



Adaptive Global Solutions, LLC

USPTO Claims Drafting essentials

There are three basic rules to drafting US Patent Application that a United States Patent and Trademark Examiner will apply when viewing a Patent Claim:

1. Preamble: “Every claim needs a preamble, which is the introductory phrase in a claim. The general rule is that the preamble of a claim does not limit the scope of the claim, but try and stay away from functional language”;
2. Transition: “Every claim need a transition. The common transitions are:
 - a) Comprising – which “...is by far the most common because it means the invention includes but is not limited to the elements identified in the claim”;
 - b) Consisting essentially of: which “... limits the scope of the claim to the specified materials or steps ‘and those that do not materially affect the basic and novel characteristic(s)’ of the claimed invention””; and,
 - c) Consisting of: which “... is closed and means that the invention is only what is described.”
3. The Antecedent Basis: The first time you introduce a limitation (i.e., an element, characteristic, internal reference, etc.) you must introduce it with either ‘a’ or ‘an’, ... (i.e., Primary antecedent basis);
Subsequently, you refer to the already introduced limitation by either ‘said’ or ‘the.’ (i.e., Secondary

What is claimed is:

1. A fire extinguishing device comprising a drone, said drone comprising: **(this is the Preamble of the Claim)**
 - a) Outer hull;
 - b) An interior hull;
 - c) A heat resistant material;
 - d) A damage tolerant airframe;
 - e) A fire extinguishment mechanism;
 - f) A control system configured to receive and send signals;
 - g) A control system configured to use Artificial Intelligence with Deep Neural Learning, and Graphics Processing Units;
 - h) A power system;
 - i) An airbrake system;

#1 above is your Independent Claim. You are allowed 3 Independent Claims and 20 Dependent Claims under one application. Using any additional Independent and/or Dependent Claims will increase the cost of the Application, but, may help to distinguish your invention from what already exists as Prior Art.

Wherein: (“Wherein is used to pull what is claimed, together)

- a) said control system is wirelessly connected to an artificial intelligence system, which can coordinate more than one said devices;
- b) said control system can be programmed or receive signals to direct said device to fly to the neighborhood of a place having a fire or suspected of having a fire;
- c) said control system with minimum search, flight and targeting programming will search for a fire target area, using pre-programed data and scan data in real time to learn the environment, the wildland environment and the fire environment;
- d) when the control system senses the presence of fire or excessive heat, it commands air or a non-combustible gas to be pumped into the air chamber until the pressure in said air chamber is high enough where the control system will command the doors of the fuselage open and to align the structural doors or openings of the air chamber to open, resulting in a detonation which generates a shock wave.

2. The device of claim 1, (**Independent Claim**) further comprising an outer hull (**the dependent Claim, i.e., it depends upon claim #1**), consisting of:
 - a) An extreme heat resistant damage tolerant airframe;
 - b) An exterior facing wall surface consisting of a heat resistant material;
 - c) An interior facing wall surface consisting of a heat resistant material;
 - d) An insulating material fitted between exterior and interior surfaces;

3. The device of claim 1, (**Independent Claim**) further comprising a second hull, (**the dependent Claim, i.e., it depends upon claim #1**), consisting of:
 - a) An extreme heat resistant damage tolerant airframe;
 - b) An exterior facing wall surface consisting of a heat resistant material;
 - c) An interior facing wall surface consisting of a heat resistant material;
 - d) An insulating material fitted between exterior and interior surfaces;

Claims #2 and #3 are your Dependent Claims. Both related back to the Independent Claim (#1), and rely upon Claim #1.

To better distinguish the claim

What is claimed is:

1. A fire extinguishing device comprising an unmanned aerial vehicle, said unmanned aerial vehicle comprising: (this is the Preamble of the Claim)(the “unmanned aerial vehicle” gives greater specificity”)
 - a) Outer hull;
 - b) An interior hull;
 - c) A heat resistant material;
 - d) A damage tolerant airframe;
 - e) A fire extinguishment mechanism;
 - f) A control system configured to receive and send signals;
 - g) A control system configured to use Artificial Intelligence with Deep Neural Learning, and Graphics Processing Units;
 - h) A power system;
 - i) An airbrake system;

Wherein: (“Wherein is used to pull what is claimed, together)

- a) said control system is wirelessly connected to an artificial intelligence system, which can coordinate more than one said devices;
- b) said control system can be programmed or receive signals to direct said device to fly to the neighborhood of a place having a fire or suspected of having a fire;
- c) said control system with minimum search, flight and targeting programming will search for a fire target area, using pre-programed data and scan data in real time to learn the environment, the wildland environment and the fire environment;
- d) when the control system senses the presence of fire or excessive heat, it commands air or a non-combustible gas to be pumped into the air chamber until the pressure in said air chamber is high enough where the control system will command the doors of the fuselage open and to align the structural doors or openings of the air chamber to open, resulting in a detonation which generates a shock wave.

2. The device of claim 1, further comprising an outer hull, consisting of:
 - a) An extreme heat resistant, damage tolerant airframe;
 - b) An exterior facing wall surface **essentially consisting** of a heat resistant material **that will withstand heat as high as 2,500 degrees Fahrenheit for several hours without deteriorating**;
 - c) An interior facing wall surface **essentially consisting** of a heat resistant material **that will withstand heat as high as 2,500 degrees Fahrenheit for several hours without deteriorating**;
 - d) An insulating material **essentially consisting** of a high heat resistant foam batting **that will withstand heat as high as 2,500 degrees Fahrenheit for several hours without deterioration, that is** fitted between exterior and interior surfaces;

(#2 is the dependent claim. It relates back to and relies upon the Independent Claim, Claim #1).

3. The device of claim 1 further comprising an interior hull, consisting of:
 - a) An extreme heat resistant, damage tolerant airframe;
 - b) An exterior facing wall surface **essentially consisting** of a heat resistant ceramic material **that will withstand heat as high as 2,500 degrees Fahrenheit for several hours without deteriorating**;
 - c) An interior facing wall surface **essentially consisting** of a heat resistant ceramic material **that will withstand heat as high as 2,500 degrees Fahrenheit for several hours without deteriorating**;
 - d) An insulating material essentially consisting of a high heat resistant foam batting that will withstand heat as high as 2,500 degrees Fahrenheit for several hours without deteriorating, that is fitted between exterior and interior surfaces;

(#3 is the dependent claim. It relates back to and relies upon the Independent Claim, Claim #1).

Referenced from USPTO, STEPP Inventor 3-Day Course, “Claim Drafting Requirements”

A few additional comments

- With the introduction of the American Inventors Act of 2012, Applications filed with the USPTO on or after September 1, 2012, will need to be narrow in scope or specificity, not broad and general.
- When drafting a claim think of how someone may infringe your claim.
- Do not mix within the same claim an apparatus, a composition claim, or claim with a process claim. Draft them as separate claims within an Application. Mixing such claims will all but assure a rejection.
- Each claim must be enabling and must be backed up by your specifications (Detailed Description) section.
- You (or your client) are your own lexicographer. A good practice is to include a separate page that define terms that are specific to your invention and/or may have specific intended meaning within your invention but may not otherwise be known to an Examiner or others.
- Each component should have a consistent, specific identifier, such as a number and/or letter. If you use, e.g., a widget (1) in Figure 1/14 and the same widget (2) in Figure 12/14, even though Figure 12/14 is different from or is another rendering of Figure 1/14, do not give it a different identifier in Figure 12/14.
- Another good practice is to include a sheet that identifies the components of an invention. This will aide your USPTO Examiner.

