S. R. OLDRIEVE.

Device for Heating Tools.

No. 203,554. Patented May 14, 1878.

Fig. 1.

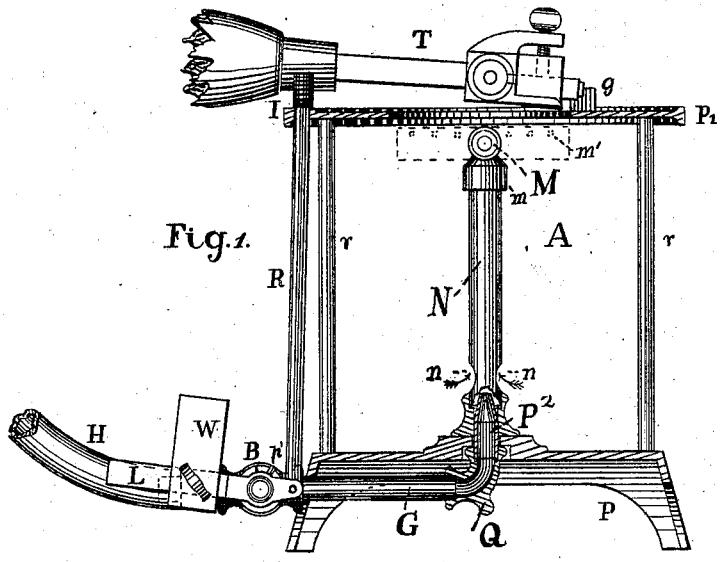


Fig. 2.

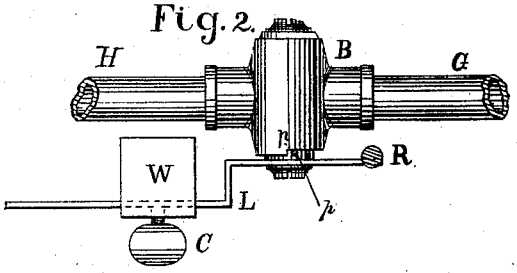


Fig. 3.

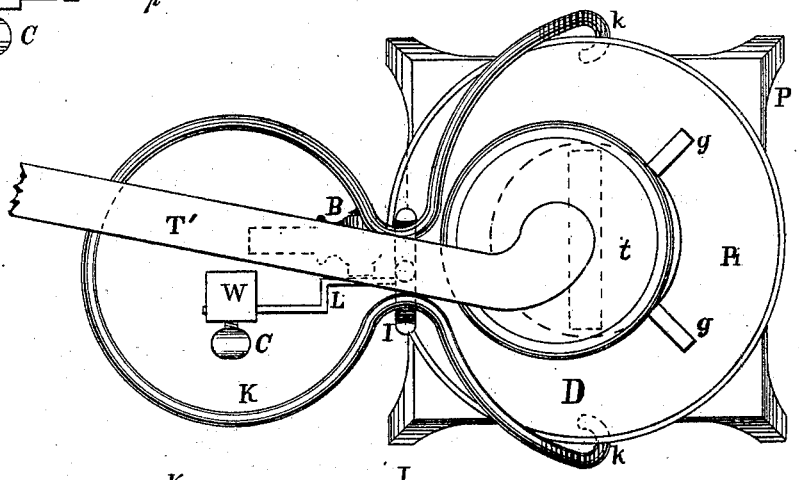
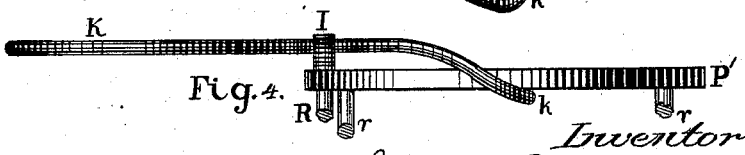


Fig. 4.



Attest

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UNITED STATES PATENT OFFICE.

SILVANUS R. OLDRIEVE, OF CINCINNATI, OHIO.

IMPROVEMENT IN DEVICES FOR HEATING TOOLS.

Specification forming part of Letters Patent No. **203,554**, dated May 14, 1878; application filed February 21, 1877.

To all whom it may concern:

Be it known that I, SILVANUS R. OLDRIEVE, of the city of Cincinnati, State of Ohio, have invented certain new and useful Improvements in Devices for Heating Tools, of which the following is a specification:

My invention has to do with that class of devices for heating tools which employ gas as the fuel for heating the tool, wherein the presence of the tool itself, when properly placed, operates to increase the flow of the gas and the amount of heat generated.

The first part of my invention relates to a new and very efficient burner, which is of cylindrical form and so arranged as to be capable of generating a very large amount of heat from a very small quantity of gas. This burner is also capable of being turned in any direction best adapted to convey heat to the entire tool.

The second part of my invention relates to a new and improved device for increasing the supply of gas, and consequently of heat, when the tool is placed upon the heater, and for diminishing the same when the tool is removed.

The arrangement of the device is such that when the tool is removed therefrom the supply of gas will automatically be diminished, and for this purpose is made so adjustable as to be capable of performing the latter function, no matter what the weight of the tool or tool and holder may be that is placed on said heater.

The third part of my invention consists of a new holder for extending the length of the tool-rest, intended to be used in connection with long-handled tools.

In the accompanying drawings, Figure 1 is a vertical central section of a machine embodying my invention, except that the device for automatically diminishing the supply of gas and the tool are not sectioned. Fig. 2 is a top view of the device employed to automatically cut off the supply of gas; and Fig. 3 is a top view of the machine embodying my invention, together with my improved holder, to be used in combination with the same.

A represents generally the frame of the machine; P, the base of same, provided with legs, as shown, and P^1 the top of same. This top is annular, and has a hole in the center of sufficient diameter to allow that part of the tool to be heated to be fully exposed to the flame of the burner. Three or more legs, *r*, at suitable distances, are stationed in the base P and support the top P^1. Studs *g* projects from the top P^1, as shown, for the purpose of elevating the tool to such a height above the burner as that said tool shall receive the greatest amount of heat. At the edge of the top, and opposite where these studs *g* are, is a rest, I, hollowed at top sufficiently to receive and retain the handle or upper portion of the shank of the tool to be heated. This rest I is supported by a single upright, R, whose lower end is connected to the end of a lever, L. The latter is attached by a set-screw to the outer end of a cock (here circular) working within the joint B, connecting the supply gas-pipe H and the pipe G, which supplies the gas to the burner. This set-screw permits the lever-weight to be set at any desired distance along the lever L, while a stop, *p'*, on the rotating portion of the cock, coming into contact with a shoulder, *p*, on the joint B, prevents the cock from rotating too far in that direction. Lever L extends beyond the cock to the right, and is preferably bent forward, as shown, to allow room for the weight W, which slides upon the lever L, and is set at the desired point on the same by means of the set-screw C.

Pipe G connects with elbow-joint Q, in the top of which is fitted a nozzle, P^2, which delivers the gas into the center of pipe N, immediately below the air-holes *n*, located in opposite sides of the latter pipe.

The burner M is of cylindrical form, and of a length sufficient to heat all the portion of the tools intended to be heated. This burner is provided with a row of holes, *m'*, on each side, near its top, for the escape of the mixed gas and air to be burned.

The burner is mounted on an annular support, *m*, which rotates freely on the top of pipe N, and is capable of being turned in any direction on a horizontal plane.

T represents one form of tool taken for illustration. T' is another style of tool—viz., a lettering-disk, *t*, rotating in shank T'. This tool is much longer than tool T, and, as it has a very long handle, if placed in the rest, would tip backward, the handle overbalancing the portion over the machine. In such case the

detachable holder K is first added, the ends *k* being placed to catch under the edges of the top, and the neck falling within and resting on the rest I, while the ring portion beyond the neck affords a rest for the tool, thus placing the fulcrum of rest farther out on the handle of the tool.

In operating the heater, proceed as follows: Set the weight W far enough out on the lever L to cause the rest I to rise when the tool is lifted. The lever L is to be so set with reference to the cock that it shall, even when the stop *p* is against the shoulder of joint B, still admit a very little quantity of gas to the burner. When the tool is taken off the rest will rise.

When the holder K is on the rest the weight must be set farther out on lever L in order to raise the rest. The gas is then admitted into pipe H, and lighted as it issues from the burner. That portion of the tool which is to be heated is then placed over the burner, the forward end resting on studs *g* and the handle or shank upon the rest, or, if a long tool, upon the rest and holder. The weight of the tool will depress the rest I and the upright R and the front end of lever L, thus causing the gas to flow rapidly through the pipe G and into the burner, causing a much greater combustion of the same.

The air, entering the orifices *n*, mingles with the gas, increases its heating power, and at the same time economizes the use of the gas. The cylindrical burner M, with its perforations *m'*, I find a very valuable form of burner, and esteem it the most desirable where an economical use of gas, together with an intense heat, is desired.

As before intimated, the burner is rotatable upon the upright pipe N, and thus the length of the burner may be placed so as to cause the length of the flame to be parallel to the length of the tool to be heated. Thus the latter is more effectually heated.

In the drawings, the tool T, Fig. 1, is for lettering the backs of books, and contains a row of types, the length of the row running across the machine, in which case the burner is placed as shown. Where the length of the tool to be heated runs from front to rear, the burner is placed as indicated by the dotted lines in the same figure.

Instead of the weight W, a strong spring, suitably attached, may be employed to elevate the rest when the tool is removed from it.

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

1. Machine A, consisting of base P, uprights *r*, top P^1, pipe N, burner M, rod R, lever L, and weight W, substantially as and for the purposes set forth.

2. The detachable holder K, substantially as and for the purposes set forth.

3. The rotating cylindrical burner M, furnished with rows of apertures *m'* in its periphery, substantially as set forth.

4. Adjustable rotating burner M, in combination with pipe N, furnished with apertures *n*, substantially as set forth.

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