Commissioner’s Decision #1510

Décision du commissaire #1510

TOPICS: O00 Obviousness

SUJETS: O00 Évidence

Application No: 2,796,795

Demande no: 2 796 795

IN THE CANADIAN PATENT OFFICE

DECISION OF THE COMMISSIONER OF PATENTS

Patent application number 2,796,795, having been rejected under subsection 30(3) of the *Patent Rules* (SOR/96-423) as they read immediately before October 30, 2019, has consequently been reviewed in accordance with paragraph 199(3)(*c*) of the *Patent Rules* (SOR/2019-251). The recommendation of the Board and the decision of the Commissioner are to withdraw the rejection and allow the application.

Agent for the Applicant

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INTRODUCTION

[1] This recommendation concerns the review of rejected Canadian patent application number 2,796,795 ("the instant application"), which is entitled "MULTI-AXLE VEHICLE SUSPENSION SYSTEM" and is owned by DEXTER AXLE COMPANY ("the Applicant"). A review of the rejected application has been conducted pursuant to paragraph 199(3)(*c*) of the *Patent Rules*. As explained in more detail below, our recommendation is that the Commissioner of Patents withdraw the rejection and allow the application.

BACKGROUND

The Application

[2] The instant application was filed in Canada on November 27, 2012 and was laid open to public inspection on June 8, 2013.

[3] The instant application relates to a multi-axle vehicle suspension system, which uses at least two torsion axles in tandem. Each pair of torsion axles is interconnected by a pivoting equalizer member that distributes any vertical movement and weight differential such that vertical movement of one axle end causes movement of the tandem axle end in the opposite vertical direction. Figure 1 of the instant application, shown below, illustrates the claimed suspension system.

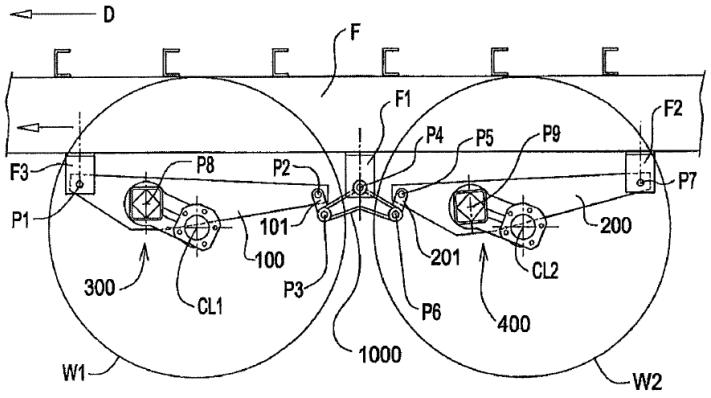

FIG.1

[4] Torsion axle assemblies 300 and 400 are mounted to suspension pivot members 100 and 200. The ends of pivot members 100 and 200 are connected to the pivoting equalizer member 1000, so that if one torsion axle is displaced upward, e.g., 300, the end of pivot member 100 will rotate the pivoting equalizer member 1000, which in turn rotates the end of the other pivot member 200, which then in turn moves the other torsion axle 400 downwards to keep the torsion axle 400 in contact with the ground.

Prosecution History

[5] On June 15, 2017, a Final Action ("FA") was written pursuant to subsection 30(4) of the *Patent Rules* as they read immediately before October 30, 2019. The FA stated that the instant application is defective on the ground that all of the claims 1-3 on file at the time of the FA ("claims on file") would have been obvious and therefore do not comply with section 28.3 of the *Patent Act*.

[6] In a December 15, 2017 response to the FA ("R-FA"), the Applicant submitted arguments in favor of the claims on file but did not propose amendments to them.

[7] As the Examiner considered the application not to comply with the *Patent Act* and *Patent Rules*, the application was forwarded to the Patent Appeal Board ("the Board") for review on January 26, 2018 along with an explanation outlined in a Summary of Reasons ("SOR"). The SOR set out the position that the claims on file were still considered to be defective due to obviousness.

[8] In a letter dated February 1, 2018, the Board forwarded to the Applicant a copy of the SOR and requested that the Applicant confirm its continued interest in having the application reviewed.

[9] In a letter dated March 13, 2018, the Applicant confirmed its interest in having the review proceed. The Applicant also indicated that they wished to provide written submissions and

to attend an oral hearing. However, given our recommendation that the rejection be withdrawn and the application allowed, no written or oral submissions are necessary.

[10] The present panel ("the Panel") was formed to review the instant application under paragraph 199(3)(*c*) of the *Patent Rules*.

ISSUE

[11] The issue to be addressed by the present review is whether:

- claims 1-3 on file would have been obvious, contrary to section 28.3 of the *Patent Act*.

LEGAL PRINCIPLES AND OFFICE PRACTICE

Claim Construction

[12] In accordance with *Free World Trust v Électro Santé Inc*, 2000 SCC 66, essential elements are identified through a purposive construction of the claims done by considering the whole of the disclosure, including the specification and drawings (see also *Whirlpool Corp v Camco Inc*, 2000 SCC 67 at paras 49(f) and (g) and 52). In accordance with the *Manual of Patent Office Practice* [*MOPOP*], §12.02 (revised June 2015), the first step of purposive claim construction is to identify the person skilled in the art and their relevant common general knowledge ("CGK"). The next step is to identify the problem addressed by the inventors and the solution put forth in the application. Essential elements can then be identified as those required to achieve the disclosed solution as claimed.

Obviousness

[13] The *Patent Act* requires that the subject-matter of a claim not be obvious to a person skilled in the art. Section 28.3 of the *Patent Act* states:

> 28.3 The subject-matter defined by a claim in an application for a patent in Canada must be subject matter that would not have been obvious on the claim date to a person skilled in the art or science to which it pertains, having regard to
>
> > (a) information disclosed more than one year before the filing date by the applicant, or by a person who obtained knowledge, directly or indirectly, from the applicant in such a manner that the information became available to the public in Canada or elsewhere; and
> > (b) information disclosed before the claim date by a person not mentioned in paragraph (a) in such a manner that the information became available to the public in Canada or elsewhere.

[14] In *Apotex Inc v Sanofi-Synthelabo Canada Inc*, 2008 SCC 61 [*Sanofi*] at paragraph 67, the Supreme Court of Canada stated that it is useful in an obviousness inquiry to use the following four-step approach:

> (1) (a) Identify the notional "person skilled in the art";
> (b) Identify the relevant common general knowledge of that person;
> (2) Identify the inventive concept of the claim in question or if that cannot readily be done, construe it;
> (3) Identify what, if any, differences exist between the matter cited as forming part of the "state of the art" and the inventive concept of the claim or the claim as construed;
> (4) Viewed without any knowledge of the alleged invention as claimed, do those differences constitute steps which would have been obvious to the person skilled in the art or do they require any degree of invention?

ANALYSIS

Claim Construction

[15] In the present case, there are no issues as to the meaning or scope of any terms in the claims on file. Therefore, the discussion below focusses on the essentiality of the elements of the claims.

The person skilled in the art

[16] In the FA at page 2, the person skilled in the art was discussed as follows:

> The specification as a whole is addressed to a person skilled in the art competent in the field of multi-axle vehicle suspension systems having manufacturing and design expertise skills. The person skilled in the art need not be an actual individual; they are a fictitious construct and can represent a team of individuals whose conjoint knowledge is relevant to the alleged inventive system.

[17] In the R-FA at pages 2-4, the Applicant contends that the identification of the skilled person in the FA does not possess the requisite level of specificity and that no evidence has been cited to support the above characterization.

[18] Generally, the exact nature of the skilled person cannot be determined with precision during prosecution before the Patent Office, since the process does not include expert testimony as to the nature of such a person, as may be the case before the Canadian Courts. The skilled person identified should be "a reasonable selection using general terms" (*Newco Tank Corp v Canada (Attorney General)*, 2014 FC 287 [*Newco Tank*] at para 29). In identifying the skilled person, "[t]here must be some generalized treatment of the question of defining a POSITA and a level of generalization applied" (*Merck & Co v Pharmascience Inc*, 2010 FC 510 [*Merck*] at para 40). One can look at the opening words of a patent and obtain reasonable guidance as to the person to whom the patent is addressed (*Merck*, *supra* at para 41).

[19] For the purpose of this review and considering the field to which the invention relates, we consider the skilled person to be a person skilled in the art of vehicle suspension systems, with experience in multi-axle vehicle suspensions. The person is most likely a mechanical or automotive engineer.

The relevant common general knowledge

[20] In the FA at page 2, the relevant CGK was set out as follows:

> The common knowledge possessed by such a person would include multi-axle vehicle suspension systems involving torsion axles mounted to suspension pivot members, which are pivotally mounted to a vehicle frame. (see "Background of the Invention" in the applicant's specification, more specifically, page 2, line 27 to page 4, line 10). Also, multi-axle vehicle suspension systems involving pivot members that connect the suspension pivot members to the vehicle frame are also considered common knowledge (see "Background of the Invention" in the applicant's specification, more specifically, page 4, lines 11-32).

[21] In the R-FA, the Applicant has disputed the identification of the relevant CGK, and contends that where the nature of the relevant CGK is in dispute, documents must be identified that support the identified CGK.

[22] However, since the background information set out in a patent application may bind an applicant as prior art, and since the relevant CGK is a subset of the prior art, general or broadly worded assertions of conventional practice found in the background information may be considered to be binding as CGK (*Corning Cable Systems LLC v Canada (Attorney General)*, 2019 FC 1065 at para 55, citing *Newco Tank* at para 40).

[23] Based on the statements made in the Background of the Invention section of the instant application at pages 1-4, we take the following points to have been part of the relevant CGK of the skilled person:

- Conventional multi-axle assemblies for trucks or trailers, including leaf spring systems where the remote ends of the leaf springs associated with each axle are supported by hanger brackets secured to a frame and the adjacent ends are pivotally linked to a pivotally mounted equalizer (*i.e.*, pivot member) also supported by hanger brackets secured to the frame;
- The problems associated with conventional multi-axle assemblies, including inadequate and abrupt load equalization from one axle to another;
- The possible end results of improper load equalization, including:
    - Loss of traction on the powered axle,
    - Higher stress and shortened service life of the suspension components,
    - Loss of capacity of the leaf springs to absorb energy and an increase in the transmission of energy to the vehicle frame, with resulting damage to the vehicle, and
    - Damage to roadways due to increased load transmission from the overloaded axle; and
- Typical construction of torsion axles, *e.g.*, a square axle in cross-section with elongated rubber members all disposed within a larger tube, as well as their advantages, such as independent reaction of each wheel to an obstacle. A well-known version being the TorFlex® system by Dexter Axle Company, which has independent and separate stub axles on each side of the vehicle and includes a wheel spindle and torsion arm (*i.e.*, suspension pivot member of the claims on file)[1], to enhance the independent aspect of the axle.

Essential Elements

[24] In the FA at page 2, after identifying the problem, the solution was set out as combining the features of multiple torsion axles with the pivot members conventionally used in multiple leaf springs systems. The FA did not explicitly set out the essential elements of

[1] See discussion of TorFlex® system at https://www.dexteraxle.com/products/torsion-axles

claims 1-3 on file, but based on the comparison with the state of the art at step 3 of *Sanofi*, the combination of elements of each claim seems to have been considered.

[25] For the purpose of our analysis of obviousness below, we also consider the combination of elements of each of the claims. Independent claim 1 is set out below:

> 1. A multi-axle vehicle suspension system comprising:
>
> a first torsion axle mounted to a first suspension pivot member, the first suspension pivot member pivotally coupled to a vehicle frame;
>
> a second torsion axle mounted to a second suspension pivot member, the second suspension pivot member pivotally coupled to the vehicle frame;
>
> a pivot member pivotally coupled to the vehicle frame;
>
> the first suspension pivot member pivotally coupled to the pivot member; and
>
> the second suspension pivot member pivotally coupled to the pivot member.

[26] The Applicant made no submissions in the R-FA with respect to the problem, solution or essential elements.

Obviousness

(1)(a) Identify the notional "person skilled in the art"

[27] The person skilled in the art has been set out above under Claim Construction at paragraph [19].

(1)(b) Identify the relevant common general knowledge of that person

[28] The relevant CGK has also been identified above under Claim Construction at paragraph [23].

(2) Identify the inventive concept of the claim in question or if that cannot readily be done, construe it

[29] As noted above, the FA considered the combination of elements of each claim as defining the essential elements in the assessment of obviousness. We proceed in the same manner below.

(3) Identify what if any differences exist between the matter cited as forming part of the "state of the art" and the inventive concept of the claim or the claim as construed

[30] In the FA, the four prior art documents listed below were applied in the obviousness analysis:

D2:	US 7,753,400 82	Dunlap et al.	July 13, 2010
D3:	US 2010/0270766 A1	VanDenberg et al.	October 28, 2010
D4:	US 6,340,165 B1	Kelderman	January 22, 2002
D5:	US 2009/0278329 A1	VanDenberg et al.	November 12, 2009

[31] The FA asserted that all of the claims on file would have been obvious having regard to D2 in view of the relevant CGK. The FA applied D3-D5 to show that torsion axles made of a torsion axle member surrounded by rubber cords, which are enclosed by an axle tube, where the torsion axle member is connected to a wheel spindle, was known at the relevant date. The FA also explained at page 3 that such features were part of the relevant CGK, pointing to the Background of the Invention portion of the instant application for support.

[32] Each of D3-D5, in the passages referred to in the FA, refers to the TorFlex® suspension system that is also referred to in the Background of the Invention section of the instant application. This well-known system, in our view, discloses torsion axles including suspension pivot members (*i.e.*, torsion arms) connected to the torsion axles, the torsion axles comprising a torsion member surrounded by a plurality of rubber cords, the torsion member and rubber cords being contained within the outer torsion axle. Wheel spindles are mounted to the suspension pivot members.

[33] D2 discloses a multi-axle leaf spring suspension system having a compliant equalizer (pivot member in the claims). The disclosed system is similar to the conventional multi-

axle leaf spring assemblies disclosed as background information in the instant application, except that the equalizer in D2 is itself compliant, comprising arm portions 10 and 20 that may independently rotate (see Figure 2 and discussion at col. 2, line 58 to col. 3, line 17). However, D2 also discloses as prior art the conventional system referred to in the instant application with a rigid frame pivot member used in a tandem multi-axle leaf spring system (see Figures 1 and 5 of D2).

[34] In view of the above, considering independent claim 1 on file, what the prior art and CGK do not show is a multi-axle vehicle suspension system using an equalizer (*i.e.*, pivot member), where the conventional leaf spring system has been replaced by torsion axles, such as those of the TorFlex® system. This is consistent with the difference identified in the FA.

(4) Viewed without any knowledge of the alleged invention as claimed, do those differences constitute steps which would have been obvious to the person skilled in the art or do they require any degree of invention?

[35] In the FA at page 3, it was contended that substituting torsions axles for leaf springs in the conventional multi-axle suspension system that used an equalizing pivot member would have been obvious:

> The alleged inventive combination, which unites a center pivot member with torsion axles, is a mere collocation of elements which do not cooperate to produce a unitary result. The function of the center pivot member does not contribute to the function of the torsion axles, and vice versa; the combined suspension does not produce any unexpected results other than individual results. In order to make the wheels of the suspension system disclosed in D2, react independently of each other, it is held that it would have been obvious to a person skilled in the art to use a torsion axle, as is known in the art, for the wheel axles in the suspension system of D2 in order to form a system as claimed in the claims on file.

[36] Having considered the prior art and the relevant CGK we do not agree that substituting torsion axles for leaf springs in such a system would have been obvious to the skilled person.

[37] We do not agree with the FA's contention that the torsion axles fail to cooperate with the center pivot member to produce a unitary result. In our view, the interconnection of the tandem torsion axles with the center pivot member itself implies cooperation to produce an effect that is more than those of the individual elements. Further, in our view, there is no reason to believe that the torsion axles fail to produce a different effect when interconnected by a center pivot member, in comparison to the conventional multi-axle system that uses leaf springs connected by the same center pivot member.

[38] Further, we can find no suggestion or motivation in the cited prior art or the relevant CGK to substitute torsion axles for leaf springs in the conventional multi-axle leaf spring system using a center pivot member. As discussed above, D2 discloses the conventional multi-axle leaf spring system with an equalizer and makes no suggestion to substitute torsion axles for the leaf springs, while D3-D5 discuss well-known torsion axle systems. As discussed in the instant application and in D3-D5, torsion axles are popular due to the independent nature of the wheel reaction to obstacles, and so linking one torsion axle with another in a tandem arrangement via a pivot member would, in our view, seem counterintuitive to the person skilled in the art based on the evidence of record. Further, the evidence of record does not indicate any shift in the practice of using torsion axles independently or of using pivot members to link only leaf spring assemblies.

[39] We would agree that once the idea of using torsion axles instead of leaf springs in such a system has been conceived, there would be no difficulty in implementing it. The connection of the torsion bar systems to the center pivot member is much the same as that of the leaf spring version (see *e.g.*, Figure 1 of the instant application and Figure 5 of D2).

[40] However, "the inventive ingenuity necessary to support a valid patent may be found in the underlying idea, or in the practical application of that idea, or in both. It may happen that the idea or conception is a meritorious one, but that once suggested, its application is very simple" (*Canadian Gypsum Co v Gypsum, Lime & Alabastine Canada Ltd*, [1931] Ex CR 180 at 187; see also *Shell Oil Co v Commissioner of Patents* (1982), 67 CPR (2d) 1 (SCC)

at 12-13). In the present case, we can find no suggestion or motivation in the cited prior art or relevant CGK that would lead the person skilled in the art to the concept of substituting torsion axles for leaf springs in a multi-axle suspension system in which the axles are interconnected by a center pivot member.

[41] Therefore, in our view, independent claim 1 on file would not have been obvious and is therefore compliant with section 28.3 of the *Patent Act*.

[42] It follows that dependent claims 2 and 3, which depend from claim 1, would also not have been obvious and are therefore compliant with section 28.3 of the *Patent Act*.

CONCLUSIONS

[43] We have determined that claims 1-3 on file would not have been obvious and are therefore compliant with section 28.3 of the *Patent Act*.

RECOMMENDATION OF THE BOARD

[44] For the reasons set out above, we are of the view that the rejection is not justified on the basis of the defect indicated in the Final Action notice and we have reasonable grounds to believe that the instant application complies with the *Patent Act* and the *Patent Rules*. We recommend that the Applicant be notified in accordance with subsection 86(10) of the *Patent Rules* that the rejection of the instant application is withdrawn and that the instant application has been found allowable.

Stephen MacNeil	Paul Fitzner	Andrew Strong
Member	Member	Member

DECISION

[45] I concur with the conclusions and recommendation of the Board. In accordance with subsection 86(10) of the *Patent Rules*, I hereby notify the Applicant that the rejection of the instant application is withdrawn, the instant application has been found allowable and I will direct my officials to issue a Notice of Allowance in due course.

Johanne Bélisle
Commissioner of Patents

Dated at Gatineau, Quebec,
this 27th day of December, 2019.