

No. 894,195.

PATENTED JULY 28, 1908.

C. DELCAMPE.  
METAL CUTTING INSTRUMENT.  
APPLICATION FILED MAR. 13, 1907.

Fig. 1.

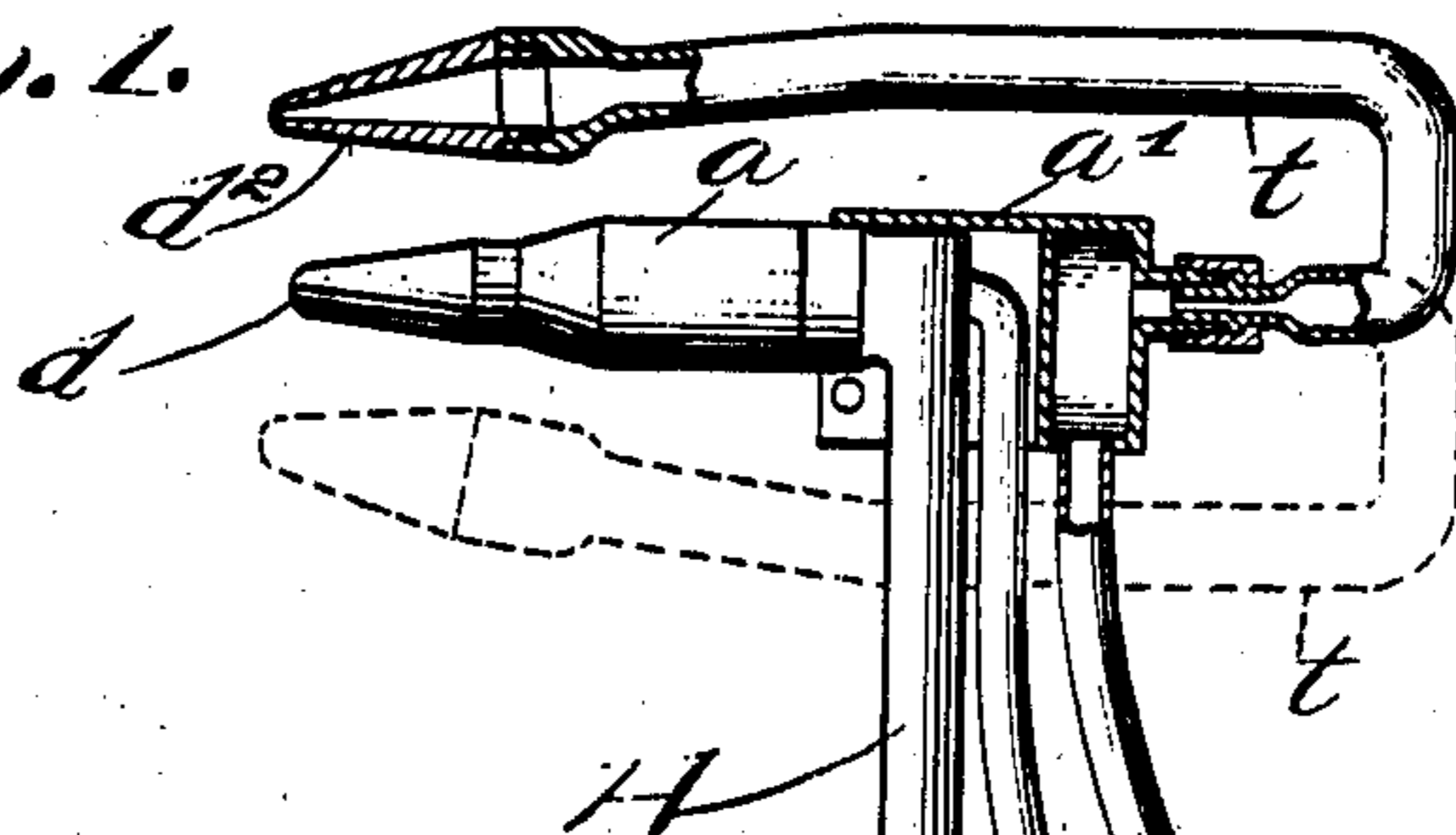
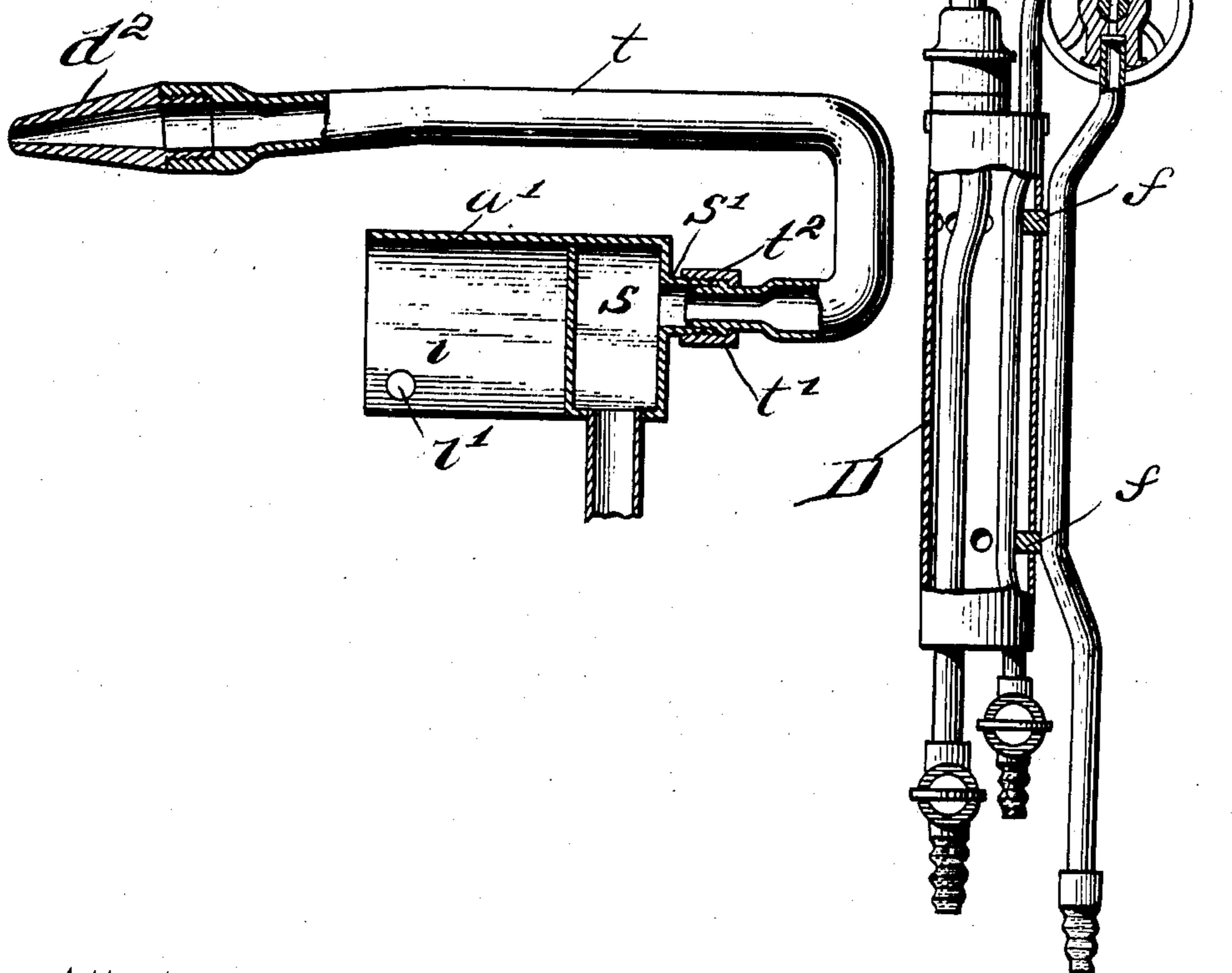


Fig. 2.



Attest;  
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# UNITED STATES PATENT OFFICE.

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## METAL-CUTTING INSTRUMENT.

No. 894,195.

Specification of Letters Patent.

Patented July 28, 1908.

Application filed March 13, 1907. Serial No. 362,229.

*To all whom it may concern:*

Be it known that I, CYRILLE DELCAMPE, a subject of the King of Belgium, residing at the city of Quincy, in the county of Norfolk and State of Massachusetts, have invented certain new and useful Improvements in Metal-Cutting Instruments; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to improvements in cutting attachments for blow-pipes and the like, and the object is to provide a convenient working tool for carrying on that process of cutting metal, which consists in first heating the metal at the region of the desired cut, and then burning out the metal to form the cut by means of a fine oxidizing jet.

The heating device may be a blow-pipe, or other equivalent heating instrument, and the attachment comprises primarily an auxiliary nozzle for the oxidizing jet mounted on the heating instrument by means of an offset rotatable support so as to be capable of rotation about the axis of the heating instrument.

The construction and operation of the improved device will be understood from a consideration of the following description in connection with the accompanying drawings.

In the drawings: Figure 1 is an elevation of a blow-pipe, provided with my attachment shown partly in section; Fig. 2 is a sectional detail view of the attachment head on an enlarged scale.

The blow-pipe is shown as having a head *a*, the supply pipes A and B, the tubular handle D and the main exit nozzle *d* in the head. The auxiliary nozzle *d*<sup>2</sup> for the oxidizing jet is supported on the blow-pipe, in such a position that the blow-pipe flame and the oxidizing jet are slightly convergent, by means of the offset tubular arm *t*, which is rotatably mounted on the head *a*' of the cutting attachment. The head *a*' comprises a hood *r* which sets over the head of the blow-pipe, inclosing the upper end of the supply pipes, and is held in place by a key *r*'. Within the hood *r* and forming part of the head is a chamber *s* in which the oxygen pipe C terminates. This chamber has a lateral tubular projection *s*' into which the reduced end of the bent arm *t* carrying the auxiliary nozzle *d*<sup>2</sup> fits, and this reduced end is provided with a flange *t*' which takes against the

end of the tubular projection *s*'. The flanged screw collar *t*<sup>2</sup> screws onto the tubular projection *s*' and engages the other side of the flange *t*' to secure the arm *t* in a fixed position with relation to the blow-pipe. The head *a*' of the attachment is so constructed that the axis of the tubular projection *s*' coincides with the axis of the blow-pipe nozzle *d*. By loosening the screw collar *t*<sup>2</sup> the arm *t* may be rotated in its support into any desired position about the main nozzle *d*, and then locked in place by screwing up the screw collar, and it is in order that the circle of rotation of the auxiliary nozzle *d*<sup>2</sup> may be symmetrical with respect to the main nozzle *d* that the axis of rotation of the bent arm *t* is made to coincide with the axis of the nozzle *d*.

In Fig. 1 the auxiliary nozzle is shown in full lines above the main nozzle and in dotted lines below the same to indicate its adjustability. The oxygen pipe C is provided just above and in close proximity to the handle D with a shut-off cock *e* and the pipe below the cock is bent toward the handle D and is provided with two plugs *f*, which fit into corresponding holes in the handle D, thus affording an additional means of fastening the cutting attachment to the blow-pipe and also affording a convenient handle for the instrument.

In use this attachment may be secured to a blow-pipe or other heating instrument of appropriate construction, and after the spot to be cut is heated by the heating instrument the cock *e* is opened to allow the oxygen to flow through the jet nozzle *d*<sup>2</sup> onto the heated spot to form the cut. The instrument is used for the purpose of cutting plates, pipes, manholes in boilers, and the like, and is indeed generally available as a portable metal-cutting instrument which may be carried to, and used upon the work to be done. It is for this reason that the auxiliary nozzle for the oxidizing jet is made adjustable about the heating nozzle. With this construction, if it is desired, for example, to stand in front of a vertical sheet and cut down, the auxiliary nozzle is placed in the position indicated in full lines in Fig. 1 and the instrument is moved down to form the cut. If now it is desired to cut up, it is only necessary to turn the auxiliary nozzle to the position shown in dotted lines in Fig. 1 and move the instrument up. So, if it is desired to cut to the left, the auxiliary nozzle is placed at the right of the main nozzle,

and if it is desired to cut to the right, the auxiliary nozzle is placed to the left of the main nozzle, etc. In each case, the auxiliary nozzle is made to trail the main nozzle without necessitating the twisting of the supply pipes or awkward movements on the part of the operator.

It will be understood that the attachment is secured to the blow-pipe by slipping the hood of the attachment over the head of the blow-pipe and inserting the key  $r'$ , and that whereas, in the drawings the attachment hood is shown of such a construction as to fit a particular type of blow-pipe, yet, the construction of the hood may readily be so modified as to fit any other type of blow-pipe, or any other equivalent heating instrument, care being taken at all times that the axis of rotation of the arm  $t$  shall be substantially in line with the axis of the heating instrument.

What I claim is:—

1. In a metal-cutting instrument, the combination with a blow-pipe having a head terminating in a main nozzle, of an attachment therefor comprising a hood adapted to engage the head, a gas chamber in said hood, gas supply connections to said chamber, an outlet from said chamber having its axis in alinement with the axis of the main nozzle, a bent tubular arm journaled in said outlet and supporting at its free end an auxiliary nozzle in proximity to the main nozzle of the blow-pipe, and means for locking said arm in different positions of rotation, substantially as described.

2. In a metal-cutting instrument, the combination with a blow-pipe having a head terminating in a main nozzle, of an attachment for said blow-pipe carrying a hollow bearing having its axis in line with the axis of the main nozzle, gas connections to said hollow bearing, an auxiliary nozzle having a tubular support journaled in said bearing and by which it is supported in proximity to the main nozzle, and means for locking said support in different positions in its bearing, substantially as described.

3. A cutting attachment for blow-pipes comprising a head having a hollow bearing, gas connections to said hollow bearing, means for attaching the head to the blow-

pipe with the axis of the hollow bearing in line with the axis of the blow-pipe nozzle, an offset tubular nozzle support journaled in the hollow bearing, an auxiliary jet-nozzle supported thereby in proximity to the blow-pipe nozzle, and means for locking the support in different positions in its bearing, substantially as described.

4. A cutting attachment for blow-pipes comprising a head having a bearing, means for attaching the head to the blow-pipe with the axis of the bearing in line with the axis of the blow-pipe nozzle, an offset nozzle support journaled in the bearing, an auxiliary jet-nozzle supported thereby, gas connections to said auxiliary jet-nozzle, and means for locking the support in different positions in its bearing, substantially as described.

5. In a metal-cutting instrument, the combination with a blow-pipe comprising a head terminating in a main nozzle, a plurality of gas supply pipes terminating in said head, and a cylindrical sheathing surrounding said pipes and serving as a handle for the blow-pipe, of a cutting attachment comprising an auxiliary nozzle mounted in proximity to the main nozzle, an auxiliary gas supply pipe for said auxiliary nozzle, and means for detachably securing the auxiliary gas supply pipe to said cylindrical sheathing, substantially as described.

6. In a metal-cutting instrument, the combination with a blow-pipe comprising a head terminating in a main nozzle, a plurality of gas supply pipes terminating in said head, and a cylindrical sheathing surrounding said pipes and serving as a handle for the blow-pipe, of a cutting attachment comprising an auxiliary nozzle mounted in proximity to the main nozzle, an auxiliary gas supply pipe for said auxiliary nozzle, means for detachably securing the gas supply pipe to the cylindrical sheathing, and a cock in the auxiliary gas supply pipe in proximity to the sheathing, substantially as described.

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

CYRILLE DELCAMPE.

Witnesses:

F. L. BRAKE,  
ANDRÉ BELTZER.