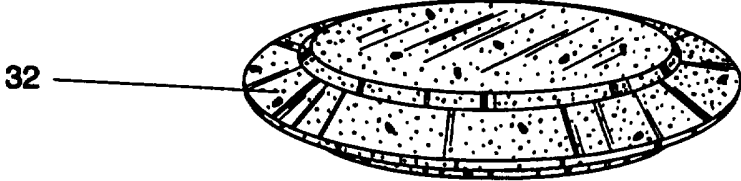


PCTWORLD INTELLECTUAL
International Bureau

INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(51) International Patent Classification ⁶ : A01K 5/00, F41J 9/16	A1	(11) International Publication Number: WO 96/03862 (43) International Publication Date: 15 February 1996 (15.02.96)
(21) International Application Number: PCT/US95/09288 (22) International Filing Date: 20 July 1995 (20.07.95) (30) Priority Data: 08/283,539 1 August 1994 (01.08.94) US 08/449,948 25 May 1995 (25.05.95) US (71)(72) Applicant and Inventor: HELLINGS, Deborah [US/US]; P.O. Box 37247, Tallahassee, FL 32315 (US). (74) Agents: DIXON, Trinidad et al.; 812 E. 6th Avenue, Tallahassee, FL 32303 (US).		(81) Designated States: AT, AU, BB, BG, BR, BY, CA, CH, CZ, DE, DK, ES, FI, GB, HU, JP, KP, KR, KZ, LK, LU, MG, MN, MW, NO, NZ, PL, PT, RO, RU, SD, SE, SK, UA, US, UZ, VN, European patent (AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG). Published <i>With international search report.</i>
(54) Title: A NON-TOXIC, EDIBLE, AND BIODEGRADABLE SKEET AND METHOD OF MAKING THE SAME (57) Abstract The invention provides for an environmentally safe composition of a non-toxic, edible, biodegradable skeet (32) that is used for trap shooting. The skeet is designed so that it can be stacked as well as being able to withstand the throwing force of the trap. The skeet (32) is fabricated from a mixture of flour, water, and a non-toxic material. This non-toxic material can be an edible substance, such as birdseed (36), an additive such as fertilizer, or a combination of the substance and the additive. This composition of flour, water, and non-toxic material is placed in a mold and is baked to harden. The resulting skeet (32) is one which is easily breakable by a shotgun blast but able to withstand the throwing force of the trap. The design and shape of the skeet possesses an aerodynamic structure which permits the target (skeet) to be projected with considerable speed into the air. 		

FOR THE PURPOSES OF INFORMATION ONLY

Codes used to identify States party to the PCT on the front pages of pamphlets publishing international applications under the PCT.

AT	Austria	GB	United Kingdom	MR	Mauritania
AU	Australia	GE	Georgia	MW	Malawi
BB	Barbados	GN	Guinea	NE	Niger
BE	Belgium	GR	Greece	NL	Netherlands
BF	Burkina Faso	HU	Hungary	NO	Norway
BG	Bulgaria	IE	Ireland	NZ	New Zealand
BJ	Benin	IT	Italy	PL	Poland
BR	Brazil	JP	Japan	PT	Portugal
BY	Belarus	KE	Kenya	RO	Romania
CA	Canada	KG	Kyrgyzstan	RU	Russian Federation
CF	Central African Republic	KP	Democratic People's Republic of Korea	SD	Sudan
CG	Congo	KR	Republic of Korea	SE	Sweden
CH	Switzerland	KZ	Kazakhstan	SI	Slovenia
CI	Côte d'Ivoire	LI	Liechtenstein	SK	Slovakia
CM	Cameroon	LK	Sri Lanka	SN	Senegal
CN	China	LU	Luxembourg	TD	Chad
CS	Czechoslovakia	LV	Latvia	TG	Togo
CZ	Czech Republic	MC	Monaco	TJ	Tajikistan
DE	Germany	MD	Republic of Moldova	TT	Trinidad and Tobago
DK	Denmark	MG	Madagascar	UA	Ukraine
ES	Spain	ML	Mali	US	United States of America
FI	Finland	MN	Mongolia	UZ	Uzbekistan
FR	France			VN	Viet Nam
GA	Gabon				

TITLE OF THE INVENTION

A Non-Toxic, Edible, And Biodegradable Skeet and Method of Making The Same

BACKGROUND OF THE INVENTION

5 1. Field of the Invention

The present invention relates to in the composition of skeets used in traps or skeet shootings and more particularly the present invention relates to a composition which is completely biodegradable, edible, as well as being non-toxic.

10 2. Description of the Prior Art

A number of attempts have been made to produce a non-toxic skeet/clay pigeon. Most of these pigeons are designed to change the composition of the toxic clay pigeon in order to reduce the toxic component of the clay pigeon.

15 One such device is disclosed in US Patent No. 5,316,313 issue to Moore. Moore discloses a biodegradable clay target that is fabricated from clay and includes usually less than about 1 weight percent of seeds and fertilizer. Though this target is formed from greenware product which has been dried at
20 a low water contents to produce a device that is not environmentally toxic, Moore is silent to disclosing his device to be completely edible or as well as being valuable to the environment. Further, Moore's process utilizes materials that may be difficult to retrieve and obtain as well as provide a
25 steps, such as sieving, that are tedious and time consuming to perform.

 None of the previous efforts, however, provide the benefits intended with the present invention. Additionally, prior techniques do not suggest the present inventive combination of
30 component ingredients and method of preparation as disclosed and claimed herein. The present invention achieves its intended purposes, objectives and advantages over the prior art device through a new, useful and unobvious combination of component ingredients, which are simple to make and use, with the
35 utilization of a minimum number of functioning ingredients, at a

reasonable cost to manufacture, prepare, test and by employing only readily available ingredients.

SUMMARY OF THE INVENTION

The present invention provides for the composition of a non-toxic edible, biodegradable skeet for skeet and trap shooting.

5 The elements used to fabricate the first embodiment of the non-toxic edible biodegradable skeet or the fragile flying target of the present invention comprises of flour, water, a non-toxic material. The non-toxic material may include at least one edible substance, such as birdseed, a non-toxic additive,
10 such as salt, or a combination thereof.

 The elements used to fabricate the second embodiment of the non-toxic edible biodegradable skeet or the fragile flying target of the present invention comprises of sugar, water, a non-toxic material. The non-toxic material may include at least
15 one edible substance, such as birdseed, a non-toxic additive, such as salt, or a combination thereof.

 The use of the edible substance, in both the first and second embodiments, will provide for a skeet that when shattered will be consumed by local animals while the use of the additive
20 will provide for a skeet that is tailored to a specific need or environment. An edible and biodegradable polymer can be utilized as a filler. Additionally, food coloring or a soy ink coloring substance may be utilized for enhancing the visually of the skeet of the present invention.

25 The present invention is so constructed and designed to provide for the edible skeet to be generally fabricated in a saucer shape. This shape will enable the pigeon to be placed on a conventionally mechanical disk throwing apparatus, known as a trap. The unique ingredients used to formulate the present
30 invention produces a skeet that is easily breakable by a shotgun blast as well as being strong enough to withstand the force of the mechanical disk throwing apparatus. The combination of the shape and the composition of both the first and second embodiment provides for a skeet that has an aerodynamic
35 structure as well as being environmentally safe and non-toxic to the environment.

Accordingly, it is an object of the present invention to provide a non-toxic skeet that possess all the qualities of a clay pigeon, but will not harm the environment.

It is another object of the present invention to provide
5 for a non-toxic skeet that is formed from edible materials to enable its consumption by a plurality of animals.

It is yet another object of the present invention to provide for a non-toxic skeet that is biodegradable, inexpensive to fabricate, durable when released from the disk throwing
10 apparatus, and breakable once contact has been made with a bullet.

It is still yet another object of the present invention to provide for a non-toxic biodegradable skeet to which may be added various ingredients to adapt the skeet to the specific
15 environment in which it is used.

The foregoing has outlined rather broadly the more pertinent and important features of the present invention in order that the detailed description of the invention that follows may be better understood so that the present
20 contribution to the art can be more fully appreciated. Additional features of the invention will be described hereinafter which form the subject of the claims of the invention. It should be appreciated by those skilled in the art that the conception and the specific embodiments disclosed may
25 be readily utilized as a basis for modifying or designing other structures for carrying out the same purposes of the present invention. It should also be realized by those skilled in the art that such equivalent structures do not depart from the spirit and scope of the invention as set forth in the appended
30 claims.

BRIEF DESCRIPTION OF THE PREFERRED EMBODIMENTS

Fig. 1 is a perspective view of a disc shape skeet of the first embodiment and second embodiment of the present invention.

Fig. 2 is a perspective view of a stack of skeets of the
5 first and second embodiments of the present invention.

Fig. 3 is an environmental perspective view of the instant invention after being hit by a marksman, being eaten by local birds.

DESCRIPTION OF THE PREFERRED EMBODIMENTS

The present invention is drawn to the composition of a non-toxic, edible, biodegradable skeet that is used for trap shooting. The skeet or fragile flying target 32 of the present invention, illustrated in figures 1-3, has a saucer-like shape (see figure 1), the same as that of a conventional skeet.

The present invention uniquely combines ingredients or elements to produce a skeet that is non-toxic and biodegradable. The combination of the ingredients produces a skeet that retains its aerodynamic structure as well as being beneficial to the environment.

The elements used to fabricate the first embodiment of the non-toxic, edible, biodegradable skeet of the present invention comprises of flour, water, and a non-toxic material. This non-toxic material can be at least one non-water soluble edible substances, at least one additive, or a combination of at least one edible substance with at least one additive. An edible and biodegradable polymer can be utilized as a filler.

The first embodiment of the present invention is so constructed and designed to provide for the edible skeet to be generally fabricated in a standard skeet mold.

The first step involved in forming the non-toxic edible biodegradable skeet of the present invention is to mix the flour with the non-toxic material. This will provide for the flour to be mixed with either at least one non-water soluble edible substance (i.e. bird seed), or at least one additive (i.e. salt and fertilizer), or a combination of at least one non-water soluble edible substance and at least one additive (i.e. bird seed and salt). The mixing of the flour with either the substance(s), or additive(s), or a combination of the substance(s) and additive(s) will provide for a mixture.

Examples of non-water soluble edible substances can include, but not be limited to; bird seed (millet, milo sorghum, sun flower seed, or combination thereof), corn (whole, cracked, meal, or combination thereof), grain (wheat, barley, oats, bran, feed or combination thereof), process grain products (quick

cooking grits, cream of wheat, quick cooking rice, or the like), rice (brown, white), grass (rye, hay, straw), wood (cypress mulch, pine, pine needles, cedar), a combination thereof, or the like.

5 These edible substances provide for the shattered skeet to be enjoyed and consumed by the local animals.

 Examples of the non-toxic additive include salt, bone meal, deciduous earth, processed grits, cream of wheat, ground quick cooking rice, manure, non-toxic fertilizer, non-toxic
10 insecticide, flake fish, oil, butter, margarine, a combination thereof, or the like.

 These additives serve to adapt the biodegradable skeet to the environment in which it will be used or to improve the performance of the skeet. For instance, salt may be added to
15 give additional strength by increasing the crystallized bonding of the ingredients, and acts as a preservative.

 The non-toxic fertilizer such as bone meal, manure or the like may be added to improve soils. The insecticide that is non-toxic to animals and humans for example deciduous earth,
20 processed grits, cream of wheat or ground quick cooking rice can be added to discourage ants.

 One type of non-toxic insecticides is deciduous earth. Deciduous earth consists of ground limestone containing the sharp particles of fossilized shells, the sharp edges of the
25 shells cut the ants or other insects to eventually kill them while not causing harm or injury to other animals.

 For shooting over water, ground or flaked fish food may be added to the mixture.

 The skeet of the present invention may be colored for
30 enabling easier visibility. In order to accomplish this task, food coloring may be baked in the mixture or the cooked skeet may be painted with a non-toxic paint product.

 After the flour and non-toxic material are mixed, the next step is to add water to the mixture. This addition of water
35 will provide for the mixture to have a paste-like consistency which has a viscosity similar to cooked oatmeal.

The amount of flour in combination with the substance(s), additive(s), or combination thereof will be at least twice the volume of the amount of water that is used. Hence, the mixture, prior to the addition of water, will be at least twice the
5 volume of the volume of water that is utilized.

After the mixing stage, the compound (flour, water, non-toxic material) is then placed in a skeet mold and the compound is then treated by heat (or cooked).

The heating or cooking process includes baking the compound
10 at a medium to high temperature (approximately 325-400 degrees C). Baking will permit for heat to be applied at a constant rate. The heat will enable for the substance to harden. After the mixture has been cooked and hardened, it is cooled and removed from the mold. The final weight of the cooked skeet
15 will be approximately 3.0 to 5.0 ounces. The skeet 32 may be painted with a soy ink agent to improve visibility, if food coloring was not added during baking.

In the second embodiment, the elements used to fabricate the non-toxic, edible, biodegradable skeet of the present
20 invention comprises of sugar, water, and a non-toxic material. This non-toxic material can be at least one non-water soluble edible substance, at least one additive, or a combination of at least one edible substance with at least one additive. An edible and biodegradable polymer can be utilized as a filler.

25 The second embodiment is so constructed and designed to provide for the edible skeet to be generally fabricated in a standard skeet mold.

The first step involved in forming the second embodiment of the non-toxic, edible, biodegradable skeet of the present
30 invention is to mix and heat water, sugar and a non-toxic material. This mixture is heated until the combination resembles a syrupy material. This syrupy material is poured into a skeet and left to harden.

These skeet 32, of the first and second embodiments are
35 shaped to be stacked and transported while retaining their structural integrity (see figure 2). The combination of the

ingredients and final weight enables the skeet to withstand the throwing force of the trap mechanism, while maintaining its aerodynamic structure. Additionally, the skeet 32 are also designed and constructed to shatter into fragments 34 when hit
5 by a marksman, thus satisfying the victory condition for the sport of skeet shooting.

Once shattered, the edible pieces (such as birdseed 36) of the skeet can be consumed by the local animals 38.

While the invention has been particularly shown and
10 described with reference to an embodiment thereof, it will be understood by those skilled in the art that various changes in form and detail may be made without departing from the spirit and scope of the invention.

I Claim:

1. A biodegradable fragile flying target comprising:
a baked compound of materials;
5 said baked compound comprises of flour, at least one
non-toxic material, and water;
 said flour and said at least one non-toxic
material provide for a mixture;
 said mixture is at least twice the volume of
10 said water; and
 said flying target having an aerodynamic structure and
constructed to retain its integral configuration when thrown by
a trap mechanism and is easily breakable by a shotgun blast.
- 15 2. A biodegradable fragile flying target as in claim 1 wherein
food coloring is used to color said flying target or said flying
target is coated with a non-toxic paint or ink.
- 20 3. A biodegradable fragile flying target as in claim 1 wherein
said non-toxic material is at least one edible substance, and
said edible substance is selected from the group comprising of
birdseed, corn, grain, processed grain, rice, grass, and wood.
- 25 4. A biodegradable fragile flying target as in claim 1 wherein
said non-toxic material is at least one additive, and said
additive is selective from the group comprising of salt, bone
meal, deciduous earth, manure, non-toxic fertilizer, non-toxic
insecticide, oil, butter, margarine, and flake fish.
- 30 5. A biodegradable fragile flying target as in claim 1 wherein
said non-toxic material is at least one edible substance and at
least one additive;
 said edible substance is selected from the group comprising
of birdseed, corn, grain, processed grain, rice, grass, and
35 wood; and

said additive is selective from the group comprising of salt, bone meal, deciduous earth, manure, non-toxic fertilizer, non-toxic insecticide, oil, butter, margarine, and flake fish.

5 6. A biodegradable fragile flying target as in claim 3 wherein food coloring is used to color said target.

7. A biodegradable fragile flying target as in claim 3 wherein said flying target is coated with a non-toxic paint or ink.

10

8. A biodegradable fragile flying target as in claim 4 wherein food coloring is used to color said target or said flying target is coated with a non-toxic paint.

15 9. A biodegradable fragile flying target as in claim 5 wherein food coloring is used to color said flying target or said flying target is coated with a non-toxic paint or ink.

20 10. A biodegradable fragile flying target as in claim 1 wherein said flying target has a weight of approximately three to five ounces.

25 11. A biodegradable fragile flying target as in claim 3 wherein said flying target has a weight of approximately three to five ounces.

30 12. A biodegradable fragile flying target as in claim 5 wherein said flying target has a weight of approximately three to five ounces.

13. A method of making a biodegradable flying target comprising the steps of:

(a) mixing flour and at least one non-toxic material to provide for a mixture;

35 (b) adding water to said mixture so that said mixture is at least twice the volume of said water;

- (c) placing said pasty mixture in a skeet mold;
- (d) baking said pasty mixture to harden said pasty mixture; and
- (e) removing said mold to produce said biodegradable flying target and said flying target having an aerodynamic structure and constructed to retain its integral configuration when thrown by a trap mechanism and is easily breakable by a shotgun blast.
- 10 14. A method as in claim 13 wherein step (b) further includes adding food coloring to said mixture.
- 15 15. A method as in claim 13 further comprising:
- (f) painting said flying target with a non-toxic ink or paint.
- 20 16. A method as in claim 13 wherein said non-toxic material includes at least one edible substance, and said edible substance is selected from the group comprising of birdseed, corn, grain, processed grains, rice, grass, and wood.
- 25 17. A method as in claim 13 wherein said non-toxic material is at least one additive, and said additive is selective from the group comprising of salt, bone meal, deciduous earth, manure, non-toxic fertilizer, non-toxic insecticide, oil, butter, margarine, and flake fish.
- 30 18. A method as in claim 13 wherein said non-toxic material is at least one edible substance and at least one additive;
- said edible substance is selected from the group comprising of birdseed, corn, grain, processed grain, rice, grass, and wood; and
- said additive is selective from the group comprising of salt, bone meal, deciduous earth, manure, non-toxic fertilizer,
- 35 non-toxic insecticide, oil, butter, margarine, and flake fish.

19. A biodegradable fragile flying target as in claim 1 wherein a non-toxic polymer filler is added to said mixture.

20. A biodegradable fragile flying target comprising:

5 a hardened mixture of material;

 said hardened mixture comprises of sugar, at least one non-toxic material, and water;

 said non-toxic material is at least one edible substance and at least one additive;

10 said edible substance is selected from the group comprising of birdseed, corn, grain, processed grain, rice, grass, and wood;

 said additive is selective from the group comprising of salt, bone meal, deciduous earth, manure, non-
15 toxic fertilizer, non-toxic insecticide, oil, butter, margarine, and flake fish; and

 said flying target having an aerodynamic structure and constructed to retain its integral configuration when thrown by a trap mechanism and is easily breakable by a shotgun blast.

20

1 / 1

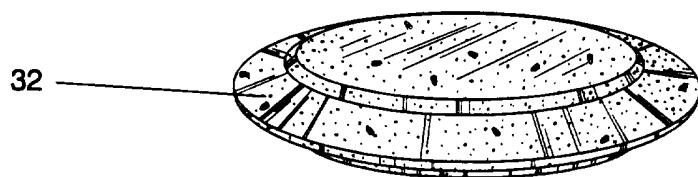


Figure 1

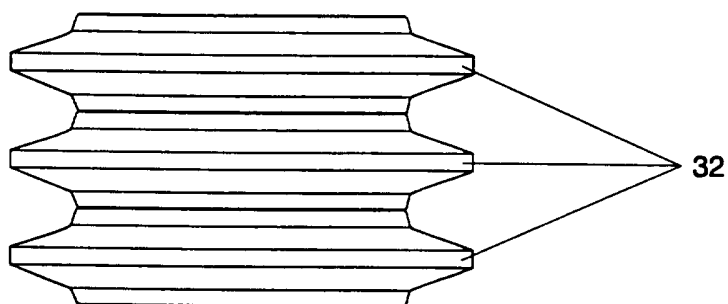


Figure 2

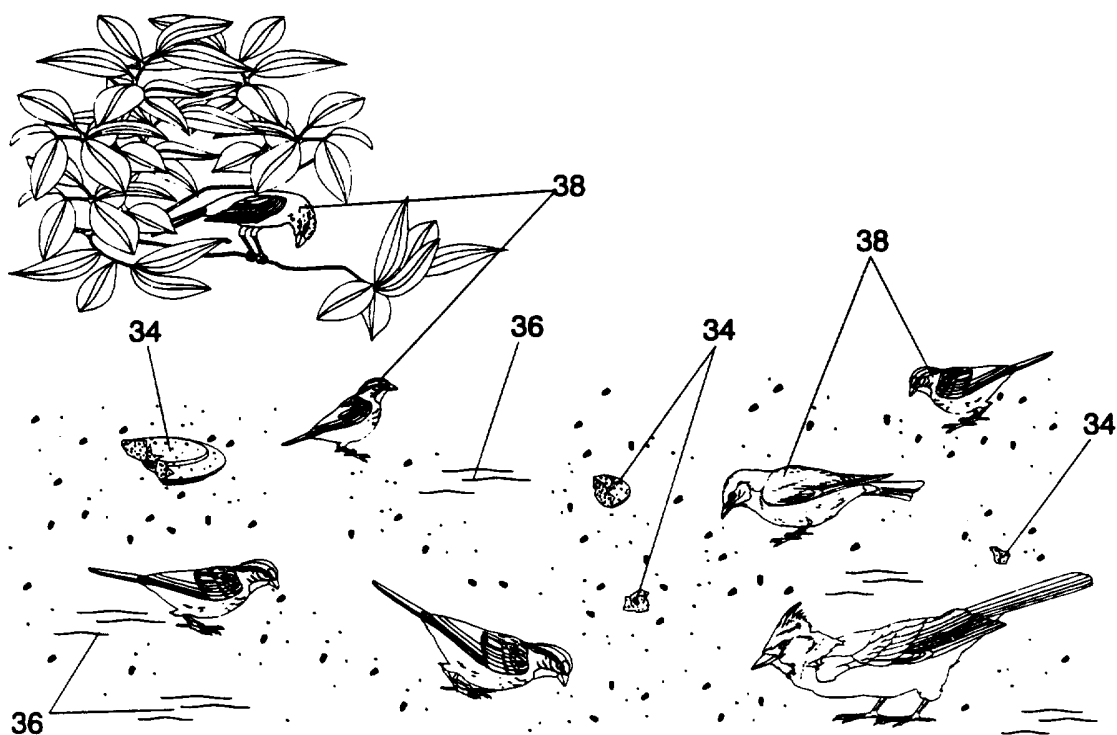


Figure 3

INTERNATIONAL SEARCH REPORT

International application No.

PCT/US95/09288

A. CLASSIFICATION OF SUBJECT MATTER

IPC(6) : A01K 5/00; F41J 9/16

US CL : 119/51.01, 51.03; 273/363, 380

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

U.S. : 119/51.01, 51.03; 273/362, 363, 380

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched
NONEElectronic data base consulted during the international search (name of data base and, where practicable, search terms used)
NONE

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US, A, 5,174,581 (GOODSON) 29 December 1992.	1-20
A	US, A, 5,316,313 (MOORE) 31 May 1994.	1-20

☐ Further documents are listed in the continuation of Box C.☐ See patent family annex.

* Special categories of cited documents:

"A" document defining the general state of the art which is not considered to be part of particular relevance

"E" earlier document published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T"

later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X"

document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y"

document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

"A"

document member of the same patent family

Date of the actual completion of the international search

12 SEPTEMBER 1995

Date of mailing of the international search report

08 NOV 1995

Name and mailing address of the ISA/US
Commissioner of Patents and Trademarks
Box PCT
Washington, D.C. 20231

Facsimile No. (703) 305-3230

Authorized Officer

WILLIAM H. GRIEB

Telephone No. (703) 308-3549