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PATENTED AUG. 4, 1908.

F. JOTTRAND & P. LULLI.

BLOWPIPE FOR CUTTING METAL PLATES, PIPES, AND THE LIKE.

APPLICATION FILED JAN. 15, 1907.

2 SHEETS—SHEET 1.

Fig. 1.

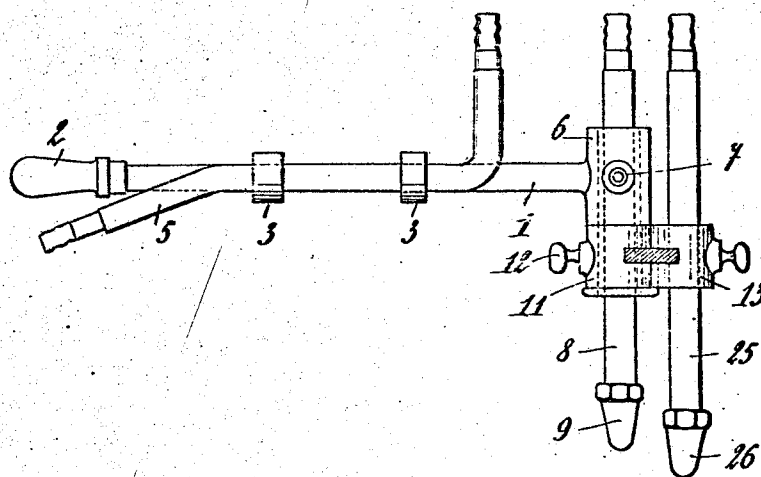
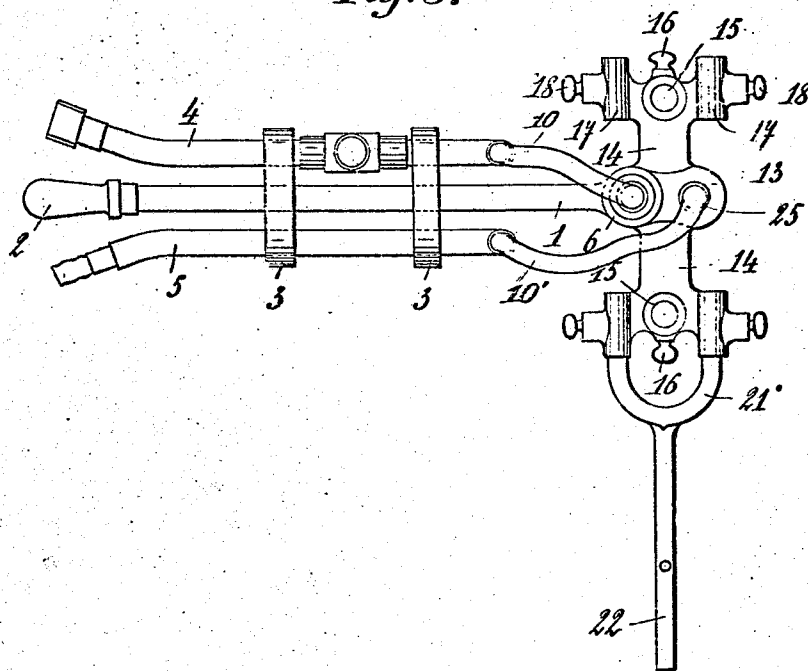


Fig. 3.



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Fig. 2.

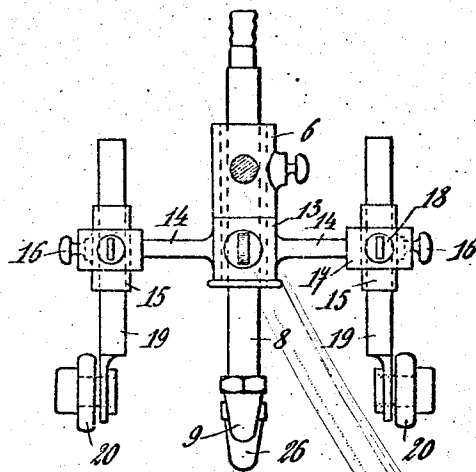


Fig. 4.

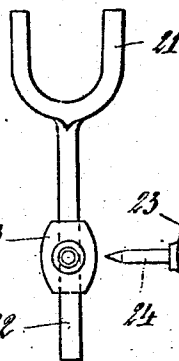
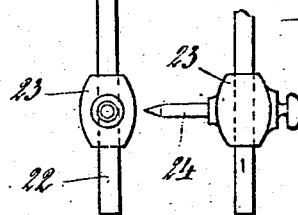


Fig. 5.



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UNITED STATES PATENT OFFICE.

FELIX JOTTRAND AND PRIMO LULLI, OF UCCLE, NEAR BRUSSELS, BELGIUM, ASSIGNORS TO
SOCIÉTÉ ANONYME L'OXHYDRIQUE INTERNATIONALE, OF BRUSSELS, BELGIUM.

BLOWPIPE FOR CUTTING METAL PLATES, PIPES, AND THE LIKE.

No. 895,026.

Specification of Letters Patent.

Patented Aug. 4, 1908.

Application filed January 15, 1907. Serial No. 352,367.

To all whom it may concern:

Be it known that we, FELIX JOTTRAND and PRIMO LULLI, respectively, subjects of Belgium and Italy, residing at Uccle, near Brussels, Belgium, have invented new and useful Improvements in Blowpipes for Cutting Metal Plates, Pipes, and the Like, of which the following is a specification.

This invention relates to appliances of the kind which are described in the former patent No. 831078 dated Sept. 18th, 1906 and which are used for cutting sheet metal, pipes and other objects by means of a heating flame and a jet of oxygen serving to oxidize the heated metal and to cause the removal of the oxid produced.

As will be seen from the Patent No. 831078 it is very important for the practical application of this cutting process, that the two terminals or nozzles are combined in such a manner that they can be easily shifted on the piece of work by following exactly the outline to be cut off, the said head pieces may be shifted either in a straight line or in a circle or along any desired curve, while preserving their relative positions, the heating jet being kept at a certain distance according to the movements of the heating terminal, but as near as possible to the piece of work.

The present invention has for its object, to provide an improved construction of cutting off blowpipe, which enables the operator by very simple means to produce by hand and at will, either a rectilinear cut, or a circular cut, or a cut arranged obliquely or at a given angle to the transverse plane of the piece of work.

The blowpipe forming the subject of this invention has for its distinctive feature a holder, in which the tubes carrying the terminals can be easily adjusted in height, and the combination of this holder with an auxiliary piece provided with suitably arranged sleeves and serving to fix holders or other suitable devices such as rods provided with rollers, forked rods provided with pivots, or any other device adapted to place the actual holder of the blowpipe in a given position or to cause it to follow a given path.

The accompanying drawing is an example of an appliance embodying the invention.

Figure 1 is a side elevation of the entire apparatus, Fig. 2 is an end elevation showing the apparatus arranged for cutting in a straight line or obliquely. Fig. 3 is a plan

showing the apparatus arranged for cutting out a circle. Figs. 4 and 5 show details in plan and side elevation of the supporting rod used, when the apparatus is operated as shown by Fig. 3.

The apparatus comprises a holder properly speaking 1, formed by any suitable rod or bar provided with a handle 2, and supporting by means of holders 3, the feed pipes 4 and 5 for the heating gas mixture and for the oxygen, which pipes may or may not be provided with valves or cocks. The said rod 1 ends in a sleeve 6, in which may be fixed at any suitable height a tube 8, by means of a set screw 7, the said tube terminating in the heating nozzle 9.

The pipe 8 is connected by a flexible pipe 10 with the feed pipe 4, (see Fig. 3) for the heating gas. On the pipe 8 is fixed, preferably underneath the sleeve 6, a sleeve 11 held in position by a set screw 12.

The sleeve 11 is made in one piece with another sleeve 13, which carries the oxygen feed pipe 25 ending in the nozzle 26 and with two horizontal arms 14, terminating at each end with vertical sleeves 15 having set screws 16, and with horizontal sleeves 17 having set screws 18. The sleeves may receive auxiliary organs of various shapes, according to the work for which the apparatus is to be used. The oxygen pipe 25 is connected to the supply pipe 5 by a flexible tube 10' (see Fig. 3).

Fig. 2 shows for instance rods 19 introduced into the vertical sleeves 15, these rods terminate with rollers 20 adapted to roll on the piece of work, if the apparatus is suitably adjusted.

The horizontal side sleeves 17 may receive, for instance, a fork 21 made in one piece with a rod 22 arranged in the axis of the fork 21, as shown by Fig. 3. On this rod is adapted to slide a sleeve 23 (Figs. 4 and 5) armed with a pin 24 adapted to serve as a center point or pivot for the apparatus.

A few applications of the apparatus arranged as described and provided with the accessories 19 or 21 will now be described by way of example.

It is easy to understand, that the apparatus composed only of the holder 1, the tube 8 fixed in the sleeve 6, the sleeve 11 fixed on this tube 8 and of the oxygen feedpipe 25 fixed in the sleeve 13 may be used under the same conditions and is equally manageable

as an ordinary blowpipe operated by hand. The exact position of the tubes 8 and 25 may be regulated in height, without any difficulty by simply causing these tubes to slide in their respective sleeves; this arrangement offers, however, in itself and in this simplest form, an important advantage over the ordinary blow-pipe operated by hand, in as much as the oxygen feed-pipe 25 may be caused to pivot on the tube 8 by means of the sleeve 13 and the sleeve 11, and placed in any desired position in relation to the tube 8.

In case it is required to produce a cut in a straight line, the ordinary hand blow-pipe does not always offer great certainty of work, on account of the difficulty, which the operator meets in maintaining the terminals at the required distance from the object to be operated upon. The apparatus described above provides a remedy for this inconvenience, by its combination with the sleeves 15 and with the rods 19 which may be introduced into these sleeves.

It is sufficient, to arrange the apparatus in the manner shown by Fig. 2 and to suitably adjust the height of the rollers 20 in relation to the nozzles 9 and 26, in order to provide a perfect guide for the nozzles on the piece of work, in as much as in this case the apparatus is caused to roll on the sheet metal or on the wall of the tube or of any other object to be cut off, by simply pulling or pushing the rod 1, and this without reducing its great mobility, which allows it to follow any outline drawn on the piece to be cut out.

The same design of apparatus is suitable also for cutting obliquely at any desired angle; it is in fact, sufficient to adjust the rods 19 in such a manner, that the rollers 20 are situated in different horizontal planes; if in that case the apparatus rests on the piece of work to be cut, such as a sheet of metal, the tubes 8 and 25 occupy a more or less inclined position, the result of which is, that the sheet will be cut obliquely. The same apparatus lends itself very easily for cutting along circles or other curves of any required diameter. In that case the fork 21 is applied by introducing it into the sleeves 17 at one of the two extremities of the holder 14. Subsequently the position of the sleeve 23 on the rod 22 is adjusted so that the distance between the axis of the pivot 24 and the axis of the tubes 8 and 25 corresponds with the radius of the circle to be cut. After this the apparatus need only be made to pivot about the center 24, in order that the terminals will describe the desired circle.

The rods 19 and the fork 21 constitute of course, auxiliary organs, the shape and arrangement of which may be modified, according to the shape of the piece of work, moreover, the present invention is not limited to the use of these auxiliary devices.

Having thus described our invention, what we claim is:

1. In a cutting off blowpipe in combination a holder (1), means for supporting feed pipes (4, 5) on said holder, a sleeve at the end of said holder, a pipe (8) fixed in said sleeve and means for supporting a second pipe (25) by said pipe (8) and varying the position of the second pipe (25) relatively to the first pipe (8) substantially as described and for the purpose set forth.

2. In a cutting off blowpipe in combination a holder (1), means for supporting feed pipes (4, 5) on said holder, a sleeve (6) at the end of said holder, a pipe (8) adjustable in said sleeve, a second sleeve (11) adjustable on said pipe (8), a third sleeve (13) bodily connected to the second sleeve (11) and a pipe (25) adjustable in the said third sleeve (13) substantially as described and for the purpose set forth.

3. In a cutting off blowpipe in combination a holder (1), means for supporting feed pipes (4, 5) on said holder, a pipe (8) adjustable in said sleeve, a second sleeve (11) adjustable on said pipe (8), a third sleeve (13) bodily connected to the second sleeve (11), a pipe (25) adjustable in the said third sleeve (13), two horizontal arms (14) provided on the second sleeve (11) and auxiliary means cooperating with the said arms (14) substantially as described and for the purpose set forth.

4. In a cutting off blowpipe in combination a holder (1), a sleeve (6) at the end of said holder, a pipe (8) adjustable in said sleeve, a second sleeve (11) for supporting a second pipe (25), two horizontal arms provided on said second sleeve (11), vertical and horizontal sleeves (15 & 17) provided on the said arms and auxiliary means cooperating with said sleeves (15-17) for guiding the pipes (8-25) and varying the positions of said pipes substantially as described and for the purpose set forth.

5. In a metal, cutting tool, the combination with a heating instrument of an auxiliary jet nozzle mounted in proximity to the heating instrument and capable of rotation about the axis thereof, and means for supplying an oxidizing fluid to the auxiliary jet nozzle, whereby the jet nozzle may be made to trail the heating instrument in any desired direction, substantially as described.

6. In a metal-cutting tool the combination with a heating instrument of an auxiliary jet-nozzle supported in proximity to the heating instrument and capable of rotation about the axis thereof, means for locking the auxiliary nozzle in different positions about the heating instrument, and means for supplying an oxidizing fluid to the auxiliary jet-nozzle, substantially as described.

7. In a metal-cutting tool the combination

- with a heating instrument of an auxiliary jet-nozzle mounted on the heating instrument by means of an off-set rotatable support having its axis of rotation in substantial coincidence
5 with the axis of the heating instrument, means for supplying an oxidizing fluid to the auxiliary jet-nozzle, and means for locking the rotatable support in different positions, substantially as described.
- 10 8. In a metal cutting tool, the combination with a heating instrument of an auxiliary jet nozzle supported in proximity to the heating instrument and capable of rotation about the axis thereof, means for frictionally
15 locking the auxiliary nozzle in different positions about the heating instrument, and

means for supplying an oxidizing fluid to the auxiliary jet nozzle, substantially as described.

In testimony whereof we have signed our names to this specification in the presence of two subscribing witnesses.

FELIX JOTTRAND.
PRIMO LULLI.

Witnesses to the signature of Felix Jottrand:

JULIA JOTTRAND,
SPIRIT JUGGLER.

Witnesses as to Primo Lulli:

GEORGE BEDE,
GREGORY PPELAN.