heat and circulate throughout the parts which form the circular receptacle, in order to create and maintain a temperature which renders possible the rapid and continuous heating of the irons.

In the drawings, A represents a frame-work of any convenient construction, upon which are bracketed or otherwise supported a series of benzine-troughs, B, to collect any drip or leakage of benzine and to aid in the concentration of the heat.

The troughs are conveniently constructed in a circular series supported on a corresponding series of brackets, although in practice one circular trough would effectuate my invention.

C are a series of burners consisting each of a jointless tube plugged and welded at the end, having an outlet-aperture, *c*, near said plugged end, and bent at two points, so that the flame at the aperture will act on the bent portion of said endless tube, said burners being of the construction represented in my Letters Patent No. 169,372, herein referred to. The burners are placed in such relation to their troughs as is shown at the left-hand or sectional portion of Fig. 1, radiating into the troughs from a circular supply-pipe, D, suitably supported upon legs or otherwise. Each burner is supplied with a regulating-cock, F, and is equipped with what I term a "flame-disseminator," G, (best shown in Fig. 3,) the same being made of material capable of resisting high heat, and being in the form of a bar provided with weighted legs *g* to straddle the burner, and with a rounded end or disseminator proper, *g'*, adapted to be adjusted over the outlet-aperture *c* of the burner when it is desired to break up its blast. When desired, the disseminator may be dispensed with or drawn back.

H is a central shaft, made hollow and perforated at *h*, so as to permit of a circulation of air to keep its journals *b b'* cool. The shaft is equipped with a band-wheel, I, pulley, or the like, whereby rotation may be imparted to it. Near its upper extremity the shaft is pro-

vided with a series of radial metal arms, J, which sustain the rotary receptacle K for the soldering-irons.

The receptacle K may be conveniently constructed in the manner illustrated in Fig. 4—that is to say, with an inclined rest or seat, *a*, for the irons, with two depending and concentric diaphragms *d d'*, and with a top or guard, *e*, to the seat, all in about the proportions and relation shown. The seat and diaphragms are throughout slit or perforated with slots or openings, to permit of a thorough circulation and dissemination of the flame, and of the influx of the requisite quantity of atmospheric air to properly support combustion, the adjustment being such that the circle of the center of the seat comes directly over the circle of the apertures of the burners.

L is a support for the handles of the soldering-irons, the die ends of which irons are placed upon the seat of the receptacle. The support is conveniently attached to the outer diaphragm.

M is an outer, and N an inner, hood connecting with a stack and suspended above the furnace. They may be of such arrangement and proportions as special practice may suggest.

O is a fender to protect the operator. It is preferably made to partially encircle the furnace and to rest and be movable upon the supply-pipes of the burners.

In order to regulate at will the circulation and dissemination of the flame and the supply of atmospheric air to support combustion, I employ, in practice, plugs, bolts, or loose rivets Z, which may be placed in the holes to the desired number, to properly regulate the number of holes left open. These plugs, being adapted to be removed, afford, as will be readily understood, a very perfect means of regulating the amount of air and flame space through the diaphragms. Such being a convenient construction of my invention, it is to be understood that in the employment of the same, in connection with my automatic heat and pressure apparatus hereinbefore mentioned, I so proportion the furnace that it shall be adequate to accommodate and heat such number of irons as are employed with said apparatus, while the speed of rotation imparted to it from said apparatus or otherwise shall be in conformity with the demand of the apparatus for hot irons.

The burners being set in action and the furnace put into rotation, the operator, from the

most convenient position, supplies the cold irons received from the source of supply to the rotating receptacle K, in the rotation of which they are heated to the required degree before they return to the point of their introduction.

The heat can be intensified or lessened at will by the regulating-cocks and disseminators.

The circulation and draft are free by reason of the perforated construction of the receptacle, the open central passage-way between the arms J, and the arrangement of the hoods.

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

1. As an improvement in benzine-furnaces for heating soldering-irons, a stationary frame-work supporting a series of benzine-troughs radially arranged about said frame-work, and each containing a benzine-burner, in combination with a circular receptacle for soldering-irons, constructed as shown and described, in line with and adapted to be continuously rotated above said burners, the arrangement being as described, so that the flame from the burners is caused to circulate throughout the receptacle as the same rotates above the burners, substantially as set forth.

2. In combination with the burners C, the adjustable flame-disseminators, as and for the purpose specified.

3. In combination with a central shaft, a circular receptacle for soldering-irons, constructed as described, supported upon radial arms branching from the shaft, which arms are disposed, as described, to leave a central passage-way in their midst, and adapted to be rotated by the shaft.

4. The circular receptacle K, consisting of a covered seat and depending diaphragms, both seat and diaphragms being perforated, and the diaphragms supplied with removable plugs or dampers, as and for the purpose set forth.

5. The central shaft, H, made hollow and perforated at its base, as and for the purpose specified.

In testimony whereof I have hereunto signed my name this 10th day of February, A. D. 1880.

GEORGE. H. PERKINS.

In presence of—

J. BONSALE TAYLOR,
C. BERKELEY TAYLOR.