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DOMINION OF CANADA

NUMBER

419642

To all to whom these presents shall come

Whereas

Joseph Armand Bombardier,

of Valcourt,

Quebec,

Canada,

has petitioned the Commissioner of Patents, praying for the grant of a Patent for an alleged new and useful improvement in Ski suspensions,

a description of which invention is contained in the specification of which a duplicate is hereunto attached, and made an essential part hereof, and has complied with the requirements of the Patent Act.

Now Therefore the present Patent grants to the said

Joseph Armand Bombardier,

his executors, administrators, legal representatives and assigns, for the period of Seventeen Years from the date of these presents, the exclusive right, privilege and liberty of making, constructing and using, and vending to others to be used, in the Dominion of Canada, the said invention, subject nevertheless to adjudication before any Court of competent jurisdiction.

Provided that the grant hereby made is subject to the conditions contained in the Act aforesaid.

In Testimony Whereof, I have hereunto set my hand, and caused the Seal of the Patent Office to be hereunto affixed, at the City of Ottawa, in the Dominion of Canada, this Eighteenth day of April in the year of Our Lord, one thousand nine hundred and forty-four.

J. T. Mitchell
Commissioner of Patents.

REPRESENTATIVE IN CANADA.

Entered under Section 30, of the Patent
Act 1935.

Name.....Albert Fournier,.....

Address.....934 St. Catherine St. E.,
.....Montreal, Quebec.....

ALBERT FOURNIER

PATENT ATTORNEY

934 ST. CATHERINE STREET EAST

MONTREAL

Canada

SPECIFICATION

Be it known that JOSEPH ARMAND BOMBARDIER of
Valcourt, County of Shefford, Province of Quebec,
Dominion of Canada, manufacturer, having made an invention
entitled:

" SKI SUSPENSION "

the following is a full, clear and exact disclosure of the
nature of the said invention and of the best mode of
realizing the advantages thereof.

The present invention pertains to a novel ski suspension for snow vehicle bodies, such as motor sleds, trailers and the like.

The principal object is to provide a spring suspension in such a structure. Another object is to provide a smooth running, durable and inexpensive device of this character and one that is easily assembled and repaired.

These objects are accomplished by a leverage and spring system between each ski and the vehicle body. Briefly, a pair of lever arms are intermediately fulcrumed near the ends of the ski and joined by a spring connecting their inner ends. Their outer ends are suspended from the vehicle body, one by a rigid bracket and the other by a pivoted shackle. Displacement of the ski at either or both ends, or a load on the vehicle, causes movement of the levers relatively to the ski and hence tension in the spring.

The invention is fully disclosed by way of example in the following description and in the accompanying drawings in which:

Figure 1 is a side elevation of the device;

Figure 2 is a perspective view, and

Figure 3 is a detail section.

Reference to these views will now be made by use of like characters which are employed to designate corresponding parts throughout.

In Figures 1 and 2 is shown the floor, platform or other structural member 1 of a vehicle intended to run on skis such as a trailer, for example. The skis and their suspensions are provided in any given number at the desired locations.

For each such suspension there is provided a

bracket 2 secured to and suspended from the member 1. Its lower end is forked at 3 to receive a pair of lever arms 4 pivotally held at one end by a shaft or pin 5. Beneath the bracket 2 lies a ski runner 6, on which are mounted two ears 7 to which the levers 4 are fulcrumed at 8. The remaining ends of the levers carry a pin 9 on which is mounted a U-shaped clip 10.

To this clip is attached one end of a coil spring 11 by means of a bolt and nut, or equivalent device 12. In the other end of the spring is fitted a plug 13, and into the plug is threaded a screw 14 locked by a nut 15.

The rearward portion of the runner 6 carries a pair of lugs 16 similar to the lugs 7. On these lugs are fulcrumed a pair of lever arms 17 similar to the members 4. The forward ends of the arms support a pin 18 to which is fastened one end of a clip 19 by a bolt 20. The other end of the clip is in the nature of an upturned flange 21 in which the rear end of the screw 14 is received and held by a nut 22.

Above the levers 17, a shackle is suspended from the member 1. It consists of a horizontal rod 23 fastened to the member 1 and having a pair of links 24 suspended therefrom. The lower ends of the links receive between them the rear ends of the levers 17, to which they are attached by a shaft or pin 25.

The ski 6 may be provided at its lower surface with a runner consisting of a longitudinal strip 26 and beneath it a metal strip 27, both secured to said surface in any suitable manner.

In the operation of the device, a displacement of the ski 6 relatively to the body member 1 results in a

pivotal movement of the levers 4 and 17 and hence in expansion of the spring 11, accompanied by a pivotal movement of the links 24 on the pin 23. This action occurs whether the displacement is at either end or both ends. A load on the vehicle or a shock on the ski effects such displacement. Thus, the weight of the vehicle is sprung by the spring 11 at each of the runners.

Although a specific embodiment of the invention has been illustrated and described, it will be understood that various alterations in the details of construction may be made without departing from the scope of the invention as indicated by the appended claims.

Having regard to the foregoing disclosure, the patent of which this specification forms part confers, subject to the conditions prescribed in the Patent Act, 1935, the exclusive right, privilege and liberty of making, constructing, using and vending to others to be used, the invention as defined in claims submitted by the patentee as follows:

WHAT I CLAIM AS MY INVENTION IS:

1.- In combination with a vehicle body, a runner beneath said body, a pair of levers having an intermediate pivotal point attached to said runner and spaced lengthwise of the runner, a spring joining the inner ends of said levers, and means pivotally connecting the outer ends of said levers to said body.

2.- In combination with a vehicle body, a runner beneath said body, a pair of levers having an intermediate pivotal point attached to said runner and spaced lengthwise of the runner, a spring joining the inner ends of said levers, members suspended from said body, the outer ends of said levers being connected to said members.

3.- In combination with a vehicle body, a runner beneath said body, a pair of levers having an intermediate pivotal point attached to said runner and spaced lengthwise of the runner, a spring joining the inner ends of said levers, a bracket suspended from said body, a shackle pivotally suspended from said body, the outer ends of said levers being pivotally attached respectively to said bracket and shackle.

4.- In combination with a vehicle body, a runner beneath said body, a pair of lugs mounted on said runner and spaced lengthwise thereof, a pair of levers having an intermediate point attached to said lugs, a spring joining the inner ends of said levers, and means pivotally connecting the outer ends of said levers to said body.

5.- In combination with a vehicle body, a runner beneath said body, a pair of transversely spaced levers pivotally mounted near each end of said runner and having an intermediate fulcrum, a pin passed through the inner ends of each pair, a spring joining said pins and lying lengthwise of said runner, and means pivotally connecting the outer ends of said levers to said body.

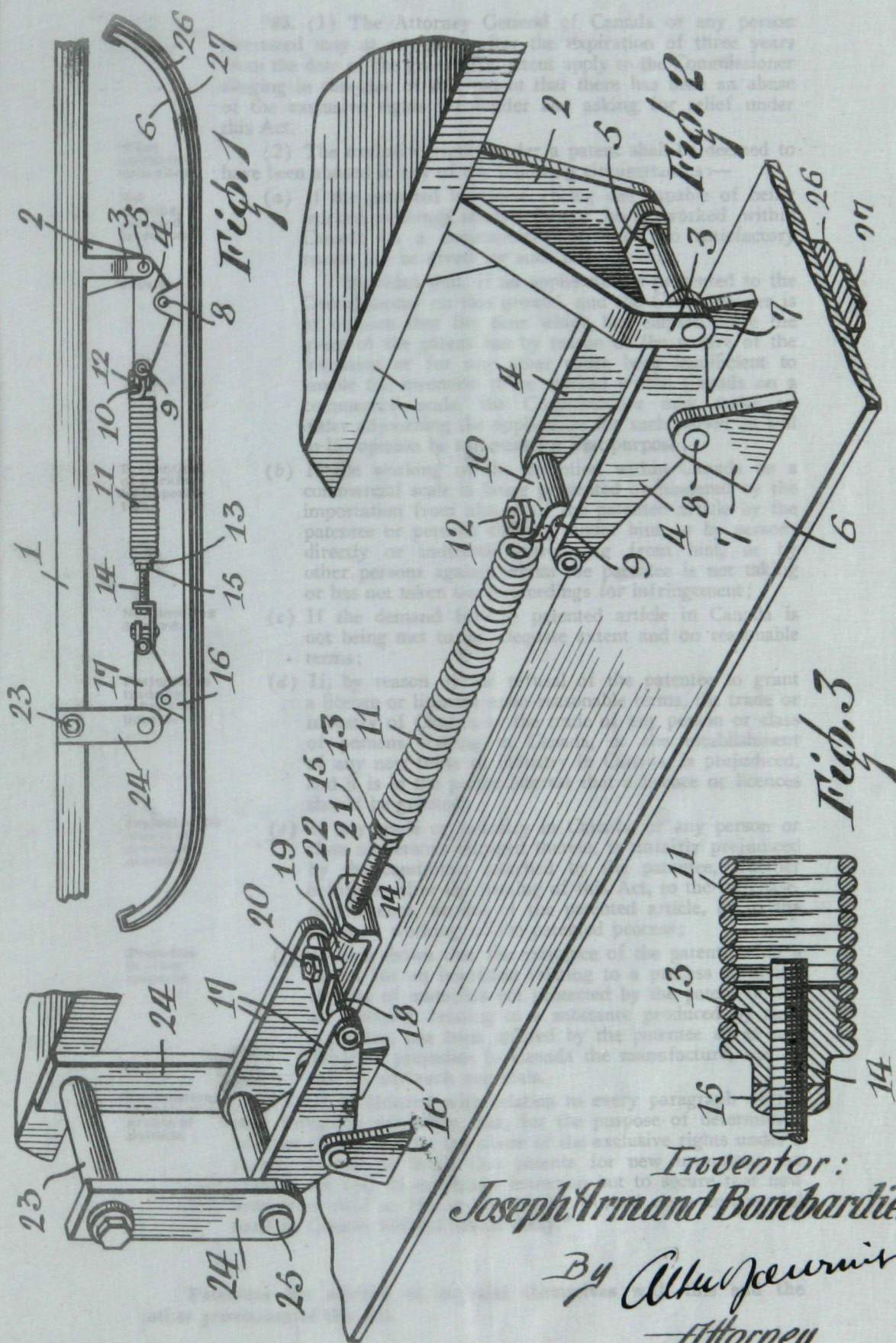
6.- In combination with a vehicle body, a runner beneath said body, a pair of transversely spaced levers pivotally mounted near each end of said runner and having an intermediate fulcrum, a pin passed through the inner ends of each pair, a spring joining said pins and lying lengthwise of said runner, a bracket suspended from said body, a shackle pivotally suspended from said body, the outer ends of said levers being pivotally attached respectively to said bracket and shackle.

signed at.....Montreal....., Que., this.....23rd.....day of.....June.....1943.

(SIGNED)

JOSEPH ARMAND BOMBARDIER

.....



Inventor:
Joseph Armand Bombardier
 By *Alfred J. J. J.*
 Attorney

Certified to be the drawings referred to
 in the specification hereunto annexed.

Signed at Montreal, QUE., this 2nd day of
 July 1943.

The attention of Patentees is called to the following section of The Patent Act, 1935.

Abuse of rights under patents.

"65. (1) The Attorney General of Canada or any person interested may at any time after the expiration of three years from the date of the grant of a patent apply to the Commissioner alleging in the case of that patent that there has been an abuse of the exclusive rights thereunder and asking for relief under this Act.

What amounts to such abuse.

(2) The exclusive rights under a patent shall be deemed to have been abused in any of the following circumstances:—

Not working, patented invention.

(a) If the patented invention (being one capable of being worked within Canada) is not being worked within Canada on a commercial scale, and no satisfactory reason can be given for such non-working:

Proviso.

Provided that, if an application is presented to the Commissioner on this ground, and the Commissioner is of opinion that the time which has elapsed since the grant of the patent has by reason of the nature of the invention or for any other cause been insufficient to enable the invention to be worked within Canada on a commercial scale, the Commissioner may make an order adjourning the application for such period as will in his opinion be sufficient for that purpose;

Prevention of working by importation.

(b) If the working of the invention within Canada on a commercial scale is being prevented or hindered by the importation from abroad of the patented article by the patentee or persons claiming under him, or by persons directly or indirectly purchasing from him, or by other persons against whom the patentee is not taking or has not taken any proceedings for infringement;

Not meeting demand.

(c) If the demand for the patented article in Canada is not being met to an adequate extent and on reasonable terms;

Prejudice to trade by refusal to licence.

(d) If, by reason of the refusal of the patentee to grant a licence or licences upon reasonable terms, the trade or industry of Canada or the trade of any person or class of persons trading in Canada, or the establishment of any new trade or industry in Canada, is prejudiced, and it is in the public interest that a licence or licences should be granted;

Prejudice by reason of conditions attached.

(e) If any trade or industry in Canada, or any person or class of persons engaged therein, is unfairly prejudiced by the conditions attached by the patentee, whether before or after the passing of this Act, to the purchase, hire, licence, or use of the patented article, or to the using or working of the patented process;

Prejudice in other respects.

(f) If it is shown that the existence of the patent, being a patent for an invention relating to a process involving the use of materials not protected by the patent or for an invention relating to a substance produced by such a process, has been utilized by the patentee so as unfairly to prejudice in Canada the manufacture, use or sale of any such materials.

Declaration of basis of grants of patents.

(3) It is declared with relation to every paragraph of the next foregoing subsection that, for the purpose of determining whether there has been any abuse of the exclusive rights under a patent, it shall be taken that patents for new inventions are granted not only to encourage invention but to secure that new inventions shall so far as possible be worked on a commercial scale in Canada without undue delay."

Patentees are advised to acquaint themselves with this and the other provisions of the Act.