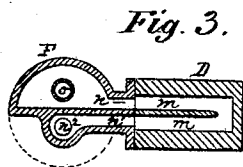
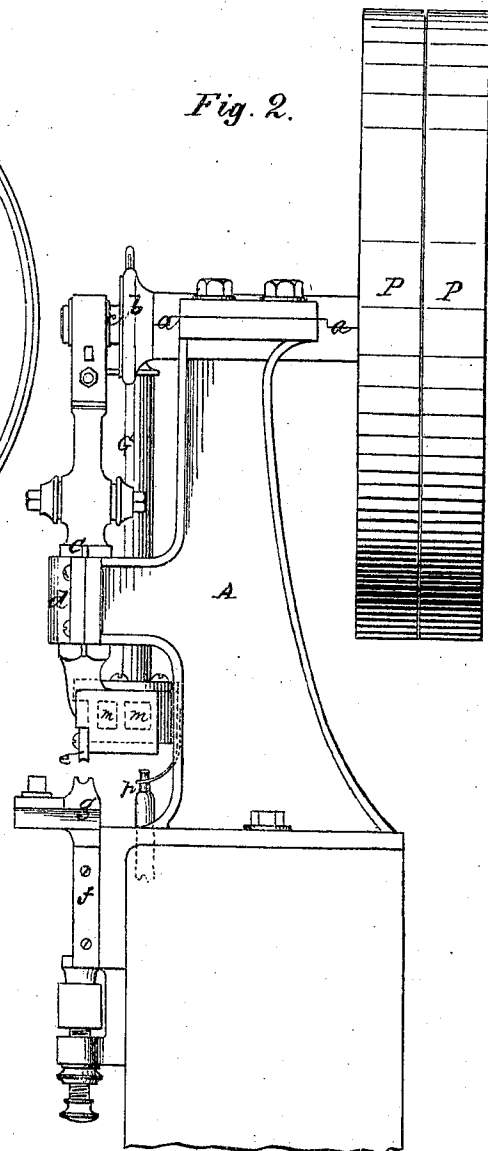
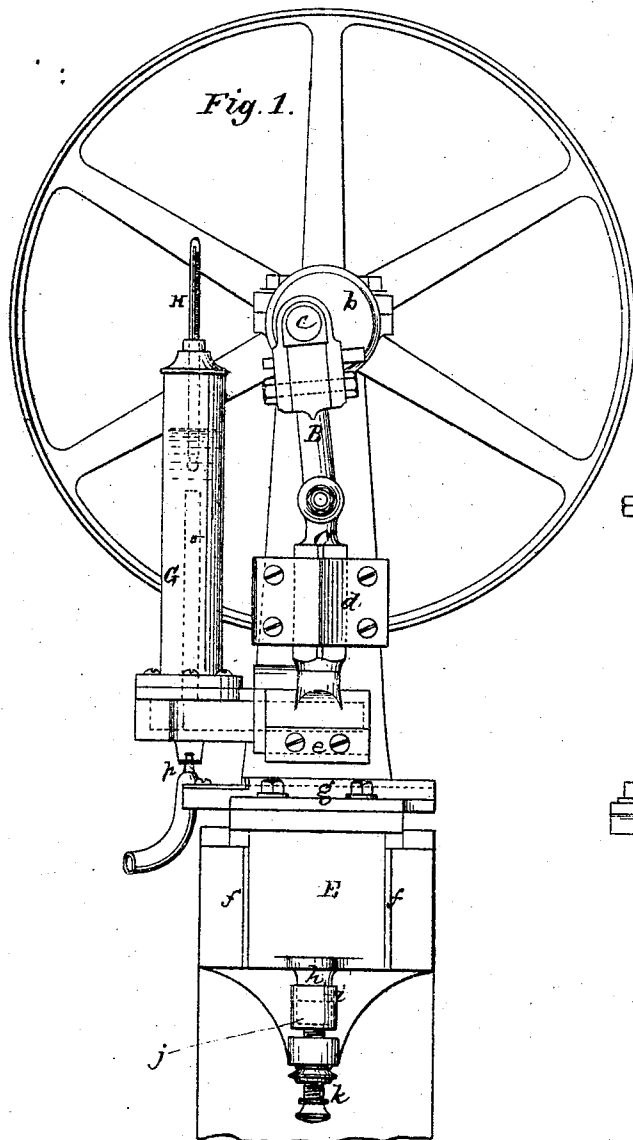


T. H. MÜLLER.

Improvement in Presses for Stamping Lead Pencils.

No. 123,925.

Patented Feb. 20, 1872.



Witnesses

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UNITED STATES PATENT OFFICE.

TEILE H. MÜLLER, OF YONKERS, NEW YORK, ASSIGNOR TO JOSEPH RECK-
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IMPROVEMENT IN PRESSES FOR STAMPING LEAD-PENCILS.

Specification forming part of Letters Patent No. 123,925, dated February 20, 1872.

To whom it may concern:

Be it known that I, TEILE H. MÜLLER, of Yonkers, county of Westchester, State of New York, have invented certain new and useful Improvements in Presses for Stamping Lead-Pencils and other Varnished Articles, of which the following is a specification.

My invention relates to presses for gilt-stamping varnished surfaces by pressing leaf metal or bronze-powder, by means of a heated die, into the varnished surface, whether of a wooden lead-pencil or other article; and it has reference to the construction of the die-head or stock, and to the method of heating the same in such manner as to produce and maintain an equable heat, which will cause the die to act with regularity and uniformity, to produce stamps of the desired quality and style. The object of heating the die is to soften the varnish to such an extent as to allow the metal leaf or bronze-powder to properly adhere. If the die is too hot, the varnish melts and even commences to boil, thereby giving an unclean appearance to the "stamp;" and if, on the other hand, the die be too cold, the metal will not adhere to the varnish, and the stamp is not properly gilded.

The heating of the die has up to the present time been effected in various ways, each more or less imperfect. Under one arrangement the head or stock was provided with a hole, into which a heated iron was slipped. By having a number of these irons, and changing them as they cooled, the die was kept heated. Another arrangement was to heat the die-stock or head by means of a gas-burner supported by a bracket attached to the head, and connected with the gas-supply by flexible tubing, so as to be free to move up and down with the head. By means of a stop-cock on the gas-pipe, the flame could be regulated or shut off when necessary, and the lump of metal of which the head was formed acted as a regulator against small variations of temperature. Another mode of heating has been by the introduction in various ways of steam into the head. The great defect in these various methods is that in each of them no means are provided for ascertaining with certainty and at once when the proper heat is attained, or for determining beforehand the correct temperature; but this can only be judged of and determined by the quality of the work produced.

It is the main object of my invention to remedy this defect, so as not only to preserve an equable heat during the process of the work, but to ascertain and determine beforehand—that is, before the stamping operation commences—when the die has attained the right heat.

The nature of my invention and the manner in which the same is or may be carried into effect, can best be explained by reference to the accompanying drawing, in which—

Figure 1 is a front elevation of a stamping-press, provided with a head or die-stock made in accordance with my invention. Fig. 2 is a side elevation of the same. Fig. 3 is a horizontal section of the head or stock detached.

While my invention relates exclusively to the means provided for heating the die, I have, however, thought it best to represent a complete machine or press for stamping lead-pencils, in order to show more clearly the relations which the head and die bear to the other portions of the apparatus. I will first make a general description of the press, and will then give more particular attention to that portion of it in which my invention is comprised.

The press consists of the frame A, carrying the crank-shaft *a*, provided at one end with fast and loose pulleys P, and at the other end with a crank-disk, *b*, having a wrist-pin, *c*. This crank imparts a vertical reciprocating motion to the die by means of the connecting-rod B, jointed to the square sliding bar C guided in ways *d*. On the lower end of the sliding bar is fastened the head D, to which the die *e* is attached. On the lower part of frame A, under the die, are formed dovetailed ways *f*, between which is located the piece E carrying the bed *g*, in which the pencil or other article to be stamped is placed, and capable of sliding vertically in said ways. The slide E at its bottom is provided with a small lug, *h*, which fits like a piston in the case *i* containing a rubber or spiral spring, *j*. The bottom of the casing rests on the regulating-screw *k*, by turning which the slide E may be raised bodily to adjust the pencil-bed with reference to the die. The spring *j* allows the slide and bed to yield when the die descends upon the pencil, permitting the die to remain in contact with the pencil for a sufficient time to soften the varnish, and enabling the bed to adjust it-

self to any slight inequalities in the size or shape of the articles which are being operated on by the die.

Having given a general description of the press, I will now describe more particularly that portion of it in which my invention is comprised. The die-head or stock D is made of metal, and is cast hollow, with a channel, *m*, running through it, somewhat like a horse-shoe in shape. To one end of the head is fastened a bracket or block, F, forming part of the head, and containing a continuation of this channel, as indicated at *n n'*. Upon the top of the block F is secured a tube or reservoir, G, into the bottom of which the channel *n'* opens through a hole or aperture, *n''*, formed in the top of block F. The channel *n* also opens into the reservoir, but not directly, as in the case of channel *n'*, but through a vertical tube, *o*, which extends up some distance into the reservoir, as indicated by dotted lines in Fig. 1. Below the tube *o*, and directly under the rear channel *n*, is placed a gas-burner, *p*, held to the head by a bracket, and communicating with the gas-supply through flexible tubing, which will permit it to rise and fall with the head. In lieu of the gas-burner, other suitable means for imparting heat to the rear channel *n* may be used. The top of the tube or reservoir G is closed by a suitable cover, through which I insert a thermometer, H, in such manner that its bulb or lower part shall be immersed in or surrounded by the liquid or fluid in the reservoir, as indicated by dotted lines in Fig. 1. The reservoir G is more especially designed to contain a liquid, by means of which the proper degree of heat is imparted to head and thence to the die. The action of the heat on the head is as follows:

If the reservoir and channeled head be filled with a liquid, (which should rise at all times above the top of the small tube *o*), and then the gas-burner under the rear channel *n* be lighted, the liquid in this place, becoming heated, and consequently lighter, will rise in the tube *b*; liquid from the channel *m* replaces this liquid, and in turn is replaced by liquid taken from the reservoir G through the opening *n''*. The liquid will, therefore, circulate continuously from the bottom of the reservoir into and through the horseshoe channel up through the tube *o*, and again into the reservoir, a constant circulation being thus maintained.

By the means described, the following important results are obtained:

First, by selecting liquids the boiling points of which correspond with the degree of heat needed, in order to operate properly upon the respective material or materials to be worked at the time, the workman has only to fill the reservoir with the proper liquid, light the gas, and then wait until the liquid boils; without further trial, experiment or delay, he may then proceed to stamp the pencils or other articles to be operated on. As long as the liquid is kept boiling, the press will be found to work satisfactorily, and the die will be maintained at the proper heat.

Second, by using a thermometer, the liquid may be kept at any desired temperature, (oils being used for high and water for low temperature,) and the operator is enabled to see any alteration in the temperature, and to rectify it before it becomes great enough to affect the working of the die.

Rapid circulation is necessary to insure an equal heating of long dies. When the heating is done by a gas-flame applied to a solid head, long dies are heated in the center much more than at the ends; but when a "circulating" head, such as above described, is used, the hot liquid passes along the whole length of the die, insuring an equal temperature throughout, and consequently an improved appearance of the stamp or impression.

In the above description of the invention, the heating agent named is a liquid. But in lieu of liquids, air and other fluids may be used. In case it is desired to use air, this can be done by providing a blower communicating through a small rubber tube with the upper end of pipe *o*. The current of air passing from the pipe *o* into the heated channel *n* becomes heated, and proceeding through the channeled head will heat the same. The temperature of the air can be ascertained by means of the thermometer, which will be surrounded by the heated air discharged into the reservoir from the channel through the opening *n''*. In this case the circulation is in a direction the reverse of that followed when liquids are used. An aperture is, of course, formed in the reservoir for escape of the air.

Having now described my invention, and the manner in which the same is or may be carried into effect, what I claim, and desire to secure by Letters Patent, is—

1. The combination, with the channeled die-head or stock, of a reservoir communicating with said channeled head, substantially as shown and described, to admit of the continuous circulation through the head of the various liquids that may be placed in the reservoir when subjected to the action of a gas-flame or other heating agent, as specified.

2. The combination, with the reservoir and die-head or stock, communicating with one another, substantially in the manner herein described, of a thermometer applied to the same, substantially as and for the purposes shown and set forth.

3. A die-head for stamping-presses, channeled or made hollow to receive a liquid or fluid through the medium of which the die is heated, in combination with a gas-flame or other heating agent applied to said head, for the purpose of raising the liquid or fluid therein contained to the proper temperature, substantially as shown and described.

In testimony whereof I have signed my name to this specification before two subscribing witnesses.

T. H. MÜLLER.

Witnesses:

LEOPOLD AUSBACHER,
A. SOLINGER.