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PTO/SB/16 (8-00)
Approved for use through10/31/2002. OMB 0651-0032
U.S. Patent and Trademark Office; U.S DEPARTMENT OF COMMERCE

PROVISIONAL APPLICATION FOR PATENT COVER SHEET

This is a request for filing a PROVISIONAL APPLICATION FOR PATENT under 37 CFR 1.53(c).

INVENTOR(S)

Given Name (first and middle [if any])	Family Name or Surname	Residence (City and either State or Foreign Country)
ANDRE SANTOS	LESSA	PITTSBURGH, PA - USA
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☐ *Additional inventors are being named on the ___ separately numbered sheets attached hereto*

TITLE OF THE INVENTION (280 characters max)

METHOD THAT ENABLES THE SENDER OF AN EMAIL MESSAGE TO RECEIVE A CONFIRMATION RECEIPT AS SOON AS THE ADDRESSEE RECEIVES AND OPENS THAT MESSAGE, INDEPENDENTLY OF MAIL CLIENT APPLICATIONS AND/OR OPERATIONAL SYSTEMS THAT ARE USED IN THE PROCESS.

Direct all correspondence to: **CORRESPONDENCE ADDRESS**

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OR

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☒ Firm or Individual Name	ANDRE SANTOS LESSA				
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ENCLOSED APPLICATION PARTS *(check all that apply)*

☒ Specification *Number of Pages* 6

☐ Drawing(s) *Number of Sheets*

☐ Application Data Sheet. See 37 CFR 1.76

☐ CD(s), Number

☒ Other (specify) FILING RECEIPT LETTER + SELF-ADDRESSED ENVELOPE

METHOD OF PAYMENT OF FILING FEES FOR THIS PROVISIONAL APPLICATION FOR PATENT *(check one)*

☒ Applicant claims small entity status. See 37 CFR 1.27.

☒ A check or money order is enclosed to cover the filing fees

☐ The Commissioner is hereby authorized to charge filing fees or credit any overpayment to Deposit Account Number:

☐ Payment by credit card. Form PTO-2038 is attached.

FILING FEE AMOUNT ($): 75,00

The invention was made by an agency of the United States Government or under a contract with an agency of the United States Government.

☒ No.

☐ Yes, the name of the U.S Government agency and the Government contract number are _____

Respectfully submitted,

SIGNATURE Andre Santos Lessa

Date 9/28/00

TYPED or PRINTED NAME ANDRE SANTOS LESSA

REGISTRATION NO. *(if appropriate)*

Docket Number:

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USE ONLY FOR FILING A PROVISIONAL APPLICATION FOR PATENT

This collection of information is required by 37 CFR 1.51. The information is used by the public to file (and by the PTO to process) a provisional application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 8 hours to complete, including gathering, preparing, and submitting the complete provisional application to the PTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, Washington, D.C. 20231. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Box Provisional Application, Assistant Commissioner for Patents, Washington, D.C 20231.

Filing receipt for a Provisional Patent Application

Applicant's names:

Andre Santos Lessa

Marcos Baptista Moraes Machado

Title of invention:

Method that enables the sender of an email message to receive a confirmation receipt as soon as the addressee receives and opens that message, independently of mail-client applications and/or operational systems that are used in the process.

Number of pages of specification: 6 (six)

Documents submitted:

- This filing receipt letter
- Self-addressed, stamped envelope
- Provisional application cover sheet
- Provisional application specification
- Personal check to "Commissioner of Patents and Trademarks" in the amount of U$75 (seventy-five dollars).

Application number:

Filling date:

Title of the invention:

Method that enables the sender of an e-mail message to receive a confirmation receipt as soon as the addressee receives and opens that message, independently of mail-client applications and/or operational systems that are used in the process.

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Both inventors have worked together in the development of this invention. The contribution made by both of them can be considered equally distributed across the entire effort that was made to elaborate and implement this idea.

Introduction:

This document contains the following topics:

A) The description of the invention
B) The manner and process of making and using this invention
C) The best mode contemplated by us, the inventors, for implementing our invention

Note that the entire concept of this invention is explained in such a way that no drawing becomes necessary to exemplify its definitions and practice. This document shows how to make and use our invention and demonstrate the best mode known for implementing our idea. Also, note that this documentation is complete enough to enable one skilled in the art of *CGI-SCRIPT* programming, with skills in Hyper-Text Markup Language (*HTML*) and electronic mail (e-mail) standards, to practice our invention.

A) Description of the invention

This invention is about a method that enables the sender of an e-mail message to receive a confirmation receipt as soon as the addressee receives and opens that message, independently of mail-client applications and/or operational systems that are used in the process.

This method consists of intercepting and parsing the original e-mail message that was sent by a user (the sender), adding a customized *HTML <IMG>* tag onto it, and re-directing the message to the original addressee.

Once the addressee opens the message, the *HTML* code is interpreted by his/her mail-client application, and the *<IMG>* tag executes the *CGI-SCRIPT* provided as the value of the tag's SRC attribute. This *CGI-SCRIPT*'s *URL* contains a special argument, which is the identification code that uniquely identifies that e-mail message. Once executed, the *CGI-SCRIPT* marks the identification code that identifies the e-mail message as delivery.

After identifying the message as delivered, a message is sent back to the sender saying that the addressee has received and opened the message.

B) The manner and process of making and using this invention

This section covers how this invention works and how one can make use of it. The next set of paragraphs shows a list of requirements that must be followed in order to enable the invention's usage.

- **The sender's e-mail message**

The user that sends the message, which from now on we will simply call *the sender*, needs to provide, at least, the following information: the addressee's e-mail address, the message subject, the message's body text, and optionally, the file attachments. Our method understands two ways of collecting all this information. The first one uses a Web-based e-mail system, where the sender accesses one specific form where he/she has to provide all the information mentioned above. The other method, which was developed exclusively for this invention, is a program that works by intercepting, parsing, modifying, and redirecting to the correct addressee every e-mail message sent by users to a specific e-mail account. This program parses the e-mail messages and splits the information into several variables according to the fields from the message header, such as (but not limited to) *TO*, *FROM*, and *SUBJECT*. This program also creates a temporary directory in the web server where it stores all the original attached files in order to attach them to the message later, before sending the message to the real addressee. Note that the message body and file attachments are not stored in the system for future use.

- **The e-mail's identification code**

Each e-mail message received by the system is associated to a unique identification code, which is randomly generated according to specific timestamp and session variables. This code, which from now on we will call simply *PIN* is assigned to the message, and is stored along with (but not limited to) the sender's name and e-mail address, the addressee's e-mail address, and the timestamp information concerning the *PIN* creation.

- **The <IMG> tag**

This tag is a standard *HTML* tag that is usually used to display images on a web page, but for the purpose of this invention, we are using it in a very different way. Instead of setting its attribute *SRC* to point to an image, we are setting it to point to a specific *CGI-SCRIPT*, and we are passing to the *CGI-SCRIPT*, as an argument, the *PIN* that we have just created to identify the message. Next, you can see an example of how a call to this *CGI-SCRIPT* looks like:

<IMG SRC="http://www.itraceyou.com/vrfc.pl?p=al3939ajsdl38476" HEIGHT=1 WIDTH=1>

Note that we set the *HEIGHT* and the *WIDTH* of the tag to 1 (one). That's because we don't want the addressee to see any image. It is also important to note that in order for this *CGI-SCRIPT* to work, its parsing routine needs to work using *GET* mode, instead of using *POST* mode.

- **Sending the customized e-mail message to the addressee**

The customized tag *<IMG>* is added to the original message body (actually to the first part of the message body, because in case of multi-part/mixed messages, the first part is the part that contains the text message), and the message is passed to a mail program (such as *sendmail*). This program sends the message to the addressee's e-mail address as an *HTML* message using the *MIME TYPE text/html*, not as an *HTML* file attachment. Note that we do NOT attach an extra *HTML* file to the message. We just say that the message body is a text that should be interpreted as an *HTML* document. By taking advantage of this format, the addressee does not have an attachment to open and to analyze. Therefore, as soon as he/she opens the e-mail message, the tag is interpreted, the *CGI-SCRIPT* is called, and the *PIN* is activated.
Also, note that none of the original file attachments is lost. As soon as they are added to the customized message, they are removed from the temporary directory, and then they are sent to the original addressee.

- **The addressee's browser and the *PIN* activation**

In order to activate the process of sending a confirmation receipt to the sender, the addressee must receive and open the e-mail message using any *mail-reader* application that automatically interprets *HTML* tags, and the addressee must be connect to the Internet at the time of reading the message. Only when these requisites are followed, the <*IMG*> tag can activate the *PIN* and the sender be notified.

- **Making the delivered confirmation available to the sender**

As soon as the *PIN* is activated by the action of the addressee, the sender becomes able to receive the confirmation receipt that contains details about the activation process, such as (but not limited to) the date and time that the e-mail was opened, and the number of times that the user has opened that specific e-mail.

C) The best mode of carrying out this invention

In order to have a real implementation of our idea, we idealized and implemented a system called *itraceyou*, which stands for "*I Trace You*".

The following specific technical instruments were necessary to implement this system.

- Regular programs and *CGI-SCRIPTS* written using the programming language *perl*;
- The following *perl* libraries are necessary: *MIME::Parser, MIME::Entity 4.113, and Mail::Send*;
- The Open Source application called *procmail*, which works along with *sendmail*, and is responsible for interpreting the *.forward* file. According to the information provided by the *.forward* file, the mailserver knows how to handle all the incoming mail. In our case, specifically, we need to tell the mailserver to redirect all the incoming e-mails to a specific *CGI-SCRIPT* (That's how we process all the incoming e-mails that are originally addressed to the *@itraceyou.com* domain);
- A *SQL* database is also necessary to store all the information regarding the system, which includes (but is not limited to) the storage of all registered users, and all the information regarding the *PIN* attributes. In our scenario, we initially used an *mSQL* database, but later we migrated to a *MySQL* database.

The *itraceyou* system is composed of two parts, and both parts are based on our invention.

The first part is a gateway, which allows any person to freely use our invention no matter what mail-reader application the person has. This gateway is best described as a program, which is responsible for receiving all the incoming e-mails in a specific mailbox and handling those e-mails according to the following set of criteria.

1. When entering the addressee's e-mail in his/her mail-client application, the sender needs to replace the symbol @ with the symbol #, append the symbol @ to the end of the e-mail address, and add the name of our domain, which currently is `itraceyou.com`, to the very end of the e-mail address. Next, you can see an example of what it would look like sending an e-mail message to the e-mail address `webmaster@lessaworld.com`:

   `webmaster#lessaworld.com@itraceyou.com`

2. Once our system receives the e-mail, it splits the message fields: *FROM*, *TO*, *SUBJECT*, and the message body, which may or may not contain attached files. The message field *TO* must be correctly formatted in order to be redirected according to what is proposed by the system. The system is in charge of taking the given value and converting it into the real format of the addressee's e-mail address. This treatment consists of replacing the symbol # with the symbol @, and removing the extension `@itraceyou.com`.
3. Based on the information provided in the *FROM* field, we are able to identify the electronic address of the sender.
4. At this moment, we put aside the message body and all the attached files (if they exist). Each attached file is temporarily stored to be re-attached to the message later.
5. The message body is converted to *HTML* format and the special tag *<IMG>* is added to the *HTML* code. Note that this tag contains the identification code (*PIN*) that was previously explained in this same document.
6. All the original files that came as part of the original message are attached to this processed message. Then, the message is sent to the e-mail address of the sender's real addressee. Note that the message's header is set to *text/html* in order to enforce the addressee's mail-client to read the message as if it were an *HTML* file.
7. Once the addressee opens the e-mail that was sent by the sender, the addressee's mail-reader application makes a call to the *CGI-SCRIPT*, which is informed in the *SRC* attribute of the *<IMG>* tag. This call carries the *PIN* code of that specific e-mail and activates another script in our system that sends a message back to the sender saying that the message to the addressee was delivered.

The second part of our system, which is also totally based on our invention, is best described as a simple Web mail mechanism. If, for some reason, the sender can't access his/her personal mail-reader application, the *itraceyou* system provides a web interface that allows the user to send a message directly through the system interface. It runs as follows.

1. The sender accesses the *itraceyou* system and fill out a basic form containing his/her personal information, such as (but not limited to) name, e-mail, country, and so forth. Then, he/she defines a login name and password.
2. Whenever the sender wants to send an e-mail to someone, he/she opens the web mail form, and provides the following information that will become part of his message: the addressee's e-mail address, the message's subject, and the message's body. A *FROM* value is not necessary because it is taken directly from the e-mail that he/she has provided in the personal-information form. Note that the web mail form requires the sender to provide his/her system's login and password.
3. Once the user presses the confirmation button, a *PIN* is created for the message, the *<IMG>* tag containing the identification code of that e-mail (*PIN*) is appended to the message body, and the message is sent to the given addressee e-mail address.

In the *itraceyou* system, the gateway mechanism was named *Tracebox*, and the Web mail mechanism was named *WebTrace*. Since August 19 of the year 2000, the implementation of the invention described in this document has been available at the following URL:

`http://www.alugueaqui.com.br/itraceyou/`

However, there are plans to move its location to the following URL by October of 2000.

`http://www.itraceyou.com`