



Patent searching – A Preview

Marie-Renée De Sève Leboeuf

Librarian

École de technologie supérieure

Patent searching – A Preview

Patent – definition:

« A patent is a set of exclusive rights granted by a sovereign state or intergovernmental organization to an inventor or assignee for a limited period of time in exchange for detailed public disclosure of an invention. An invention is a solution to a specific technological problem and is a product or a process.»

(Wikipedia, 2018)



Patent searching – A Preview

What is the essential information to know about patents before searching for them?

1. Patents have a specific structure for bibliographic data and content





Office de la Propriété
Intellectuelle
du Canada

Un organisme
d'Industrie Canada

Canadian
Intellectual Property
Office

An agency of
Industry Canada

Patent number

92406 C 2007/04/17
2 293 106

(12) BREVET CANADIEN
CANADIAN PATENT
(13) C

(22) Date de dépôt/Filing Date: 1999/12/23

(41) Mise à la disp. pub./Open to Public Insp.: 2000/06/23

(45) Date de délivrance/Issue Date: 2007/04/17

(30) Priorités/Priorities: 1998/12/23 (CA2,256,944);
1999/11/26 (US60/167,614)

(51) Cl.Int./Int.Cl. *B62D 55/00* (2006.01),
B60N 2/24 (2006.01), *B60N 2/38* (2006.01),
B62D 55/07 (2006.01), *B62J 1/12* (2006.01),
B62J 25/00 (2006.01)

(72) Inventeurs/Inventors:
PECTEAU, BERTHOLD, CA;
GIROUARD, BRUNO, CA

Inventor(s)

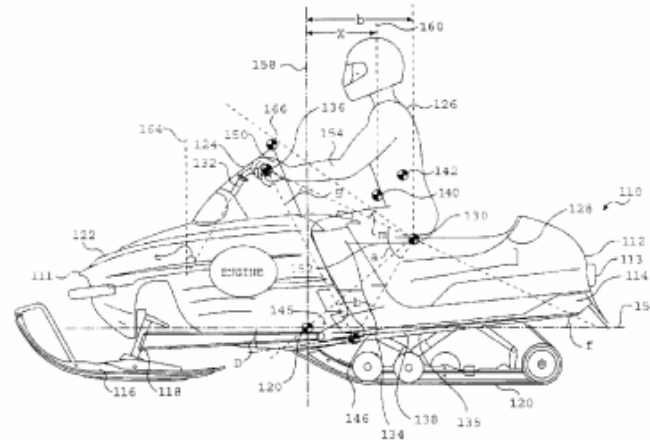
(73) Propriétaire/Owner:
BOMBARDIER RECREATIONAL PRODUCTS INC., CA

(74) Agent: OSLER, HOSKIN & HARGREAVES LLP

Patent owner (or Assignee)

(54) Titre : MOTONEIGE
(54) Title: SNOWMOBILE

Title



Abstract

(57) Abrégé/Abstract:

A snowmobile is described having a frame and an engine disposed on the frame. A drive track is disposed below the frame and connected operatively to the engine for propulsion of the snowmobile. At least one ski is disposed on the frame. A seat is disposed rearwardly of the engine, suitable for a rider with a center of gravity, and a steering device is disposed above the engine and forward of the seat, the steering device being operatively connected to the at least one ski for steering the snowmobile. The snowmobile has a center of gravity positioned such that a distance between a vertical line passing through the center of gravity of the snowmobile and a vertical line passing through the center of gravity of the rider is within a predetermined range. Also, the distance between the steering position of the snowmobile and the seat position of the rider falls within a predetermined range. The rider is positioned on the snowmobile such that lines passing through the steering position, the seat position, and the footrest position form a triangle with angles α , β , and γ that have a specific relationship to one another. In addition, the steering position is disposed forward of the forward-most drive axle of the drive track. The footrests are positioned below the seat at a declining angle Δ to the horizontal. The axis of the steering column of the snowmobile forms an angle ϵ with vertical that falls within a predetermined range. A line passing through the steering position and the seat position forms an angle δ with the horizontal that

SNOWMOBILE

Field of the Invention

The present invention concerns the overall design and construction of a snowmobile. More particularly, the present invention concerns a design for a snowmobile where, among other features, the steering control position, the seating position, and the position of the footrests are arranged in relation to one another so that the rider's center of gravity is closer to the center of gravity of the vehicle than on a conventional snowmobile. Moreover, the design for the snowmobile of the present invention improves the rider's control over the vehicle.

Background of the Invention

Conventional snowmobiles share a common construction: they combine features and elements so that the rider sits in a generally upright position in a location toward the rear of the vehicle. When seated in this fashion, the rider sits a considerable distance behind the center of gravity of the vehicle (i.e., the center of gravity of the combination of the vehicle and the rider), which is located at or in proximity to the axis of the forward-most axle of the drive track.

When a snowmobile encounters a bump as it travels over the ground, the vehicle naturally tends to pivot about its center of gravity. Accordingly, the further the rider is positioned from the center of gravity of the vehicle, the more strongly the rider will feel each bump as he passes over it. This occurs because the vehicle acts as a lever that amplifies the magnitude of the forces transferred from bumps on the ground to the rider. In the case of the conventional snowmobile, because the rider is positioned toward the rear of the vehicle, the rider is acutely aware of this phenomenon.

Accordingly, while the positioning of the rider on the conventional snowmobile is entirely adequate for enjoying the sport of snowmobiling, a need has arisen for a snowmobile where the rider's position is improved to minimize the effect of the vehicle's movement on the rider as it passes over uneven terrain.

Summary of the Invention

The present invention improves upon the conventional design by repositioning the rider on the vehicle and redesigning the layout of the vehicle to minimize the effect of the vehicle's movement on the rider as they pass over uneven terrain.

As would be understood by a person skilled in the art, a snowmobile has a center of gravity without the rider, and may have a different center of gravity with the rider. In the context of the present application it should be understood that the expression "center of gravity of a snowmobile" refers the center of gravity of a snowmobile with the rider, unless

ould be understood that in the context of the present in running condition and is full of fuel.

snowmobile with a frame and an engine disposed on the frame and connected operatively to the engine. At least one ski is disposed on the frame and a seat is provided for a rider with a center of gravity. A steering control device is disposed forward of the seat and is operatively connected to the engine.

a vertical line passing through the center of gravity of the snowmobile and a vertical line passing through the center of gravity of the rider, the distance between the two lines is preferably between about 0 and 14 cm. More preferably, distance a is between about 5 and 7 cm.

a vertical line passing through the forward-most axle of the drive axle) and a vertical line passing through the center of gravity of the rider, the distance between the two lines is preferably between about 15 and 65 cm. More preferably, distance z is between about 37 and 47 cm.

a vertical line passing through the center of gravity of the snowmobile and a vertical line passing through the center of gravity of the rider, the distance between the two lines is preferably between about 22 and 32 cm. More preferably, distance x is between about 22 and 32 cm.

a vertical line passing through the center of gravity of the snowmobile and a vertical line passing through the center of gravity of the rider, the distance between the two lines is preferably between about 5 and 55 cm. More preferably,

either side thereof, suitable for placement of the rider's feet. The angle Δ is between about $+10^\circ$ and -10° . Still more preferably, angle Δ is about -5° .

the present invention as well as other objects and further advantages of the invention are set forth in the following description which is to be used in connection with the drawings, where:

FIG. 1 is a side view of a conventional snowmobile, showing the position of the rider thereon;

FIG. 2 is a side view of the snowmobile according to the teachings of the present invention, showing the position of the rider thereon;

FIG. 3 is a side view of a conventional snowmobile and the snowmobile of the present invention on one another to illustrate the differences in their construction;

FIG. 4 is a side view of a snowmobile constructed according to the teachings of the present invention, showing the radius of travel of the steering device through the snow;

FIG. 5 is a side view of the positioning of the rider on the snowmobile of the present invention, showing the angular relationship between the rider and the snowmobile;

FIG. 6 is a side view of the position of the rider on the snowmobile of the present invention, showing the distances a , x , y , and z between various points on the snowmobile and the rider;

FIG. 7 is a side view of the position of the rider on the snowmobile of the present invention, showing the distance between the center of gravity of the snowmobile and the center of gravity of the rider.

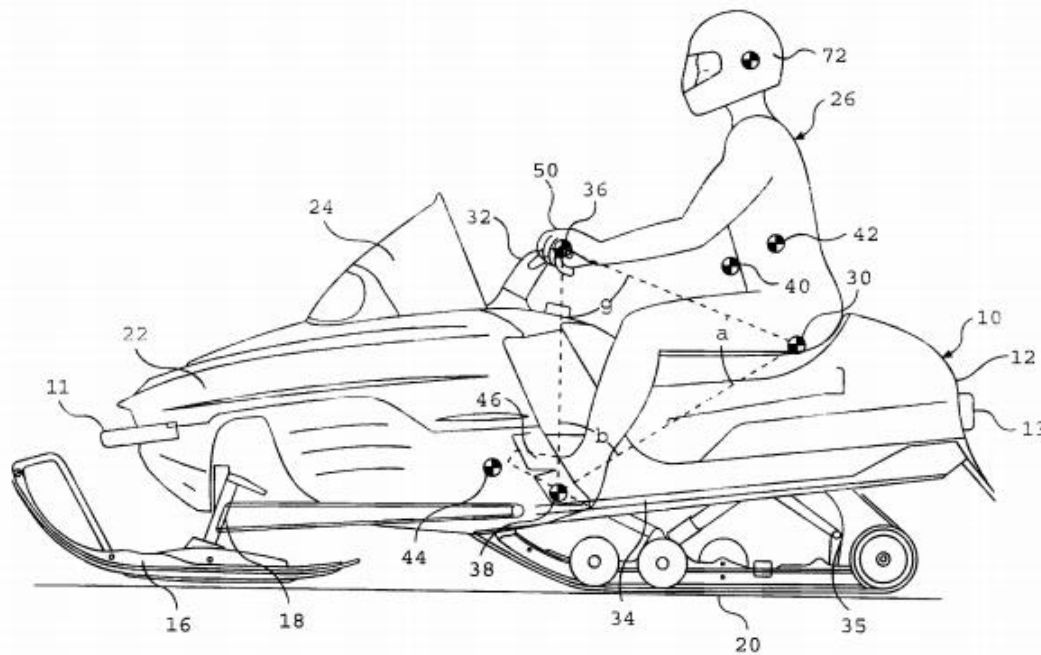
Specifications, including...

- Background of the invention
- Description of the invention

disposed forward of the seat. The steering control device is operatively connected to the engine for steering the snowmobile.

the snowmobile of the present invention, showing the distance between the center of gravity of the snowmobile and the center of gravity of the rider.

Drawings, to illustrate the technical details of the invention.



CA 02293106 2003-08-05

CA 02293106 2003-08-05

CA 02293106 2003-08-05

THE EMBODIMENTS FOR WHICH AN EXCLUSIVE PROPERTY OR PRIVILEGE IS CLAIMED ARE DEFINED AS FOLLOWS:


1. A snowmobile, comprising:
 - a frame including a tunnel;
 - an engine disposed on the frame;
 - a drive track disposed below the tunnel and being operatively connected to the engine for propulsion of the snowmobile;
 - a straddle seat disposed on the tunnel above the drive track and rearward of the engine, the seat being dimensioned to support a standard rider having dimensions and weight of a 50-percentile human male;
 - two skis disposed on the frame forward of the seat, the steering device having a steering position;
 - a steering device disposed on the frame forward of the seat, the steering device being operatively connected to the two skis for steering the snowmobile, the steering device having a steering position;
 - a pair of footrests, one footrest being disposed below each side of the seat, each footrest being dimensioned and arranged with respect to the seat and the steering device to support one of the standard rider's feet thereon, the footrests having a footrest position;
 - the snowmobile constructed and arranged such that, when the standard rider is in a standard position defined as the standard rider straddling and being seated in a biomechanically neutral position on the seat with its feet disposed on the footrests on the footrest position and its hands disposed on the steering device on the steering position with the snowmobile being steered straight on flat terrain and being in running condition and full of fuel, the snowmobile has a first center of gravity without the standard rider and a second center of gravity with the standard rider and a distance between a vertical line passing through the first center of gravity and a vertical line passing through the second center of gravity is between 0 cm and 14 cm inclusive.
2. The snowmobile of claim 1, wherein the snowmobile has a longitudinal centerline and a seat position is defined on the seat with respect to the standard rider in the

- standard position, and the seat position is a point along the longitudinal centerline wherein a distance between a vertical line passing through the point and a vertical line passing through the steering position is between 40 cm and 90 cm inclusive.
3. The snowmobile of claim 1, wherein the snowmobile has a longitudinal centerline and a seat position is defined on the seat with respect to the standard rider in the standard position, and the seat position is a point along the longitudinal centerline wherein a distance between a vertical line passing through the point and a vertical line passing through the steering position is between 50 cm and 80 cm inclusive.
4. The snowmobile of claim 1, wherein the snowmobile has a longitudinal centerline and a seat position is defined on the seat with respect to the standard rider in the standard position, and the seat position is a point along the longitudinal centerline wherein a distance between a vertical line passing through the point and a vertical line passing through the steering position is between 60 cm and 80 cm inclusive.
5. The snowmobile of claim 1, wherein the snowmobile has a longitudinal centerline and a seat position is defined on the seat with respect to the standard rider in the standard position, and the seat position is a point along the longitudinal centerline wherein a distance between a vertical line passing through the point and a vertical line passing through the steering position is 65 cm.
- The snowmobile of claim 1, wherein the snowmobile has a longitudinal centerline and a seat position is defined on the seat with respect to the standard rider in the standard position, and the seat position is a point along the longitudinal centerline wherein a distance between a vertical line passing through the point and a vertical line passing through the steering position is 70 cm.
- The snowmobile of any one of claims 1 through 6, wherein the distance between the first center of gravity and the second center of gravity is between 2 cm and 12 cm inclusive.

Claims, that define the scope of legal protection granted by a patent.


Patent searching – A Preview

What is the essential information to know about patents before searching for them?

1. Patents have a specific structure for bibliographic data and content: inventor vs. owner, patent number, specifications, claims, etc.
 2. Two versions of patents: patent application and granted patent;
 3. Since patents are legal documents, their scope is limited to a national or regional territory → Patent family;
 4. Patents available freely on the web → Many patent databases!
- 

Patent searching – A Preview

Patent databases

Database	Scope	Access
Canadian Patents Database	Canadian	Free
United States Patent and Trademark Office (USPTO)	American	Free
Espacenet	International	Free
Google Patents Search	International	Free
Patentscope	International	Free
 The Lens	International	Free
Derwent Innovations Index	International	Access fees

<https://www.etsmtl.ca/bibliotheque/collections/collections-electroniques/brevets>

Patent searching – A Preview

The Lens

- The Lens allows a mapping of the innovation landscape;
- Scope:
 - More than 81 millions patent entries from more than 100 jurisdictions (DocDB database by the European Patent Office);
 - Full-text available for American, European and Australian patents, and for World Intellectual Property Organization (WIPO) patents applications;
- Multilingual searches, but more effective in English;
- Graphical representation of results.

Patent searching – A Preview

The Lens

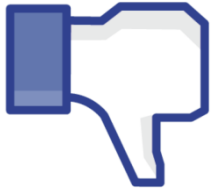


Strengths:

- ✓ Free!
- ✓ International scope
- ✓ Full-text search (for American, European, Australian patents and WIPO patent applications only)
- ✓ Results merge by patent families
- ✓ Graphical representation of results
- ✓ Many options to manage results (exportation, alerts, folder, notes, tags, share, etc.)

Patent searching – A Preview

The Lens




Weaknesses:

- ✓ Keyword searches in only one language at a time;
- ✓ No full-text or administrative records for Canadian patents.

For further information...

The essential guide...



Government
of Canada

Gouvernement
du Canada

[Français](#)

Search Canada.ca

Q

Jobs ▾Immigration ▾Travel ▾Business ▾Benefits ▾Health ▾Taxes ▾More services ▾

[Home](#) → [Canadian Intellectual Property Office](#) → [Patents](#)

A guide to patents

This guide provides you with an introduction to patents and patenting procedures. It will help you understand what patents are and get started with your patent application.

 **Important notice**

This electronic version of the guide is the official version. If there are inconsistencies between this guide and the applicable legislation, the legislation must be followed. Read our [terms](#) and [conditions](#).

On this page:

- [Understanding patents—The basics](#)
 - [Patents fuel progress](#)
 - [Patents defined](#)
 - [Trade secrets](#)
 - [What you can patent](#)
 - [When to apply for a patent](#)
- [Additional facts and issues to consider](#)

Canadian Intellectual Property Office. Government of Canada. (2017). A guide to patents.

Retrieved from https://www.ic.gc.ca/eic/site/cipointernet-internetopic.nsf/fra/h_wr03652.html

For further information...

Other resources...

Lens.org. (2013). Patent Knowledge Quiz. Retrived from <https://www.lens.org/support/help-resources/the-basics/patent-knowledge-quiz/>

Lens.org. (2013). Top Ten Facts about Patents. Retrieved from <https://www.lens.org/support/help-resources/the-basics/top-ten-facts-about-patents/>.

European Patent Office. (n.d.) Espacenet Assistant. Retrieved from <https://www.epo.org/app/wbt/espacenet/index.html>

➤ Online tutorials to learn how to search for patents.

World Intellectual Property Organization. (n. d.). Frequently Asked Questions: Patents. Retrieved from http://www.wipo.int/patents/en/faq_patents.html

Thank you!


Contact informations:

Marie-Renée De Sève Leboeuf

marie-renee.deseveleboeuf@etsmtl.ca

Office: A-0213

Phone: 514-396-8800, ext. 7823



Bibliography

Canadian Intellectual Property Office. Government of Canada. (2017). A guide to patents. Retrieved from https://www.ic.gc.ca/eic/site/cipointernet-internetopic.nsf/fra/h_wr03652.html

Wikipedia. (2018). Patent. Retrieved from <https://en.wikipedia.org/wiki/Patent>