2 Sheets—Sheet 1.

P. BRADLEY.

GAS APPARATUS FOR HEATING TOOLS.

No. 191,921. Patented June 12, 1877.

Fig. 1.

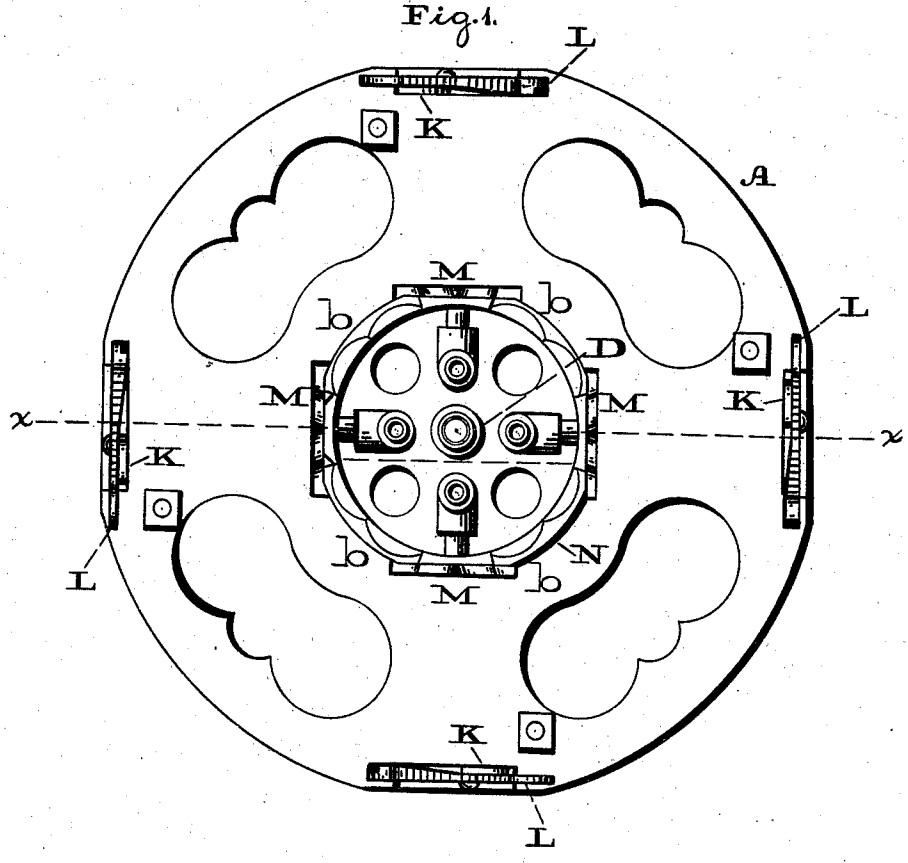
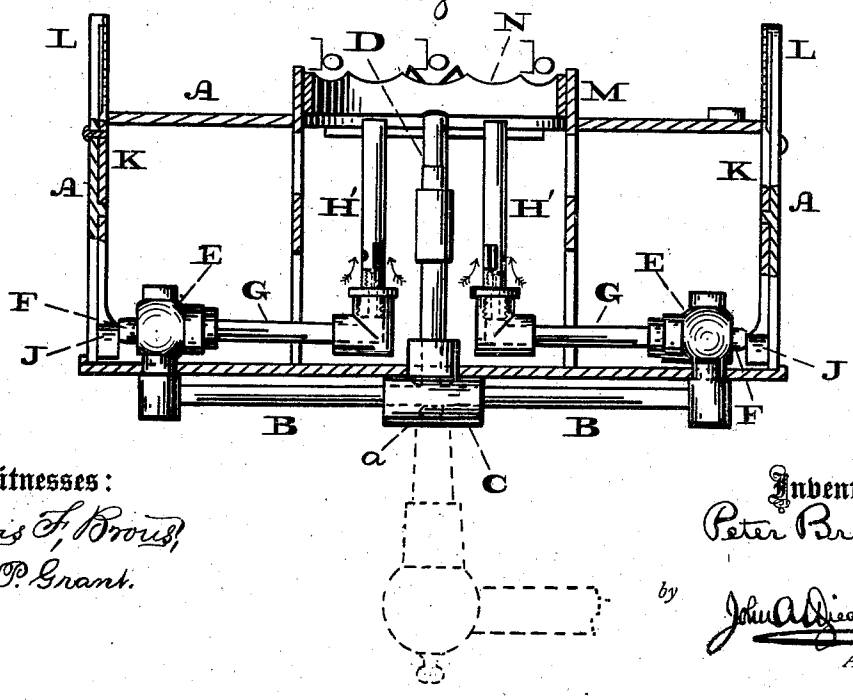


Fig. 2.



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2 Sheets—Sheet 2.

P. BRADLEY.

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Fig. 3.

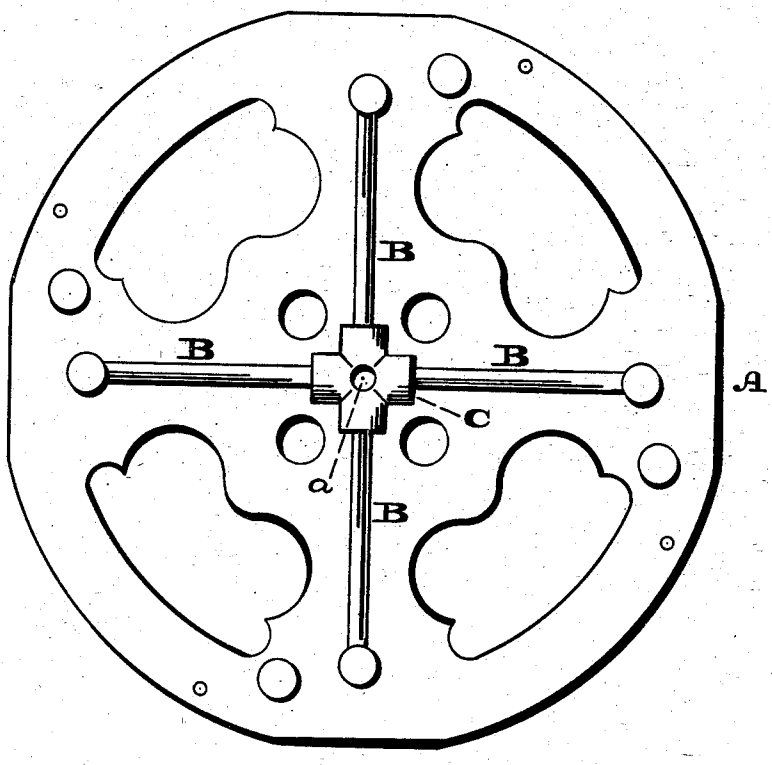


Fig. 4.

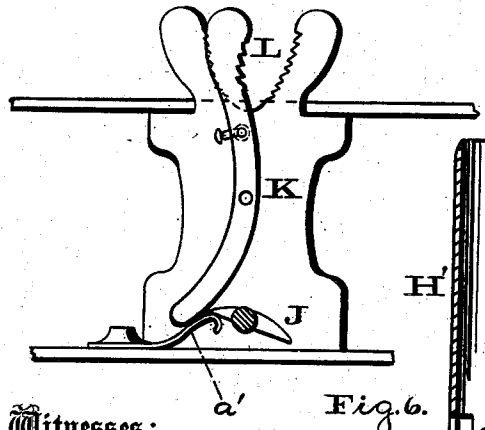


Fig. 5.

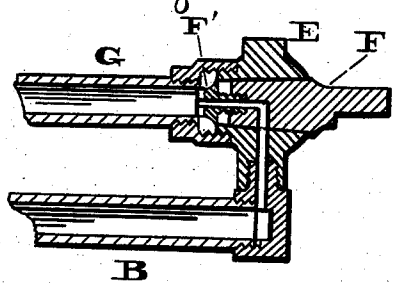
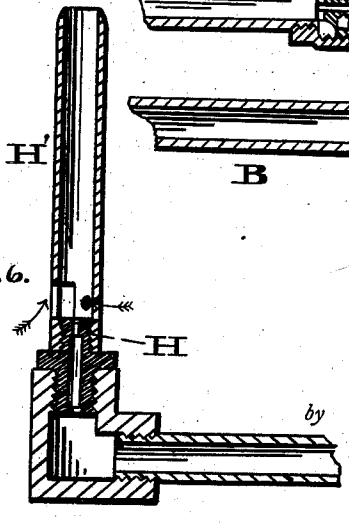


Fig. 6.



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UNITED STATES PATENT OFFICE.

PETER BRADLEY, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR OF ONE-HALF HIS RIGHT TO JAMES BRADLEY, OF SAME PLACE.

IMPROVEMENT IN GAS APPARATUS FOR HEATING TOOLS.

Specification forming part of Letters Patent No. **191,921**, dated June 12, 1877; application filed May 3, 1877.

To all whom it may concern:

Be it known that I, PETER BRADLEY, of the city and county of Philadelphia, and State of Pennsylvania, have invented a new and useful Improvement in Gas Apparatus for Heating Tools, which improvement is fully set forth in the following specification and accompanying drawings, in which—

Figure 1 is a top or plan view of the apparatus embodying my invention. Fig. 2 is a vertical section, in line *x x*, Fig. 1. Fig. 3 is a bottom view thereof. Fig. 4 is an inside view of a detached portion thereof. Figs. 5 and 6 are vertical sections of detached portions enlarged.

Similar letters of reference indicate corresponding parts in the several figures.

My invention relates to an apparatus for heating two or more tools with gas; and it consists of a jet of gas, continuously burning, and two or more auxiliary jets, to which gas will be admitted by means of valves connected to levers, either of which is operated by the application or weight of the tool thereagainst, the gas admitted to the auxiliary jet being ignited by the flame of the continuously-burning jet. It also consists of valves having perforated screw-plugs, which hold the valves to their seats, and to the shells or branches, and permit the passage of the auxiliary jets. It also consists of a central band for supporting tools of various shapes and numbers.

Referring to the drawings, A represents a frame or stand, to the base of which are fitted two or more radiating-pipes, B, which are united at one end to a central branch, C, from which rises a pipe or main jet, D, said branch being perforated, as at *a*, for application or attachment of a pipe, tube, or other conveyer of gas from the service-pipe or other place of supply. (See dotted lines, Fig. 2.) The other end of such pipe B is connected to a branch, E, secured to the base of the frame, each branch having within it a cock, F, and connected to it a pipe, G, which extends parallel with the adjacent pipe B. The inner end of the pipe G carries a jet, H, arranged in proximity of the length of the main jet D, and from said jet H rises a perforated pipe, H′, the height of the pipe H′ being about equal to that of the jet D. Each cock F has a right-angular passage, one of which communicates with the pipe B, and the other with the pipe G; and it is evident that, by properly turning the cock, the communication of the pipes B G may be opened or closed. Into the center of the inner end of the cock there is screwed a plug, F′, whose head overlaps a shoulder at the base of the valve-seat, whereby the valve will be held properly to its seat, and it is prevented from displacement from the branch or shell E, and said plug F′ is also perforated, so that it does not interfere with the passage of gas into the pipe G. The stems of the cocks F have connected to them wings J, with which engage levers K, whose axes are at the sides of the stand A, and their upper ends in contact with bifurcated arms L, which rise from the sides of the stand above the top plate thereof, the normal position of the upper ends of the levers being between the space of the bifurcations of the arms L, springs *a′* being employed to return and hold the levers to and in said position. Around the space of the central jet D and pipes H′ of the jets H there are arranged holds or supports M, which are located in line with the arms L, and in contact with said holds there is a band, N, whose upper edge or face is scalloped or corrugated, as at *b*.

The operation is as follows: The stand A will be fitted, by means of the perforated branch C, on a gas-bracket; or it may be properly supported, and have a gas attachment secured to said branch. The gas will be turned on so as to enter the main jet D, where it will be ignited. Gas also enters the pipes B; but it cannot enter the pipes G, owing to the closed condition of the cocks F. When a tool is to be heated, its stock or body will be brought over one of the pipes H′ and rested on one of the supports M, its handle being pressed against one of the levers K, so as to be held in the bifurcation of the arm L. This turns and opens the respective cock F, whereby gas enters the connected pipe G and reaches the jet H, from whence the gas ascends through the pipe H′, and it is ignited by the flame of the main jet D, said flame reaching the stock of the tool, and it is intensified by the large

volume of air entering the perforations or openings of the pipe H′, as shown by the arrows, Figs. 2 and 6. When the tool is removed the lever K returns to its normal position, thus closing the cock and shutting off the gas from the jet H, but without disturbing the gas of the main jet, which continues to burn, in order to ignite gas that may again be directed into one or all of the jets H.

By means of the band N a number of tools may be held over the flame, and tools of various shapes may be heated.

The arrangement of the cocks F is such that they are removed from heat, and will not stick or bind on their seats.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. The gas-conducting pipes B and G and intermediate cocks F, in combination with the central branch C, main jet D, and auxiliary jets H, substantially as and for the purpose set forth.

2. The combination, with the pipes B G and cocks F, of the perforated screw-plugs F′, substantially as and for the purpose set forth.

3. The combination, with the jets D H, of the band N, substantially as and for the purpose set forth.

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