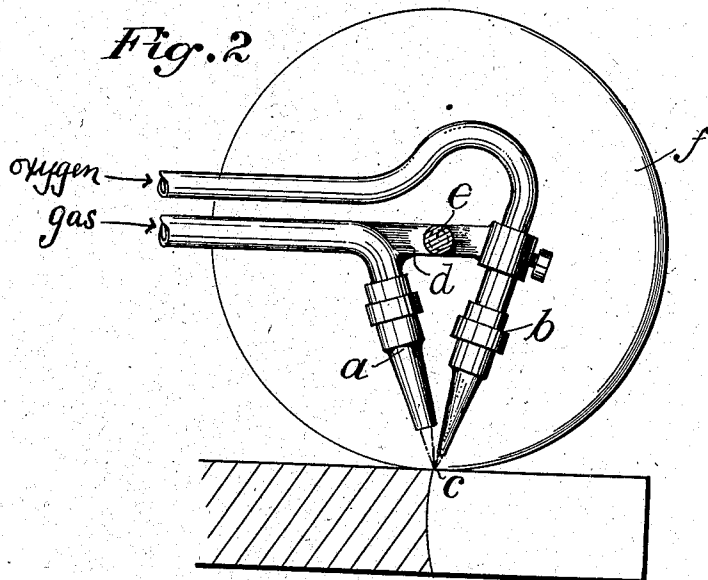
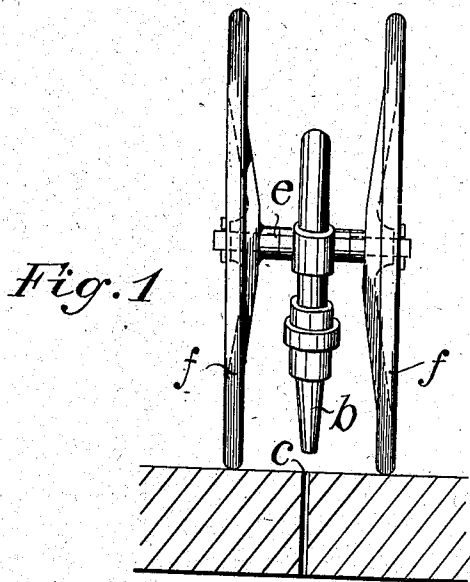


E. WISS.
 DEVICE FOR SEVERING METAL BODIES.
 APPLICATION FILED JAN. 6, 1907.

932,740.

Patented Aug. 31, 1909.



Witnesses
J. J. McCarthy
B. C. Rust

Inventor
E. Wiss
Forster, Thompson and Watson
attys

UNITED STATES PATENT OFFICE.

ERNST WISS, OF GRIESHEIM-ON-THE-MAIN, GERMANY, ASSIGNOR TO CHEMISCHE FABRIK GRIESHEIM ELECTRON, OF FRANKFORT-ON-THE-MAIN, GERMANY, A CORPORATION OF GERMANY.

DEVICE FOR SEVERING METAL BODIES.

932,740.

Specification of Letters Patent.

Patented Aug. 31, 1909.

Application filed January 5, 1907. Serial No. 350,991.

To all whom it may concern:

Be it known that I, ERNST WISS, a subject of the German Emperor, and residing at Griesheim-on-the-Main, Germany, have invented certain new and useful Improvements in Devices for Severing Metal Bodies, of which the following is a specification.

This invention relates to apparatus for severing metals by means of a flame assisted by a jet of oxygen.

I will describe this invention with reference to the accompanying drawing, Figures 1 and 2 being elevations at right angles to each other.

The apparatus is provided with two nozzles, through one of which (that marked *a*) issues a mixture of gas and oxygen which forms the heating medium, while through the other nozzle *b* issues a jet of oxygen. The said nozzles converge toward each other and it is essential that they be so arranged as to form an acute angle differing as much as possible from a right angle, consistent with the longitudinal axes of the jets intersecting each other at the edge *c* of the metal to be acted upon, as otherwise the gas currents from the respective nozzles would blow each other aside and detract from the sharpness of the jet of oxygen, as is the case when the nozzles form with each other a right angle, or even an obtuse angle.

In the arrangement according to this invention the nozzles conducting the different gases are so arranged and supported in relation to the material to be acted upon that the face of the material is at the meeting point of jets which are brought together at an acute angle, which point is the hottest part of the heating flame so that the actions of the heating flame and of the jet of oxygen coincide both as regards time and place. As it is necessary to vary the size of the heating flame in accordance with the piece to be severed provision should be made in order that when the flame becomes larger, the point of the oxygen nozzle is not in the hot zone of the heating flame. This result can be obtained for example by arranging the oxygen nozzle slidably in, or on, an arm *d* attached to the tube for the heating flame.

e is an axle common to both nozzles, the said axis being arranged so that it lies in the line which bisects the angle formed by the two nozzles. The said axle *e* carries guiding rollers *f* which enable the nozzle arrange-

ment to be guided on the piece of work so as to keep it along the line of severance and the openings of the nozzle constantly at the required distance from the work. It will be seen that as the oxygen supplied through the nozzle *b* is under a very much greater pressure than the mixed oxygen and gas supplied through the nozzle *a*, that it is very important and in fact necessary in order to obtain the desired results that the said nozzles be arranged at an acute angle, and so that the two jets issuing therefrom will meet at the surface of the material to be cut. If the nozzles are not arranged in this particular relation the stream of oxygen will extinguish the heating flame. By arranging the nozzles in the relation described it will be seen that the line or plane of cut through the body acted upon will be substantially equidistant from the lines or planes of the nozzles at all depths. That is, the relation between the jets delivered through the nozzles on the surface acted upon will be the same at every stage in the cutting operation.

Having now particularly described and ascertained the nature of my said invention and in what manner the same is to be performed, I declare that what I claim is:—

1. The combination in an apparatus of the character described of two nozzles and a support therefor adapted to bear on and support the nozzles in proper relation to the face of the article to be cut, said nozzles arranged at an acute angle on the support to insure the meeting at said acute angle of the gas jets at the face of the material, and maintain the same relation between the jets throughout the cutting operation.

2. The combination in an apparatus for severing metals, of separated parallel wheels axially in line and two nozzles arranged at equal angles on opposite sides of the said axis, converging at their lower ends to bring the jets therefrom together at the plane supporting the wheels, and means for supplying different gases to the two nozzles.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

ERNST WISS.

Witnesses:

FRANZ FLASSLACHER,
ERWIN DIPPEL.