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(71) Applicant: **Hypertherm, Inc.**
Hanover, NH 03755 (US)

(72) Inventors:
• **Shreyansh, Patel**
Hanover, 03755 (US)

- **Darrow, Clifford, G.**
Hanover, 03755 (US)
- **Agan, David**
Hanover, 03755 (US)
- **Moody, Steven**
Hanover, 03755 (US)
- **Higgins, Martin**
Hanover, 03755 (US)
- **Shipulski, E., Michael**
Hanover, 03755 (US)

(74) Representative: **Barker Brettell LLP**
100 Hagley Road
Edgbaston
Birmingham, West Midlands B16 8QQ (GB)

(54) **ASYMETRIC CONSUMABLES FOR A PLASMA ARC TORCH**

(57) A torch tip assembly of a plasma arc torch is provided for delivering a diffused stream of plasma arc in a gouging operation. The assembly comprises a nozzle including a nozzle body defining a central longitudinal axis extending between a proximal end and a distal end. A nozzle exit orifice of the nozzle body defines at least a bore for conducting the plasma arc therethrough. The assembly also comprises a counter bore feature, disposed relative to the distal end the nozzle body, fluidly connected to the bore and located distally relative to the bore. At least one of the bore or the counter bore feature has a non-circular cross-sectional shape in a plane perpendicular to the longitudinal axis. The non-circular cross-sectional shape is configured to enable a second non-circular cross-sectional shape in the plasma arc that diffuses the plasma arc.

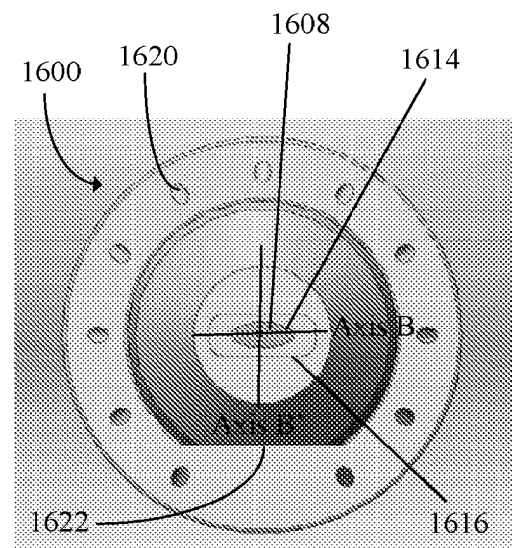


FIG. 16a



EUROPEAN SEARCH REPORT

Application Number

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A	* abstract; figures 2, 3A, 3B, 4 * * paragraphs [0011], [0029], [0039] * -----	10-15	
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A	JP S60 234919 A (HONDA MOTOR CO LTD) 21 November 1985 (1985-11-21) * abstract; figure 2 * -----	1-15	
A	US 5 334 235 A (DORFMAN MITCHEL R [US] ET AL) 2 August 1994 (1994-08-02) * figure 1 *	1-15	TECHNICAL FIELDS SEARCHED (IPC) H05H
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The present search report has been drawn up for all claims			

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Place of search	Date of completion of the search	Examiner
The Hague	10 April 2024	Crescenti, Massimo
CATEGORY OF CITED DOCUMENTS X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document		

ANNEX TO THE EUROPEAN SEARCH REPORT ON EUROPEAN PATENT APPLICATION NO.

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This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report. The members are as contained in the European Patent Office EDP file on
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