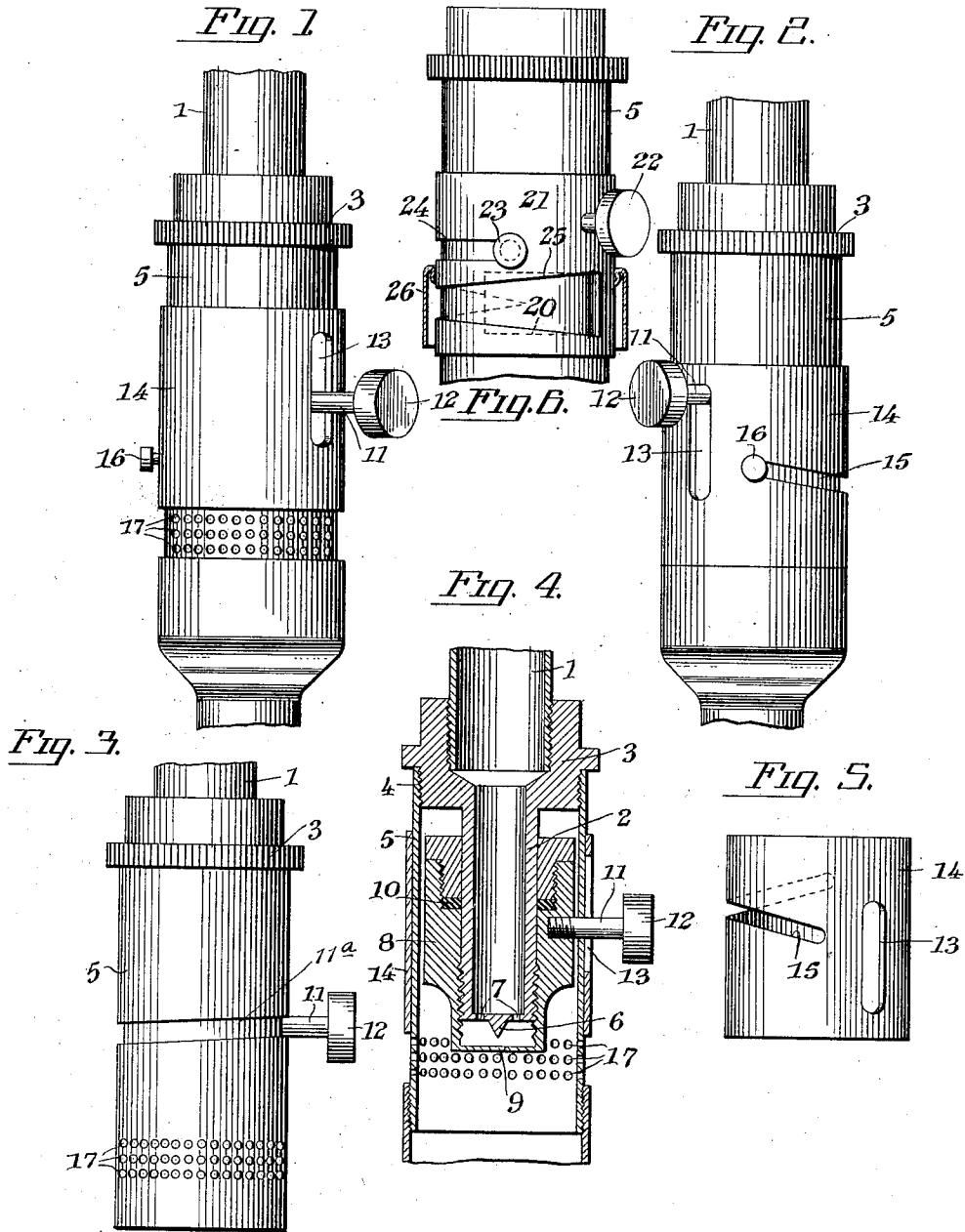


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AIR AND GAS REGULATOR.  
APPLICATION FILED JUNE 28, 1912.

1,050,617.

Patented Jan. 14, 1913.



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# UNITED STATES PATENT OFFICE.

PAUL CRAMER, OF BERCK-PLAGE, FRANCE.

## AIR AND GAS REGULATOR.

1,050,617.

Specification of Letters Patent.

Patented Jan. 14, 1913.

Application filed June 28, 1912. Serial No. 706,480.

*To all whom it may concern:*

Be it known that I, PAUL CRAMER, a citizen of France, residing at Berck-Plage, Pas de Calais, France, have invented new and useful Improvements in Air and Gas Regulators, of which the following is a specification.

This invention relates to air and gas regulators for incandescent or Bunsen burners and the principal object of the invention is to provide a simple and efficient device, which by the simple movement of the lever, properly regulates the entrance of air in accordance or in the proper proportion with the gas fed so that a maximum amount of heat or illumination may be obtained with a minimum use of gas.

Further objects of this invention will appear as the following specific description is read in connection with the accompanying drawing, which forms a part of this application, and in which:—

Figure 1 is a side elevation. Fig. 2 is a similar view taken from the opposite side and with the lever in its opposite position. Fig. 3 is an elevation similar to Fig. 1 with the air regulating sleeve removed. Fig. 4 is a vertical sectional view. Fig. 5 is an elevation of the air regulating sleeve removed. Fig. 6 is a detailed side elevation partly in section showing a modified form.

Referring more particularly to the drawing, 1 represents an ordinary gas supply pipe to which is secured a gas feeding tube 2 having a flanged head 3 with the exterior portion thereof threaded on one side of the flange, as shown at 4, to receive a mixing tube 5. The tube 2 is provided in its center portion with a needle point 6 and on opposite sides of the needle point with feed slots 7, through which the gas passes. This tube is also externally threaded and mounted thereon is a valve body 8 which is provided with a central aperture in its end, as shown at 9, adapted to be entered and closed by the needle point 6. This valve body is provided with a packing gland 10 and has its movements controlled upon the threaded stem of the tube 2 by means of an operating rod 11 having a button 12 on its outer end. This rod or pin 11 projects through a slot 11<sup>a</sup> in the mixing tube 5, the slot being preferably of a width equalling the di-

ameter of the rod and being formed with a pitch corresponding to the pitch of the threads on the tube 2. The rod 11 also passes through a vertical slot 13 formed in the air regulating sleeve 14 which, as shown, is provided with a diagonal slot 15 engaged by a pin 16 threaded into the mixing tube 5. The mixing tube, as shown, is provided with a plurality of openings 17 which are controlled by the movements of the sleeve on the mixing tube. When the lever is moved in one direction or toward the right, as shown in Fig. 1, the valve body will be turned upon the tube 2 so as to cause the needle point to enter and close the aperture 9. Simultaneously with this action, the air regulating sleeve is rotated by the rod 11 engaging one of the walls of the vertical aperture 13 and the same moved downwardly over the mixing tube to close the apertures 17 therein by reason of the fact that one wall of the slot 15 is engaged by the pin 16. This moved, as before stated, simultaneously cuts off the gas and air and the opposite movement opens the valve and also the air ports in proportion to the flow of gas. In this manner, the maximum amount of air is used in proportion to the flow of gas.

In the modification shown in Fig. 6, the mixing tube 5 is provided with an enlarged opening 20 which is adapted to admit air to the mixing tube. This opening is controlled by a sleeve 21 horizontally movable on the mixing tube by means of an operating button or pin 22 which is engaged with the valve 8, as is usual, and passes through an aperture in the sleeve 21. The sleeve is held in its horizontal position by a pin 23 which is secured to the mixing tube and passes through a slot 24 in the sleeve 21. The sleeve 21 is provided with a tapering aperture 25 which operates over the aperture 20 and regulates the amount of air supplied to the mixing tube and covering this slot is a shield 26 which prevents direct inflow of the air.

What is claimed is:—

A regulator for incandescent burners comprising a mixing tube having apertures therein, a tubular head connected to the same and adapted to be connected to a source of fuel supply, an apertured valve

body threaded upon said tubular head with-  
in the mixing tube, a needle carried by the  
tubular head for closing the aperture in the  
valve body, means for rotating the valve  
body upon the tubular head, a regulating  
sleeve mounted for rotation on the mixing  
tube and operated by the valve operating  
means, and means to cause said sleeve to re-

ciprocate over the apertures in the mixing  
tube when the same is rotated thereon. 10

In testimony whereof I affix my signature  
in presence of two witnesses.

PAUL CRAMER.

Witnesses:

RENÉ GOLTRANO,  
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Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents,  
Washington, D. C."