

Commissioner's Decision #1467

Décision du commissaire #1467

TOPICS: A11 New Matter
 B00 Ambiguity or Indefiniteness (incomplete)
 C00 Adequacy or Deficiency of Description
 O00 Obviousness

SUJETS: A11 Nouvelle matière
 B00 Caractère ambigu ou indéfini (incomplet)
 C00 Caractère adéquat ou inadéquat de la description
 O00 Évidence

Application No: 2,604,346

Demande no: 2 604 346

IN THE CANADIAN PATENT OFFICE

DECISION OF THE COMMISSIONER OF PATENTS

Patent application number 2,604,346, having been rejected under subsection 30(3) of the *Patent Rules* (SOR/96-423), has consequently been reviewed in accordance with paragraph 30(6)(c) of the *Patent Rules*. The recommendation of the Board and the decision of the Commissioner are to refuse the application.

Applicant

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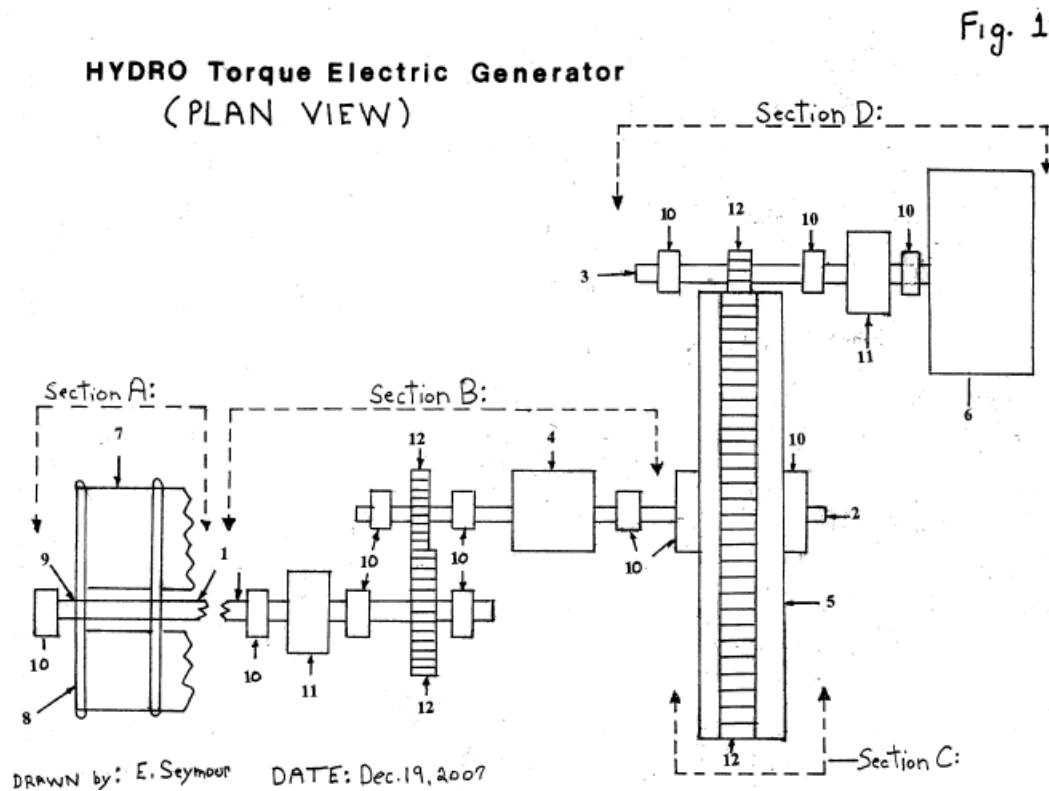
INTRODUCTION

- [1] This recommendation concerns the review of rejected Canadian patent application number 2,604,346 (“the instant application”), which is entitled “HYDRO TORQUE ELECTRIC GENERATOR” and is owned by EUGENE GEORGE SEYMOUR (“the Applicant”). A review of the rejected application has been conducted by the Patent Appeal Board (“the Board”) pursuant to paragraph 30(6)(c) of the *Patent Rules*. As explained in more detail below, our recommendation is that the Commissioner of Patents refuse the application.

BACKGROUND

The Application

- [2] The instant application was filed in Canada on September 6, 2007 and was laid open to public inspection on March 6, 2009.
- [3] The instant application relates to an apparatus for generating electricity from a flow of water that uses a paddle wheel to turn a combination of shafts connected by gears, a clutch and a transmission. The apparatus also includes a large flywheel and an electric generator to convert the rotational energy input by the flow of water to electric energy. Figure 1 of the instant application, reproduced below, illustrates the arrangement of components that form the Hydro Torque Electric Generator. We note that though Figure 1 indicates a date of December 19, 2007, it was submitted to the Patent Office on March 9, 2009:



- | | |
|-------------------------|--|
| 1- Power Drive Shaft | 7- Paddles |
| 2- Flywheel Shaft | 8- Paddle arms |
| 3- Power Take off Shaft | 9- *not identified in the application* |
| 4- Transmission | 10- Support Bearings |
| 5- Flywheel | 11- Clutch |
| 6- Electric Generator | 12- Perimeter gears |

Prosecution History

[4] On December 14, 2015, a Final Action (FA) was written pursuant to subsection 30(4) of the *Patent Rules*. The FA stated that the instant application is defective on the grounds that:

- The application contains matter not reasonably to be inferred from the specification or drawings as originally filed and is therefore non-compliant with section 38.2 of the *Patent Act*;
- The claims are indefinite as they are not drafted in the proper format and are therefore non-compliant with subsection 27(4) of the *Patent Act*;

- The description is not drafted in the proper format and is therefore non-compliant with section 80 of the *Patent Rules*; and
- The claims on file at the time of the FA would have been obvious and are therefore non-compliant with section 28.3 of the *Patent Act*.

- [5] In a January 15, 2016 response to the FA (RFA), the Applicant submitted arguments in favor of the patentability of the claims. The Applicant also alleged that he had been treated unequally during the prosecution of his patent application because of the non-receipt of an office notice and the late identification of a new matter defect, referencing section 15 of the *Canadian Charter of Rights and Freedoms*. This position was maintained during the review by the Board and is addressed later in our analysis. No amendments to the application were proposed.
- [6] As the Examiner considered the application not to comply with the *Patent Act* and *Patent Rules*, pursuant to paragraph 30(6)(c) of the *Patent Rules*, the application was forwarded to the Board for review on August 12, 2016 along with an explanation outlined in a Summary of Reasons (SOR). The SOR set out the position that the application was still defective on the grounds set out in the FA.
- [7] In a letter dated August 17, 2016, the Board forwarded to the Applicant a copy of the SOR and offered the Applicant an opportunity to make further submissions and/or attend an oral hearing.
- [8] In a response to the SOR dated October 4, 2016, the Applicant provided further written submissions in support of the patentability of the application. Again, no amendments were proposed.
- [9] The present panel (the Panel) was formed to review the instant application under paragraph 30(6)(c) of the *Patent Rules*.

- [10] In a preliminary review letter (PR letter) dated June 13, 2018, the Panel set out its preliminary analysis of the issues with respect to the claims on file.
- [11] The Applicant provided written submissions in response to the PR letter on July 3, 2018 and July 24, 2018. The submissions of July 3, 2018 are subsumed within the submissions of July 24, 2018 and so we refer to the latter as the response to the PR letter (RPR). As part of these submissions, the Applicant maintained the allegation of unequal treatment, additionally contending that it resulted in the failure of the Panel to recognize his equivalent US Patent no. 8,678,744 as “Prior Art.” This allegation is also addressed in our later analysis. These submissions also contained no proposed amendments to the application.
- [12] An oral hearing was held on August 9, 2018.

ISSUES

- [13] The substantive issues to be addressed by the present review are whether:
- The application contains matter not reasonably to be inferred from the specification or drawings as originally filed and is therefore non-compliant with section 38.2 of the *Patent Act*;
 - The claims are indefinite as they are not drafted in the proper format and are therefore non-compliant with subsection 27(4) of the *Patent Act*;
 - The description is not drafted in the proper format and is therefore non-compliant with section 80 of the *Patent Rules*; and
 - The claims on file would have been obvious and are therefore non-compliant with section 28.3 of the *Patent Act*.
- [14] Before addressing the issues above and addressing the construction of the claims, the Applicant has raised concerns regarding unequal treatment during the prosecution of the application, which we address below.

Concerns regarding unequal treatment

- [15] In the PR letter, we stated the following with respect to the Applicant's allegation of unequal treatment during the prosecution of the instant application:

In the R-FA as well as in the written communication dated October 4, 2016, the Applicant contends that he has been treated in an unequal manner and points to an alleged non-receipt of an office notice and the identification of the defect relating to new matter by the Examiner in a May 20, 2015 office action as evidence of unequal treatment and bias.

Having reviewed the record, we see no evidence of unequal treatment or bias. The above noted office notice request for a correction of page numbering appears to have resulted from the Applicant's proposed amendments of January 14, 2014 and was corrected in a timely manner. Further, while it is desirable for defects such as that of new matter to be identified at the point in time when problematic amendments are proposed, such defects may be identified at any point in the prosecution of an application. Before a patent can be granted all of the requirements of patentability as stated in the *Patent Act* and *Patent Rules* must be met.

Regardless of the above, our role is to consider the application of the requirements of patentability as stated in the *Patent Act*, *Patent Rules* and the case law. Issues such as those above are not material to the question of patentability.

- [16] During the oral hearing and in the RPR, the Applicant also contended that he was treated unequally by the failure of the Panel to recognize his equivalent US Patent no. 8,678,744 as "Prior Art." The Applicant did accept that the grant of a US Patent is not automatically determinative of the patentability of a corresponding Canadian patent application. However, the Applicant submitted that if the US Patent was considered, it would overcome the obviousness defect.

- [17] As the Panel noted at the hearing, documents that are normally considered to be "Prior Art" are those that would call into question the validity of the claims under the requirements of novelty and non-obviousness. They are documents that would have been disclosed to the public before the applicable claim date (for those that originate from third parties) or that would have been disclosed to the public by an applicant more than one year

before the Canadian filing date, such that they are applicable under either section 28.2 or 28.3 of the *Patent Act*. The Applicant's equivalent US Patent, while informative and having been reviewed by the Panel, is considered to be neither "Prior Art", nor, as the Applicant has acknowledged, determinative of the outcome of the present review, as the date of publication of the US Patent (January 13, 2011) is after the Canadian filing date (September 6, 2007) of the instant application and therefore cannot be considered to be prior art.

[18] In our view, the instant application has been examined in accordance with the *Patent Act*, *Patent Rules* and Office Practice. Our review of the file does not identify any irregularity in the prosecution.

LEGAL PRINCIPLES AND OFFICE PRACTICE

Claim Construction

[19] 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*, §13.05 (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.

New Matter

[20] Section 38.2 of the *Patent Act* sets forth the conditions under which amendments may be made to the specification or drawings of a patent application:

38.2 (1) Subject to subsections (2) and (3) and the regulations, the specification and any drawings furnished as part of an application for a patent in Canada may be amended before the patent is issued.

Restriction on amendments to specifications

(2) The specification may not be amended to describe matter not reasonably to be inferred from the specification or drawings as originally filed, except in so far as it is admitted in the specification that the matter is prior art with respect to the application.

Restriction on amendments to drawings

(3) Drawings may not be amended to add matter not reasonably to be inferred from the specification or drawings as originally filed, except in so far as it is admitted in the specification that the matter is prior art with respect to the application.

[21] The question as to whether matter added to the specification or drawings by amendment complies with section 38.2 of the *Patent Act* is considered from the point of view of the skilled person.

[22] The assessment as to the presence of new matter therefore requires a comparison of the pending specification with the originally filed specification and drawings and a determination as to whether the subject-matter of the amendments is that which would have been reasonably inferred from the original specification or drawings by the skilled person.

Claim Format (Clarity)

[23] Subsection 27(4) of the *Patent Act* requires claims to distinctly and explicitly define subject-matter:

The specification must end with a claim or claims defining distinctly and in explicit terms the subject-matter of the invention for which an exclusive privilege or property is claimed.

[24] In *Minerals Separation North American Corp v Noranda Mines Ltd*, [1947] Ex. C.R. 306, 12 C.P.R. 99 at 146, the Court emphasized both the obligation of an applicant to make

clear in the claims the ambit of the monopoly sought and the requirement that the terms used in the claims be clear and precise:

By his claims the inventor puts fences around the fields of his monopoly and warns the public against trespassing on his property. His fences must be clearly placed in order to give the necessary warning and he must not fence in any property that is not his own. The terms of a claim must be free from avoidable ambiguity or obscurity and must not be flexible; they must be clear and precise so that the public will be able to know not only where it must not trespass but also where it may safely go.

Description Format

[25] Section 80 of the *Patent Rules* sets out the manner in which the description portion of a patent application should be presented:

80 (1) The description shall

- (a) state the title of the invention, which shall be short and precise and shall not include a trade-mark, coined word or personal name;
- (b) specify the technical field to which the invention relates;
- (c) describe the background art that, as far as is known to the applicant, can be regarded as important for the understanding, searching and examination of the invention;
- (d) describe the invention in terms that allow the understanding of the technical problem, even if not expressly stated as such, and its solution;
- (e) briefly describe the figures in the drawings, if any;
- (f) set forth at least one mode contemplated by the inventor for carrying out the invention in terms of examples, where appropriate, and with reference to the drawings, if any; and
- (g) contain a sequence listing where required by subsection 111(1).

(2) The description shall be presented in the manner and order specified in subsection (1) unless, because of the nature of the invention, a different manner or a different order would afford a better understanding or a more economical presentation.

Obviousness

[26] 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.

[27] In *Apotex Inc v Sanofi-Synthelabo Canada Inc*, 2008 SCC 61 at paragraph 67 [*Sanofi*], 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

The person skilled in the art

[28] In the PR letter, the person skilled in the art was characterized as “a team comprising a mechanical engineer and an electrical engineer.”

[29] The above characterization was not disputed by the Applicant in the RPR or at the hearing. We apply it in our analysis below.

The relevant common general knowledge

[30] In the PR letter, the relevant CGK, as taken from the FA, was set out as including knowledge of:

basic mechanical components such as clutches, gear trains, shafts and flywheel. The POSITA would also know about how to assemble those different components in a machine. In addition, the POSITA would know how to apply this knowledge for hydroelectric production, and would also be [an] expert in the different methods to obtain electricity from a stream of water.

[31] In the PR letter, we also added information from the “HISTORY OF INVENTION” section of the instant application that was taken to have been part of the relevant CGK. This included knowledge of:

- conventional methods of using water as a source of hydroelectric power;
- conventional methods of power generation from nuclear and fossil fuel sources;
- conventional methods of power generation from solar, wind, and hydrokinetic devices using natural water current flow and ocean wave action; and

- conventional methods of power generation from the use of submersible turbines mounted on the bottom of a body of water.

[32] The Applicant did not dispute any of the points above in the RPR or at the hearing and we consider them in our analysis below.

[33] In the PR letter, we stated the following with respect to the meaning of terms in the claims on file and the determination of essential elements:

In the present case, there are no issues on the record of any debate as to the meaning of any terms in the claims, nor does the Panel see any issues in that regard. There is also no analysis as to which claimed features are essential and which are not, if any.

As will be seen in our analysis below under obviousness, having taken into account all the features of the claims on file, it is our preliminary view that the claims would have been obvious. Therefore in this case, we see no need for a determination of which features of the claims are essential versus non-essential.

[34] The above views as to claim construction were also not disputed by the Applicant and have been applied in our analysis.

New Matter

[35] In the PR letter, after reviewing the amendments to the abstract, description, claims and drawings during the prosecution of the instant application, it was our preliminary view that:

the introduction of the heavy weights on the side of the flywheel in the description and drawings, the introduction of the idea of simultaneous amplification of torque and velocity in the description and the introduction of a specific amount by which the paddles protrude into the water in the description constitute unacceptable new matter not reasonably to be inferred from the original specification or drawings, contrary to section 38.2 of the *Patent Act* and must be removed.

- [36] In the RPR and at the hearing, the Applicant contended that there had been no changes to the drawings during the prosecution of the instant application and that the wording used in the specification had been arrived at during the prosecution of the corresponding US Patent. As such, the Applicant considered the instant application to be compliant with section 38.2 of the *Patent Act*.
- [37] However, the content of both the drawings and the rest of the specification were substantially altered during the prosecution of the instant application. For example, the original specification dated September 6, 2007 consisted of four points of two or three lines each that discussed the basic components of the system with little or no detail and no discussion of the accompanying drawings. The original application also contained only one drawing that lacked any indication of weights to be attached to the flywheel.
- [38] In contrast, the currently pending specification consists of nine pages of text and the drawings now consist of Figures 1 to 7, showing various views of the components and details that were not present in the original drawings. With respect to the corresponding US Patent, we note that the content of the application that was originally filed in the US was significantly different than that originally filed in Canada (as contained in the Image File Wrapper that may be accessed via the US Public PAIR online file docket).
- [39] In light of the above, it is our view that the introduction of the heavy weights on the side of the flywheel in the description and drawings, the introduction of the idea of simultaneous amplification of torque and velocity in the description and the introduction of a specific amount by which the paddles protrude into the water in the description constitute unacceptable new matter not reasonably to be inferred from the original specification or drawings, contrary to section 38.2 of the *Patent Act*. While this defect could be remedied by amendment, in light of our conclusion below as to the obviousness of the claims, the requirement for such an amendment is moot.

Claim Format (Clarity)

[40] In the PR letter, we indicated that it was our preliminary view that the claims were clear in their present form and therefore not indefinite:

The FA at pages 8-9 indicated that the claims were indefinite and non-compliant with subsection 27(4) of the *Patent Act* because they were not drafted following a specific format.

Upon review of the claims on file, it is our preliminary view that they are not indefinite. The claims on file, which consist of independent apparatus claim 1 and a dependent claim relating to a method of installation of the apparatus of claim 1, set out the claimed features in a sufficiently distinct and explicit manner such that a member of the public would know whether they would infringe them or not. The claims do use a format including a preamble or introductory phrase, a transitional phrase and a claim body, as set out in the FA. We also note that although the specific cooperation of the elements of the claims is not explicitly set out, in our preliminary view, their cooperation would be evident to the person skilled in the art based on the configuration of connected components and the person's CGK relating to basic mechanical components and how they interact with each other.

[41] The Applicant made no submissions in the RPR or during the hearing in relation to the above view. We conclude that the claims are not indefinite and are therefore compliant with subsection 27(4) of the *Patent Act*.

Description Format

[42] In the PR letter, we set out our preliminary view that the format of the description of the instant application was non-compliant with section 80 of the *Patent Rules*:

In our preliminary view, the description now on file is non-compliant with section 80 of the Patent Rules. Although in our view the elements set out in the *Patent Rules* are present, the order set out therein has not been followed since the description of the drawings is placed at the end of the description. According to subsection 80(2) of the *Patent Rules*:

(2) The description shall be presented in the manner and order specified in subsection (1) unless, because of the nature of the invention, a different

manner or a different order would afford a better understanding or a more economical presentation.

In the present case, there is nothing of record to indicate why in this case a different order is appropriate. We note however that this defect is easily remedied by relocating the section “Description of Drawings.”

[43] The Applicant made no submission in the RPR or at the hearing in relation to the above view. We conclude that the description of the instant application is not set out in the proper format and is therefore non-compliant with section 80 of the *Patent Rules*. As noted in the PR letter, this defect may be easily remedied by amendment, but given our conclusions below in relation to the obviousness of the claims on file, the requirement for such an amendment is moot.

Obviousness

(1)(a) Identify the notional “person skilled in the art”

[44] The person skilled in the art has been set out above under Claim Construction at paragraph [28].

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

[45] The relevant CGK has also been identified above under Claim Construction at paragraphs [30]-[31].

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

[46] The instant application contains two claims 1 and 3 on file, claim 3 being dependent on claim 1 (there being no claim 2 per se). The two claims on file are set out below:

1. A hydro torque electric generator comprising: a power drive shaft comprising an outer end that protrudes into a water flow, a plurality of paddles mounter on the outer end of the power drive shaft, clutch disconnection point in

the middle of the power drive shaft, and a gear wheel mounted on an inner end of the power drive shaft;

a flywheel shaft comprising an inner end, middle and an outer end, said outer end having a gear connecting the gear on the inner end of the power drive shaft, a transmission disconnect point in the middle of the flywheel shaft, and a flywheel mounted in the inner end of the flywheel shaft, said flywheel comprising gears mounted on the periphery of the flywheel;

and a power take off shaft comprising an outer end, a middle and an inner end, a gear mount on said outer end and interconnected with the gears of the flywheel, a clutch disconnect point in the middle of the power take off shaft, and a electrical generator mounted on the inner end of the power take off shaft.

Dependent Claim

3. (new) A method of installation of the hydro torque electric generator of claim 1 comprising the steps of:

the outer end of the power drive shaft mounted over a water flow to be lowered into a position with paddles protruding into the water at the surface causing a rotation of the outer end of the power drive shaft;

the outer end of the power drive shaft is engaged in the water current flow, with a first clutch, wherein the rotational motion is transferred to the inner end of the shaft which is inter connected to the outer end of the flywheel shaft by the gears;

and wherein the rotational motion of the outer end of the flywheel shaft is incrementally transferred to the inner end with the utilization of a transmission turning the flywheel which is inter connected with perimeter gears to a gear on the outer end of the power take off shaft;

and wherein the rotational motion of the outer end of the power take off shaft is transferred to the inner end of the shaft with the utilization of a second clutch into an electric generator.

[47] In the PR letter, we stated that we had taken into account all of the elements and steps of the claims on file in our obviousness assessment:

In the FA at page 4, the inventive concept of the claims on file was characterized as:

the combination, on a gear train between a paddle wheel and an electric generator, of three shafts, two clutches, and a flywheel with perimeter teeth so that the flywheel is also used as a gear. Clutches on two of the shafts allows sequential engagement of the different components of the system to amplify the generation of electricity by the generator. The flywheel and the sequential start allow the transmission to the electric generator of both a high torque and a high speed.

Given our preliminary view above as to the impermissible addition of new matter relating to the amplification of torque and rotational velocity, such features cannot form part of the inventive concept and are not taken into

account below in steps (3) or (4). Further, while claim 1 on file relates to the hydro torque electric generator, claim 3 on file (claim 2 is absent) refers to the sequential engagement of the components of the apparatus.

We have taken into account the combination of elements of claim 1 on file and all the steps of the method of claim 3 on file during the assessment under steps (3) and (4) of Sanofi below.

[48] The Applicant made no submissions in relation to the above in the RPR or at the hearing.
We consider all the claimed elements and steps 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

[49] In the PR letter, we set out our preliminary view that the differences between the state of the art and the two claims on file were the same for both claims:

The FA cited three prior art documents in support of the position that the claims on file and the subject-matter of the application as a whole would have been obvious:

D1: JP8109865	Wakashiba	Published: April 30, 1996
D2: CN2753894	Cheng	Published: January 25, 2006
D3: WO9906735	Matsuoka et al.	Published: February 11, 1999

The Panel has retrieved an additional prior art document that it considers to be pertinent to the assessment of obviousness of the claims on file and in accordance with subsection 30(6.1) of the *Patent Rules* now gives the Applicant notice of the document and its applicability in relation to the defect of obviousness:

D4: US5136174	Simoni	Published: August 4, 1992
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Our assessment below focuses on the pertinence of prior art document D4.

D4 discloses an electricity generating device that uses one or more groups of water-driven paddle wheels 31 placed side-by-side in a canal. Each group of paddle wheels is coupled together by a belt and each group is coupled to and drives control pulleys 70A and 70B by the belt. Control assembly pulleys 70A and 70B are connected to flywheel 71A and pulley 72, respectively, by centrifugal clutches. Flywheel 71A and pulley 72 are mounted on the same shaft 67. As the speed of the control assembly pulleys 70A and 70B increases, the centrifugal clutch drives the flywheel 71A and pulley 72. Pulley 72 then drives a power-take-off shaft 88 via a belt 90. A centrifugal clutch 92 is mounted on

power-take-off shaft 88 and shaft 91, which is directly connected to a generator 82. It is also disclosed that the connection between the shaft 91 and generator 82 can be indirect to provide a transmission type function, so as to allow for adjustment of generator speed (D4 at col. 6, lines 15-19). The system of D4 uses bearings at various positions to support the various drive shafts (e.g., bearings 37 and 69A-D).

In our preliminary view, the state of the art is represented by prior art document D4. Further, in our preliminary view, the differences between claim 1 on file and D4 are:

- In D4, multiple paddlewheels are provided for use in a slow moving canal environment, whereas in the instant application one paddlewheel may be used;
- In D4, the arrangement of clutches and transmission is different, with the clutches in D4 being on the flywheel shaft and power-take-off shaft and the optional transmission being on the power-take-off-shaft as well, whereas in claim 1 on file, the clutches are on the power drive shaft and power-take-off shaft, with the transmission being on the flywheel shaft; and
- In D4, the flywheel is driven by a belt-driven pulley connected to the flywheel via a centrifugal clutch, whereas in claim 1 on file, the flywheel has peripheral gear teeth, itself functioning as a gear driving the power-take-off shaft.

With respect to claim 3 on file, given our view above as to the particular method of engagement and that it would result from and thus be inherent in the particular arrangement of the claimed apparatus, it is also our preliminary view that the differences between the state of the art as represented by D4 and claim 3 on file, are the same as those of claim 1 on file.

[50] The Applicant did not dispute the above differences in the RPR or at the hearing.

[51] However, in the RPR and at the hearing, the Applicant highlighted firstly as a difference the idea that significant studies and design effort are required in implementing the apparatus and method of installation claimed, all of which would not have been obvious to the person skilled in the art. Secondly, the Applicant contended that the position of the flywheel being downstream of the transmission, in relation to the paddle wheel, was a non-obvious difference. Lastly, at the hearing the Applicant contended that in excessive load conditions due to the volume of water flowing past the paddlewheel, the paddles could be made to shear off and thereby reduce the input to the apparatus. We will consider these differences as well at step 4.

(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?

[52] In the PR letter, with respect to the differences identified by the Panel in the PR letter, we expressed our preliminary view that these differences would have been obvious to the person skilled in the art:

In our preliminary view, the differences identified above would have been obvious having regard to prior art document D4 and the relevant CGK.

With respect to the use of one paddlewheel as opposed to multiple paddlewheels, in D4 multiple paddlewheels are used to extract more energy from the slow moving water in canals. In our view, the person skilled in the art would have, based on the relevant CGK, adapted the size and/or number of paddlewheels to provide for the most advantageous configuration given and available source of energy from a flowing water source.

With respect to the particular arrangement of clutches and transmission in D4 and the claims on file, in our view the differences would have represented obvious variations that would have depended on the preferences of the person skilled in the art. Both arrangements provide for the gradual start-up of the devices with the generator being engaged once the respective flywheels have been brought up to speed.

With respect to the claimed flywheel having gear teeth on its periphery as opposed to it being driven by a belt arrangement, as in D4, both represent well-known methods of driving a body on a rotatable shaft. In our view the person skilled in the art would have chosen to use one or the other based on well-known design considerations. The description portion of the instant application provides no particular advantages for choosing to use the flywheel itself as a gear in the system.

Given that in our preliminary view the apparatus of claim 1 on file would have been obvious, it is also our preliminary view that the method of installation and engagement of claim 3 on file would have been obvious. Such subject-matter would have been obvious to the person skilled in the art given the obvious arrangement of shafts, clutches and transmission of claim 1 on file.

[53] With respect to the first difference highlighted by the Applicant in the RPR and at the hearing, there is no suggestion in the application that non-obvious significant studies and design effort were required to implement the apparatus and method of installation claimed.

In fact, if this were the case, in our view the application would be defective as being insufficient and therefore non-compliant with subsection 27(3) of the *Patent Act*. In our view, given the lack of detail in the application with regard to the specific parameters of the apparatus for a particular operating environment, any adaptations required for implementation have been left to the person skilled in the art, equipped with the relevant CGK, to resolve and would therefore not require inventive ingenuity.

[54] With respect to the second difference highlighted by the Applicant, namely the particular position of the transmission in relation to the flywheel, the description of the instant application at page 7 indicates that the transmission is utilized to gradually transfer the rotational energy present on the flywheel shaft 2 to the flywheel 5. D4 discusses the inclusion of a transmission type element in the form of a variable V-belt drive and while it is positioned between the flywheel 71A and generator 82, rather than upstream of the flywheel, as in claim 1 on file, the transmission still serves the same function of regulating the rotational speed of the overall system and ultimately the generator output. In our view, the person skilled in the art would see no unobvious advantages to rearranging the position of the transmission in the apparatus.

[55] Lastly, the idea that the paddles could be formed to shear off under excessive loading does not appear in the application and is not inferable from it. Therefore this point cannot be taken into account in the assessment of the obviousness of the claims.

Conclusion on Obviousness of Claims on File

[56] Having considered the record before us, including the Applicant's submissions in the RPR and at the hearing, we conclude that the claims on file would have been obvious and therefore non-compliant with section 28.3 of the *Patent Act*.

CONCLUSIONS

[57] We have determined that:

- the introduction of the heavy weights on the side of the flywheel in the description and drawings, the introduction of the idea of simultaneous amplification of torque and velocity in the description and the introduction of a specific amount by which the paddles protrude into the water in the description constitute unacceptable new matter not reasonably to be inferred from the original specification or drawings, contrary to section 38.2 of the *Patent Act* and must be removed;
- the claims on file are not indefinite and are compliant with subsection 27(4) of the *Patent Act*;
- the description of the instant application is not set out in the proper format and is therefore non-compliant with section 80 of the *Patent Rules*; and
- the claims on file would have been obvious and are therefore non-compliant with section 28.3 of the *Patent Act*.

RECOMMENDATION OF THE BOARD

[58] In view of the above, the Panel recommends that the application be refused on the grounds that:

- the introduction of the heavy weights on the side of the flywheel in the description and drawings, the introduction of the idea of simultaneous amplification of torque and velocity in the description and the introduction of a specific amount by which the paddles protrude into the water in the description constitute unacceptable new matter not reasonably to be inferred from the original specification or drawings, contrary to section 38.2 of the *Patent Act* and must be removed;
- the description of the instant application is not set out in the proper format and is therefore non-compliant with section 80 of the *Patent Rules*; and

- the claims on file would have been obvious and are therefore non-compliant with section 28.3 of the *Patent Act*.

Stephen MacNeil
Member

Leigh Matheson
Member

Andrew Strong
Member

DECISION

[59] I concur with the conclusions and recommendation of the Board that the application be refused on the grounds that:

- the introduction of the heavy weights on the side of the flywheel in the description and drawings, the introduction of the idea of simultaneous amplification of torque and velocity in the description and the introduction of a specific amount by which the paddles protrude into the water in the description constitute unacceptable new matter not reasonably to be inferred from the original specification or drawings, contrary to section 38.2 of the *Patent Act* and must be removed;
- the description of the instant application is not set out in the proper format and is therefore non-compliant with section 80 of the *Patent Rules*; and
- the claims on file would have been obvious and are therefore non-compliant with section 28.3 of the *Patent Act*.

[60] Therefore, in accordance with section 40 of the *Patent Act*, I refuse to grant a patent on this application. Under section 41 of the *Patent Act*, the Applicant has six months within which to appeal my decision to the Federal Court of Canada.

Johanne Bélisle
Commissioner of Patents

Dated at Gatineau, Quebec,
this 10th day of December , 2018