

A. A. HILL.
 TIME CONTROLLED HEATING SYSTEM FOR LINOTYPE MACHINES.
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952,195.

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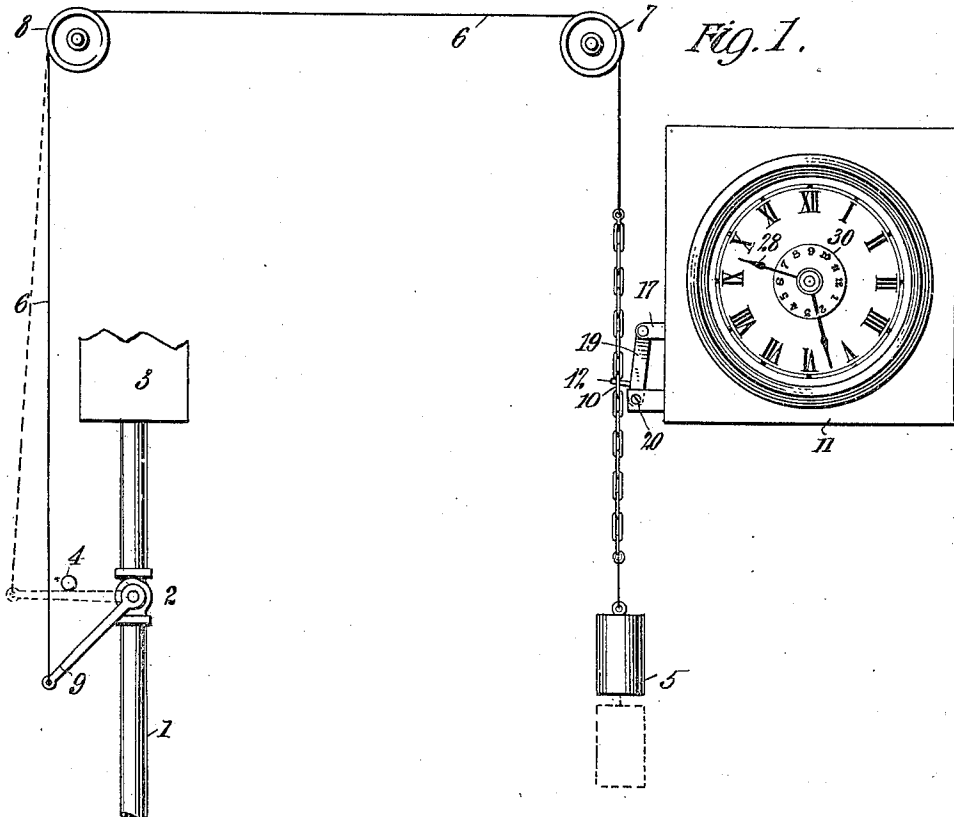


Fig. 2.

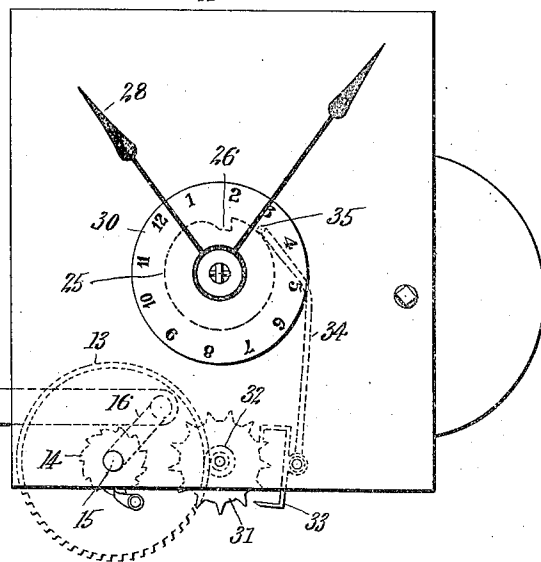
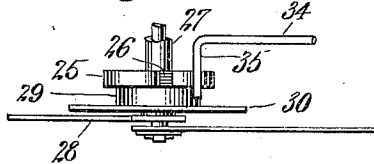


Fig. 3.



Witnesses:
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UNITED STATES PATENT OFFICE.

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TIME-CONTROLLED HEATING SYSTEM FOR LINOTYPE-MACHINES.

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To all whom it may concern:

Be it known that I, ARTHUR A. HILL, a citizen of the United States, residing at the city of New York, in the borough of Manhattan and State of New York, have invented certain new and useful Improvements in Time-Controlled Heating Systems for Linotype-Machines, of which the following is a full, clear, and exact description.

This invention relates to time controlled heating apparatus for the melting pot burners of linotype and similar machines.

In all printing and newspaper establishments where linotype machines are used, it is necessary to start the melting pot burners an hour or two before the compositing work is commenced, for the reason that a body of molten type metal is employed in the action of these machines, and time is required to melt this type metal to a state of sufficient fluidity. Commonly a workman is charged with the duty of arriving early each morning to light the various melting pot burners, so that everything will be ready for operation when the compositors arrive. This is a constant item of expense on the pay roll of the establishment and is furthermore uncertain, and exceedingly inconvenient in case anything happens to delay or absent the early employee.

It is the purpose of my present invention to provide an automatic means for starting the burners of the linotype machines a suitable period of time before the compositors are due to arrive, whereby the type metal is melted and everything ready to proceed with the compositing work at the proper hour or time.

While the foregoing is the particular or specific purpose of my invention, I do not of course desire to be limited or restricted to this particular field of use.

My invention consists in the features of construction and combination as hereinafter set forth and claimed.

In the drawings: Figure 1 is a partly diagrammatic view showing the general features of construction and arrangement of a device embodying the principles of my invention; Fig. 2 is a view showing some details of the clock mechanism. Fig. 3 is a detail plan view showing still further details of the clock mechanism.

Referring to the drawings, 1 designates a gas pipe having a cock or valve 2 by which the flow of gas in pipe 1 can be controlled.

3 is a burner fed from the pipe 1, and which may be associated with any ordinary linotype machine so as to properly heat the type metal pot or furnace thereof. I employ a constantly lighted burner 3 which may be supplied by leaving the cock 2 partly open, or in any other desired way.

The cock or valve 2 is designed to be actuated under certain circumstances by a clock mechanism, so as to turn on the gas to the burner 3. I have illustrated a weight 5 having a flexible connection 6 passing over pulleys 7 and 8 to an arm 9 of the valve 2, the arrangement being such that when the weight 5 falls, the flexible connection 6 is tensioned and the arm 9 brought from the full line position shown, into the dotted line position where the gas is turned on.

4 denotes a stop which may be anywhere suitably disposed to limit the movement.

The flexible connection 6 has one or more links or rings 10 therein, and which cooperate with the clock mechanism to normally sustain the weight and permit it to drop only under certain circumstances.

11 indicates a clock or clock mechanism of any suitable or desired character, and having a projecting pin, tooth or detent 12 which is normally inclined slightly upward, and which sustains the link or ring 10 previously mentioned. The clock mechanism is adapted to tilt the pin, tooth or detent 12 downwardly at a predetermined time or hour, thereby permitting the ring 10 to slide off of this pin, whereupon the weight 5 is free to fall and turn on the gas. The mechanism that I have shown for operating the detent 12 comprises a gear wheel 13 which has a ratchet connection 14 with a shaft 15, which in turn carries a crank arm 16 to which is attached a link 17 projecting laterally out from the clock casing.

19 denotes a lever arm pivoted to a part of the clock frame or casing at 20 and to which is rigidly fixed the pin or detent 12 previously referred to. The position of the pin 12 on the lever 19 is such as to be tilted upward when the lever 19 is pushed to the limit of its inward movement, *i. e.* in the direction to slip the ratchet connection 14. When the weight 5 is hung on the pin 12 as shown in Figure 1, a force is exerted on lever 19 tending to displace it in the opposite direction, *viz.*, into the dotted line position of Fig. 2. This movement is permitted to take place at a predetermined time or

hour as follows: 25 is a notched disk sleeved onto the arbor 27 which carries the hour-hand 28 of the clock. The disk 25 is made a part of a sleeve 29, having a dial 30 with 5 hour divisions indexed thereon. This sleeve 29 can be set at different angular positions on the arbor 27, but has sufficient friction to remain where it is set on the hourhand arbor during the subsequent working of the apparatus. 31 denotes a star or escapement wheel 10 driven by a pinion 32 from the gear wheel 13. This star wheel 31 is engaged by an escapement 33 having an arm 34 with a bent extremity 35 engaging the periphery of the disk 25. In a certain position of this disk, 15 the bent arm 35 is free to drop into the notch 26, whereupon the escapement 13 is free to vibrate, thereby permitting the wheel 13 to turn, and the arm 19 to move outward, all 20 under the influence of the impelling weight 5. As soon as the pin 12 is brought into its downwardly deflected position, the weight 5 is freed and acts to turn on the valve 2 in an obvious manner.

25 The apparatus is set to work at any predetermined time or hour by simply moving the dial 30 so that the division thereof designating the hour desired is beneath the hourhand 28.

30 The arm 19 may be restored whenever desired to its full line position shown, by a simple pressure, which slips the ratchet connection 14.

35 The gas, turned on to the burner 3 in the above manner, is lighted by the flame which is kept constantly ignited as already described. Of course any other igniting means could be employed if desired, or an electric

or similar heater might be used in place of a gas burner and which would be started by the mere closure of a circuit. It is obvious, 40 for example, that an electric switch might be connected to the arm 9 in place of the cock 2 wherever such electric heating system were employed.

45 It is obvious that a clock mechanism may be used adapted to cause the above actuation at any hour of the twenty four, if desired, instead of as shown, this guarding against a premature actuation during the afternoon 50 previous to the proper time desired.

What I claim is:—

In combination with a gas burner, a valve controlling the supply to said burner, a weight, a flexible connection between said 55 weight and valve, a projection upon which said weight may be suspended, a pivoted normally inclined arm carrying said projection, a clock having a notched wheel moving with one of the hands thereof, an escapement 60 released by said notched wheel, an escape wheel, a gear train adapted to be moved by said weight and controlled by said escapement, a crank connected with one of the axles of the gear train and a link connecting 65 the crank with said inclined arm whereby when the weight moves the train the inclined arm is shifted and the weight is permitted to fall and open the valve.

In witness whereof, I subscribe my signature 70 ture, in the presence of two witnesses.

ARTHUR A. HILL.

Witnesses:

WALDO M. CHAPIN,
JAMES D' ANTONIO.