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Box Assignment

Commissioner of Patents and Trademarks

Washington, DC 20231

February 26, 2002

Atty. Ref.: MP-219

Please record the attached original document or copy thereof.

Name of Conveying Party(ies): (1) William E. Sikkenga and (2) Arthur W. Grumm

Name and Address of Receiving Party(ies):
Howmet Research Corporation

1500 Warner St.

Whitehall, Michigan 49461

3.12.02

M2 MM 12 PM 1: 35

Nature of Conveyance:

[X] Assignment [] Security Agreement [] Merger [] License

[] Change of Name [] Other:

Execution Date of Document: July 30, 1999

If this document is being filed together with a new application, the execution date of the application is: --

Patent Application Numbers: 09/339 292

Patent Numbers:

Total Number of Applications and Patents Involved: 1. An enclosed check includes the recording fee of \$40.00. The Commissioner is hereby authorized to credit any overpayment, or to charge any additional recording fee required by this paper, to Deposit Account No. 20-1124.

Mail correspondence concerning
The documents to:

Walnut Woods Centre

5955 W. Main St.

Kalamazoo, MI 49009 Tel: (616) 353-8807

Fax: (616) 372-3217

To the best of my knowledge and belief, the foregoing information is true and correct, and any attached copy is a true copy of the original document.

03/25/2002 DBYRNE 00000042 09339292

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Walnut Woods Centre 5955 W. Main St.

Kalamazoo, MI 49009 Tel: (616) 353-8807

Fax: (616) 372-3217

Encl: Assignment Check

Respectfully submitted,

Edward J. Timmer

Total number of pages, including cover sheet, attachments and documents 2

PATENT REEL: 012704 FRAME: 0054 of Patents 20231

Ref.: MP219

Washington, D.C. Attention: Assignment Branch

Please record the attached original document or copy thereof.

Name of Conveying Party(ies): William E. Sikkenga Arthur W. Grumm

Name and Address of Receiving Party(ies): Howmet Research Corporation 1500 Warner Street Whitehall, MI 49461

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[X] Assignment

[] Security Agreement [] Merger

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[] Change of Name [] Other: Execution Date of Document: July 30, 1999

If this document is being filed together with a new application, the execution date of the application is: n/a

Patent Application Numbers: 09,399,292

Patent Numbers:

n/a

Total Number of Applications and Patents Involved: 1. An enclosed check

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Mail correspondence concerning the document to:

Mr. Edward J. Timmer Walnut Woods Centre 5955 W. Main Street Kalamazoo, MI 49009

To the best of my knowledge and belief, the foregoing information is true and correct, and any attached copy is a true copy of the original document.

Respectfully submitted,

Edward J. Timmer (Reg.No. 402)

Walnut Woods Centre 5955 W. Main Street Kalamazoo, MI 49009

Encl: Assignment Check

Total number of pages, including cover sheet, attachments, and documents 8

09/27/1999 VVAN11 00000066 09339292

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PATENT REEL: 012704 FRAME: 0055

ASSIGNMENT

WHEREAS, we (1) William E. Sikkenga and (2) Arthur W. Grumm, hereinafter called "ASSIGNORS", residing at (1) 2829 E. White Lake Drive, Twin Lake, Michigan 49457; and (2) 6194 W. Webster Road, Montague, Michigan 49437 have invented certain new and useful improvements in MULTIPIECE CORE ASSEMBLY FOR CAST AIRFOIL for which application Serial No. 09/339 292 for United States Letters Patent was filed on June 24, 1999; and

WHEREAS, Howmet Research Corporation hereinafter called "ASSIGNEE", a corporation of the State of Delaware having a place of business at 1500 Warner St., Whitehall, Michigan 49461 is desirous of acquiring the entire right, title and interest in and to said invention and in and to any Letters Patent that may be granted therefor in the United States and in any and all foreign countries.

NOW THEREFORE, in consideration of the sum of One Dollar (\$1.00) to us in hand paid, the receipt whereof is hereby acknowledged, and other valuable consideration, we the ASSIGNORS have sold, assigned and transferred, and by these presents do sell, assign and transfer unto said ASSIGNEE the full and exclusive right to said invention in the United States and its territorial possessions and in all foreign countries and the entire right, title and interest in and to any and all Letters Patent which may be granted therefor in the United States and its territorial possessions and in any and all foreign countries and in any and all divisions, reissues, continuations and extensions thereof.

We hereby authorize and request the Patent Office Officials in the United States and in any and all foreign countries to issue any and all of said Letters Patent, when granted, to said ASSIGNEE as the assignee of the entire right, title and interest in and to the same, for the sole use and behoof of said ASSIGNEE, its successors and assigns.

FURTHER, we agree that we will communicate to said ASSIGNEE or its representative any facts known to us respecting said invention, and testify in any legal proceedings, sign all lawful papers, execute all divisional, continuation, substitution, renewal and reissue applications, execute all necessary assignment papers to cause any and all of said Letters Patent to be issued to said ASSIGNEE, make all rightful oaths or declarations, and generally cooperate with said ASSIGNEE, its successors and assigns, to obtain and enforce proper protection for said invention in the United States and in any and all foreign countries.

IN WITNESS WHEREOF, we have hereunto set our hands this 30 day of $\sqrt{\nu_{LY}}$, $^{\times}$ 1999.

Signed in the presence of:

Signed: Milliam E. Sikkenga

William E. Sikkenga

Signed: Athur W. Yaun

STATE OF MICHIGAN)

SS.

COUNTY OF MUSKEGON)

On this 30 day of 1024, 1999 personally appeared before me the above-named William E. Sikkenga and Arthur W. Grumm, to me known and known to me to be the persons described in and who executed the foregoing instrument and acknowledged the same to be their free act and deed in and for the purposes set forth in said instrument.

Notary Public

F. MOONEAN BRUMM

My Commission expires

NOTARY PUBLIC MUSKEGON COUNTY, MI
My Commission expires

NOTARY PUBLIC MUSKEGON COUNTY, MI
MY COMMISSION EXPIRES OCTOBER 1, 2000

RECORDED: 03/14/2002 REEL: 012704 FRAME: 0056

SEAL