

1,360,431.

Fig. 1.

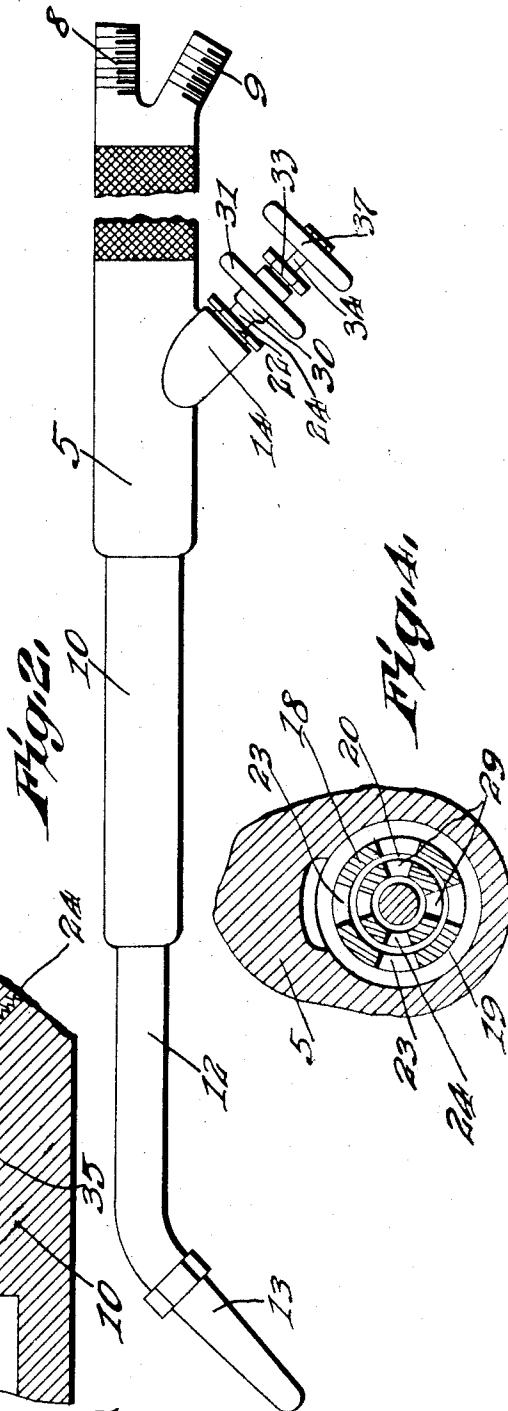


Fig. 2.

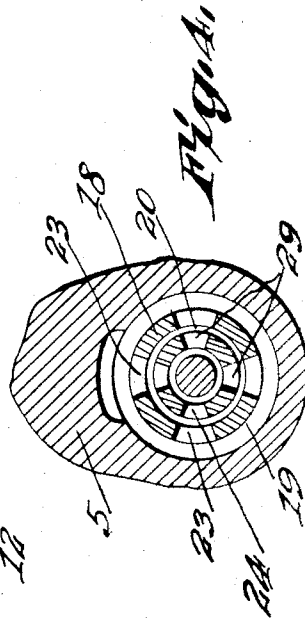


Fig. 4.

C. Molas,

Inventor

By
Norman J. Whitaker
his Attorney

UNITED STATES PATENT OFFICE.

CLODION MOLAS, OF LOS ANGELES, CALIFORNIA, ASSIGNOR, BY MESNE ASSIGNMENTS,
TO CALIFORNIA BURDETT OXYGEN COMPANY, A CORPORATION OF CALIFORNIA.

OXYGEN-ACETYLENE WELDING-TORCH.

1,360,431.

Specification of Letters Patent.

Patented Nov. 30, 1920.

Application filed March 29, 1918. Serial No. 225,512.

To all whom it may concern:

Be it known that I, CLODION MOLAS, a citizen of the Republic of France, and a resident of Los Angeles, in the county of Los Angeles and State of California, have invented new and useful Improvements in Oxygen-Acetylene Welding-Torches, of which the following is a specification.

This invention relates to oxygen acetylene welding torches.

An important object of the invention is to provide in a device of the above mentioned character a means whereby what is commonly known as "back-firing" will be eliminated to the highest possible degree.

A further object of the invention is to provide in a device of the above mentioned character a means whereby the device as a whole may be used to produce equally as an efficient result when operating under a low pressure supply of oxygen or gas or when a high pressure is employed.

A further object is to provide in a device of the above mentioned character a means whereby the oxygen or gas supply may be regulated independently with respect to each other thereby enabling the operator to maintain an even volumetric flow of oxygen or gas regardless of the supply pressure of either.

Another object of the invention is to provide in a device of the above mentioned character a means whereby either the oxygen or gas supply may be easily regulated independently with respect to each other without necessitating a discontinuance in the use of the device by the operator thereof.

Another object is to provide a device of the above mentioned character which is simple in construction, inexpensive to manufacture, strong, durable, and reliable in operation.

Other objects and advantages of the invention will be apparent during the course of the following description.

In the accompanying drawings, forming a part of this specification and in which like numerals are employed to designate like parts through the same,

Figure 1 is a longitudinal sectional view of a device embodying my invention,

Fig. 2 is a side elevation of the same,

Fig. 3 is an enlarged detail sectional view of a valve mechanism, and,

Fig. 4 is a sectional view taken on line 55 4—4 of Fig. 1.

In the drawings, wherein for the purpose of illustration is shown a preferred form of my invention, the numeral 5 indicates a main body of the device provided therein with 60 longitudinally extending passages 6 and 7, the passage 6 being adapted to be supplied with acetylene or other gas, a suitable supply of which is connected with a screw-threaded nipple 8 while the passage 7 is 65 adapted to be supplied with oxygen, a suitable supply of which is connected with a screw-threaded nipple 9. To one end of the main body 5 is connected an adjustable pipe section 10 provided centrally therein with a 70 longitudinally extending opening 11. To the forward end of the pipe section 10 is connected a second pipe section 12 having suitable connection with the conventional form of nozzle 13. The main body 5 is 75 provided with an angularly disposed valve chamber 14 communicating with the passage 7 as shown. This valve chamber 14 is provided with a counterbore 15 extending an appreciable distance into the main body 5 80 and communicating with the passage 6 and the duct 16 having connection with the passage 11 provided by the pipe section 10. It will be noted that the counterbore 15 is slightly tapered at the jointure of the pas- 85 sage 6 and the duct 16 therewith. Within the valve chamber 14 there is fitted a packing ring 17 upon which a bushing 18 is imposed, the bushing 18 being provided upon its peripheral face with a groove 19. This 90 bushing 18 is provided interiorly thereof with a circular depression 20. Upon the outer end of the bushing 18 is disposed a second packing ring 21 maintained in engagement with a screw-threaded plug 22 carried 95 within the valve chamber 14 as shown. A plurality of apertures 23 provided within the bushing 18 serve to connect the groove 19 with the depression 20. An elongated valve sleeve 24 is carried by the screw-threaded 100 plug 22 and projects into the counterbore 15 and is maintained therein by screw-threaded engagement of the same with the main body 5 as shown at 25. This elongated sleeve 25 is provided with a tapered end 26 having a 105 passage 27 provided therein, which passage is adapted to communicate the duct 16 with the interior 28 of the sleeve 24. A plurality

of openings 29 provided by the sleeve 24 serve to maintain communication between the interior 28 of the sleeve and the passage 7 through the apertures 23 as will be readily understood when considering the drawings in connection with the hereinafter described operation of the device as a whole. The outer end of the sleeve 24 is provided with a head 30 to which is secured a hand-wheel 31. This head is formed with an opening therein to receive a packing ring 32 maintained in engagement with a screw-threaded plug 33 carried therein. An elongated needle valve 34 is rotatably carried within the screw-threaded plug 33 extending into the sleeve 24 and is provided with a tapered end 35 adapted to seat within the opening 27 as clearly shown in Fig. 1. The needle valve 34 is provided substantially intermediate its ends with screw-threads having screw-thread engagement with the interior of the sleeve valve 24 as shown at 36 while the outer end is provided with a hand-wheel 37, the function of which will be readily understood when considering the hereinafter described operation of the device as a whole.

In use, the operation of the device is as follows: Acetylene or other gas and oxygen is supplied to the passages 6 and 7, respectively, in a conventional manner, the acetylene passing into the counterbore 15 and then into the duct 16, assuming of course, that the valve sleeve 24 is maintained in the position shown in Fig. 3. As the oxygen passes through the passage 7 it is directed into the interior 28 of the sleeve valve 24, through the apertures 23 and openings 29 provided by the bushing 18 and the sleeve valve 24, respectively, whereupon it passes onwardly through the sleeve valve 24 and is ejected therefrom through the opening 27, assuming of course, that the needle valve 34 is maintained in the position clearly shown in Fig. 3, whereupon the oxygen is mixed with the acetylene or other gas in its passing from the passage 6 into the opening 16. The oxygen and acetylene and other gas having been mixed at the jointure of the passage 6 and duct 16 with the counterbore 15 pass onwardly through the duct 16 and into the opening 11 whereupon it is directed through the pipe section 12 into and out of the nozzle 13 in the conventional manner. In considering the accompanying drawings together with the specification of the same it will be readily understood that a very delicate adjustment may be had of either the oxygen or the acetylene or other gas by adjusting the sleeve valve 24 through the instrumentality of the hand-wheel 31 or by adjusting the needle valve 34 through the instrumentality of the hand-wheel 37.

It is to be understood that the form of my invention herewith shown and described is to be taken as a preferred example of the

same, and that various changes in the shape, size and arrangement of parts may be resorted to without departing from the spirit of the invention or the scope of the subjoined claims.

Having thus described my invention, what I claim as new and desire to secure and protect by Letters Patent of the United States, is:

1. A device of the character described comprising a main body provided with a duct, a plurality of passages, a valve chamber and a counterbore; a bushing in said valve chamber having openings there-through in communication with one of said passages, an adjustable sleeve valve carried within said counterbore and extending outwardly through said bushing and through said valve chamber, said sleeve valve being adapted to sever communication between said duct and one of said passages and having openings therein in open communication with the openings in the bushing; an adjustable needle valve carried within said sleeve valve and adapted for severing communication between said duct, one of said passages and the remainder of said passages; a packing ring carried within said valve chamber at each end of said bushing; and means for retaining said bushing and packing rings within said valve chamber.

2. A device of the character described comprising a main body provided with a duct, a plurality of passages, a counterbore and a valve chamber, said duct and passages being arranged for communication one with the other; an adjustable sleeve valve having openings therein carried within said counterbore and extending outwardly through said valve chamber, said sleeve valve being adapted to sever communication between said duct and one of said passages; a bushing on said sleeve valve having openings therein communicating with the openings in said sleeve valve, means for preventing the escape of gas along said sleeve valve beyond the ends of said bushing; a head carried by said sleeve valve at the other end thereof; an adjustable needle valve carried within said sleeve valve and adapted for severing communication between said duct, one of said passages and the remainder of said passages, said needle valve extending outwardly through said head; a packing ring carried within said head and encircling said needle valve; and means for retaining said packing ring within said head.

3. A device of the character described comprising a main body provided with a valve chamber communicating at its inner end with a mixture duct and having a passage for acetylene or other gas communicating with the valve chamber at its inner end adjacent the duct and having a passage for oxygen communicating with the valve cham-

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ber, a sleeve valve arranged to close communication between the acetylene passage and the duct, said sleeve valve being provided with openings therein, a bushing on
5 said sleeve valve having a plurality of openings therethrough forming passages from said oxygen passage to the openings in the sleeve valve, means for preventing the flow of oxygen beyond the ends of said bushing,
10 and a needle valve in said sleeve valve for controlling the passage of oxygen from the interior of the sleeve valve to said duct.

4. A device of the character described comprising a body having a mixture duct
15 and a valve chamber, said body also having an acetylene or other gas supply passage and an oxygen supply passage, a sleeve valve in said valve chamber, having a conical end
20 formed in the inner end of said valve cham-

ber, to regulate the passage of acetylene or other gas from its supply passage to said duct, a bushing on said sleeve valve having a plurality of openings therethrough communicating at their outer ends with a cir- 25
cular groove and at their inner ends with a circular depression, said groove and depression being formed in said bushing and said groove being in open communication with the oxygen supply passage, said sleeve valve 30
having a plurality of openings in its walls arranged to cooperate with the depression in the bushing to vary the flow of oxygen through the bushing, and a needle valve within said sleeve valve arranged to control 35
the passage of oxygen to said duct from the interior of the sleeve valve through an opening in the inner end of the sleeve valve.

CLODION MOLAS.