

10-22-1999

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ATTY. DKT. 99A298

To the Honorable Commissioner of Patents and Trademarks: Please record the attached original documents or copy thereof.

## 1. Name of conveying party(ies):

Dongmin SHEN  
Martin BÜLOW  
Sudhakar R. JALE  
Ravi KUMAR  
Madhusudhan HUGGAHALI

Additional name(s) of conveying party(ies) attached? ☐ Yes ☒ No

## 2. Name and address of receiving party(ies):

Name: The BOC Group, Inc.

Internal Address: \_\_\_\_\_

Street Address: 575 Mountain AvenueCity: Murray Hill, New Providence State: NJ ZIP: 07974Additional name(s) & address(es) attached? ☐ Yes ☒ No

## 3. Nature of conveyance:

- ☒ Assignment ☐ Merger  
☐ Security Agreement ☐ Change of Name  
☐ Other \_\_\_\_\_

Execution Date: October 12, 1999

## 4. Application number(s) or patent number(s):

If this document is being filed together with a new application, the execution date of the application is: October 12, 1999

A. Patent Application No.(s)

B. Patent No.(s)

Additional numbers attached? ☐ Yes ☒ No

## 5. Name and address of party to whom correspondence concerning document should be mailed:

Name: Philip H. Von NeidaInternal Address: Patent, Trademark & Licensing Dept.Street Address: The BOC Group, Inc.100 Mountain AvenueCity: Murray Hill State: NJ Zip: 07974

## 6. Total number of applications and patents involved: 1

7. Total fee (37 CFR 3.41): ..... \$ 40.00☐ Enclosed☒ Authorized to be charged to deposit account8. Deposit account number: 02-2865

(Attach duplicate copy of this page if paying by deposit account)

DO NOT USE THIS SPACE

## 9. Statement and Signature.

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.

Philip H. Von Neida  
Registration No. 34,942

OCTOBER 12, 1999

Date

Total number of pages comprising cover sheet: 1

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**JOINT ASSIGNMENT**

**WHEREAS, WE**, Dongmin SHEN, a citizen of the People's Republic of China; Martin BÜLOW, a citizen of Germany; Sudhakar R. JALE, a citizen of India; Ravi KUMAR, a citizen of the United States of America; and Madhusudhan HUGGAHALLI, a citizen of India

residing, respectively at      38 Snyder Avenue, Berkeley Heights, New Jersey 07922, USA;  
54 Jamestown Road, Basking Ridge, New Jersey 07920-3043, USA;  
239 Spruce Mill Lane, Scotch Plains, New Jersey 07076, USA;  
991 North Treeline Drive, Allentown, Pennsylvania 18103, USA; and  
423 Cheshire Court, Somerset, New Jersey 08873, USA

have invented certain new and useful improvements in

THERMAL SWING ADSORPTION PROCESS FOR THE REMOVAL OF DINITROGEN OXIDE,  
HYDROCARBONS AND OTHER TRACE IMPURITIES FROM AIR

for which we have executed an application for Letters Patent of the United States on even dates herewith;  
and,

**WHEREAS, The BOC Group, Inc.**, a Delaware Corporation having an office at 575 Mountain Avenue, Murray Hill, New Providence, New Jersey 07974, is desirous of obtaining the entire right, title and interest in, to and under the said improvements and the said application:

**NOW, THEREFORE**, in consideration of the sum of One Dollar (\$1.00) to us in hand paid, and other good and valuable consideration, the receipt of which is hereby acknowledged, we, the said Dongmin SHEN, Martin BÜLOW, Sudhakar R. JALE, Ravi KUMAR, and Madhusudhan HUGGAHALLI have sold, assigned, transferred and set over, and by these presents do hereby sell, assign, transfer and set over, unto the said **The BOC Group, Inc.**, its successors, legal representatives and assigns, the entire right, title and interest in, to and under the said improvements, and the said application and all divisions, renewals and continuations thereof, and all Letters Patent of the United States which may be granted thereon and all reissues and extensions thereof, and all applications for Letters Patent which may hereafter be filed for said improvements in any country or countries foreign to the United States, and all Letters Patent which may be granted for said improvements in any country or countries foreign to the United States and all extensions, renewals and reissues thereof; and we hereby authorize and request the Commissioner of Patents of the United States, and any Official of any country or countries foreign to the United States, whose duty it is to issue patents on applications as aforesaid, to issue all Letters Patent for said improvements to the said **The BOC Group, Inc.**, its successors, legal representatives and assigns, in accordance with the terms of this instrument.

**WE HEREBY** covenant that we have full right to convey the entire interest herein assigned, and that we have not executed, and will not execute, any agreement in conflict herewith.

AND WE HEREBY further covenant and agree that we will communicate to the said **The BOC Group, Inc.**, its successors, legal representatives and assigns, any facts known to us respecting said improvements, and testify in any legal proceeding, sign all lawful papers, execute all divisional, continuing and reissue applications, make all rightful oaths, and generally do everything possible to aid the said **The BOC Group, Inc.**, its successors, legal representatives and assigns, to obtain and enforce proper patent protection for said improvements in all countries.

IN TESTIMONY WHEREOF, I hereunto set my hand and seal this 12 day of

October, 1999.

*Dongmin Shen* L.S.  
Dongmin Shen

State of New Jersey  
County of Union ss.:

On this 12<sup>th</sup> day of OCTOBER, 1999, before me, a Notary Public in the State and County aforesaid, personally appeared **Dongmin Shen**, to me known and known to me to be the person of that name, who signed and sealed the foregoing instrument, and he acknowledged the same to be his free act and deed.

GERTRUDE ROTT  
NOTARY PUBLIC OF NEW JERSEY  
My Commission Expires Apr. 15, 2001

*Gertrude Rott*  
Notary Public

IN TESTIMONY WHEREOF, I hereunto set my hand and seal this 12 day of

October, 1999.

*Martin Bülow* L.S.  
Martin Bülow

State of New Jersey  
County of Union ss.:

On this 12<sup>th</sup> day of OCTOBER, 1999, before me, a Notary Public in the State and County aforesaid, personally appeared **Martin Bülow**, to me known and known to me to be the person of that name, who signed and sealed the foregoing instrument, and he acknowledged the same to be his free act and deed.

GERTRUDE ROTT  
NOTARY PUBLIC OF NEW JERSEY  
My Commission Expires Apr. 15, 2001

*Gertrude Rott*  
Notary Public

IN TESTIMONY WHEREOF, I hereunto set my hand and seal this 12 day of

October, 1999.



L.S.

Sudhakar R. Jale

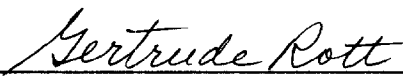
State of New Jersey

SS.:

County of Union

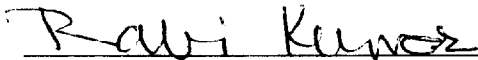
On this 12<sup>th</sup> day of OCTOBER, 1999, before me, a Notary Public in the State and County aforesaid, personally appeared **Sudhakar R. Jale**, to me known and known to me to be the person of that name, who signed and sealed the foregoing instrument, and he acknowledged the same to be his free act and deed.

GERTRUDE ROTT  
NOTARY PUBLIC OF NEW JERSEY  
My Commission Expires Apr. 15, 2001

  
Notary Public

IN TESTIMONY WHEREOF, I hereunto set my hand and seal this 12 day of

October, 1999.



L.S.

Ravi Kumar

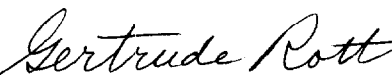
State of New Jersey

SS.:

County of Union

On this 12<sup>th</sup> day of OCTOBER, 1999, before me, a Notary Public in the State and County aforesaid, personally appeared **Ravi Kumar**, to me known and known to me to be the person of that name, who signed and sealed the foregoing instrument, and he acknowledged the same to be his free act and deed.

GERTRUDE ROTT  
NOTARY PUBLIC OF NEW JERSEY  
My Commission Expires Apr. 15, 2001

  
Notary Public

IN TESTIMONY WHEREOF, I hereunto set my hand and seal this 12<sup>th</sup> day of  
OCTOBER, 1999.

Madhusudhan Huggahalli L.S.  
Madhusudhan Huggahalli

State of New Jersey  
County of Union SS.:

On this 12<sup>th</sup> day of OCTOBER, 1999, before me, a Notary Public in the State and County aforesaid, personally appeared **Madhusudhan Huggahalli**, to me known and known to me to be the person of that name, who signed and sealed the foregoing instrument, and he acknowledged the same to be his free act and deed.

**GERTRUDE ROTT**  
NOTARY PUBLIC OF THE NEW JERSEY  
My Comm. Exp. Apr. 15, 2001

Gertrude Rott  
Notary Public