

COMMISSIONER'S DECISION

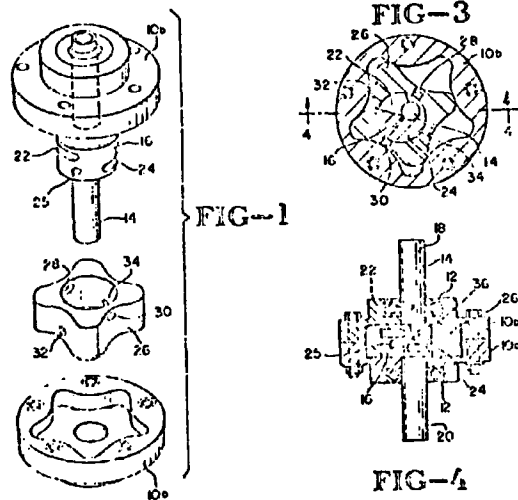
OBVIOUSNESS: Rotary Engine

Similar rotary mechanism is shown in the prior art. Claims containing the applicant's theoretical operation formula are refused.

Final Action: Affirmed.

This decision deals with a request for review by the Commissioner of Patents of the Examiner's Final Action dated July 7, 1976, on application 076,324 (Class 171-88). The application was filed on March 3, 1970, in the name of Joe W. Tyree, and is entitled "Rotary Engine With Internal Or External Pressure Cycle."

This application relates to a rotary mechanism capable of operating as a combination engine, fluid pump or fluid motor. Figures 1, 3 and 4, shown below, illustrate the applicant's arrangement.



In the Final Action the examiner rejected claims 1 to 7, 10 to 12 and 14 to 17. These claims were rejected for not being directed to an operative machine, and for not patentably distinguishing over the following patents:

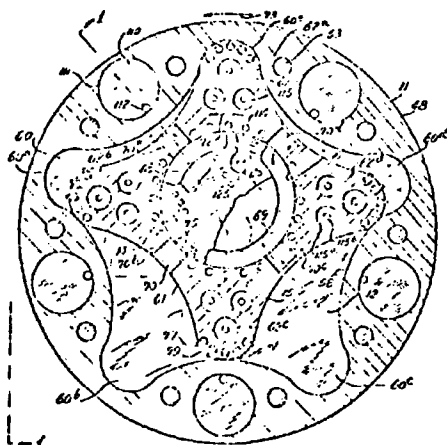
Canadian Patents

728,459	Feb. 22, 1966	Henry-Biabaud
711,935	June 22, 1965	Péras

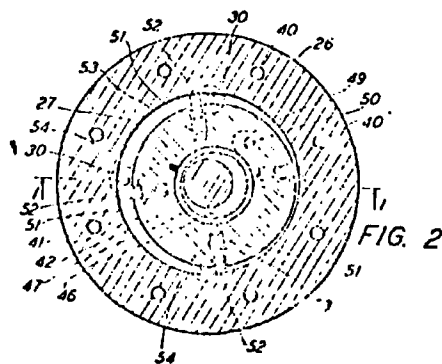
United States Patents

3,034,484	May 15, 1962	Stefancin
2,423,507	July 8, 1947	Lawton

The Stefancin patent relates to rotary engines of the expansion chamber type using heated gaseous pressure medium as the motive fluid. Figure 3, shown below, illustrates the Stefancin device.



The Lawton patent relates to pumping mechanism arrangement using reciprocable vanes eccentrically operable within a circular casing. Figure 2 of Lawton is shown below.



Péras and Henri-Biabaud relate to rotary engines which show that the stator has one more lobe than the rotor. Péras shows a two lobe rotor in a three lobe casing and Henri-Biabaud uses a four lobed rotor in a five lobed casing.

In the Final Action the examiner referred to the citation drawing numbers to show in detailed analysis the manner in which the references show the claims component elements. He stated (in part) as follows:

The immediately following discussion will again show that claims 1, 6, 10, 11 and 15 do not define a patentable difference over the patent to Stefancin, contrary to applicant's arguments. As pointed out in the previous Office Action, the Stefancin patent shows a rotary engine having all of the structural features defined in claims 1, 6, 10, 11 and 15. With reference to claim 1, for example, the Stefancin patent teaches a rotary engine having a housing means (item 11), forming an internal surface means (item 12), valve shaft means (item 13) mounted in the housing and provided with an eccentric means (item 14), a rotor (item 15) journaled on the eccentric portion for rotation about its axis while the rotor axis describes a planetary motion relative to the axis of the housing, the rotor having projecting sealing means (item 77) disposed intermittently around the outer periphery of the rotor in sealing engagement with the internal surface means of the housing thereby forming a plurality of variable volume working chambers (items 60a, 60b, 60c, 60d and 60e) between the rotor and housing means, and inlet and outlet passages (items 63, 66, 68, 69 and 70) communicating with each of the working chambers disposed within the eccentric valve shaft and rotor, with opening and closing of the inlet and outlet passages to each working chamber controlled by rotation of the rotor relative to the eccentric valve shaft means. The structure defined by claim 1 is thus precisely the structure taught by the Stefancin reference. Detailed analysis of claims 6, 10, 11 and 15 show that the structural features defined in these claims are also taught by the Stefancin reference. As pointed out in previous Office actions, the addition of a formula by which the maximum number of cycles of the rotary mechanism may be calculated does not provide a patentable distinction over the prior art.

In his response to the Final Action the applicant reviewed the prosecution of the application and supplied definitions for patent terminology taken from the U.S. Department of Commerce General Information concerning patents. His response stated (in part):

The Tyree application contains only features new and useful, Conceived and Reduced to practice, over said Old Design. Tyree means disclosed and claimed features are basic over the original concept of gerotor history of which Stefancin is a part. (Exhibit QQ and Prior Art V. U.R.T. shows a clear picture in graphic form, U.R.T. is Tyree) see Affidavit 1/30/74.

Prior art Stefancin at issue is being cited by new examiner D. Logan, taking facts as to the whole thereof, out of context as to Tyree disclosed & claimed true intended meaning. Logan is attempting to use a cross-section which is an Old Design, of which Stefancin may have a limited patent of a design means thereover... However, said Stefancin does not contain or disclose a claim of a basic nature, with a feature to be read as broad enough to exclude others from using said Old Design... See enclosed Fig. 1 Lilly 1915 as example of prior art Old Design.

NOTE: Tyree claims now at issue, have already been Judged Basic over Old Design, see now of record Tyree Patent #449,435 filed under International Convention, on the same day as Canada, containing passed to issue claims, exact to now at issue Canada, claims 1 thru 18 define the Tyree invention in distinct and explicit terms as required by Sec. 36 (2) of the Patent Act. Please also note, Tyree abstract was amended and approved to fully conform to the requirements of Rule 27 A of the Patent Rules, thus pointing out the advance in the art, thus giving a brief technical description of the disclosure indicative of the utility of the invention & the manner in which this invention is distinguishable from all other inventions.

In Tyree Patents and Canada Application, N+1/N defined speed of two components i.e. rotor and housing (rotor = X^1 and housing = X) Tyree main claim reads over Stefancin and all prior art, stating: "a rotor journaled on the eccentric portion for rotation about its axis (X^1) while the rotor axis (X^1) describes a planetary motion" - (is defining the working motion of the rotor, one component, note, " X^1) - (X^1)" is stating two motions to the rotor at the same instance, causing 50 cycles per revolution, result: $N+1/N$ causing $C=2X^2$). As I continue the basic wording of the main claim I state: - "relative to the axis (X) of the housing", this is defining the relative speed of two components, result is $N+1/N$ where N is the number of lobes in the OUTER component (not inner, as in Stefancin and Lilly - prior art). Tyree claimed teachings are clear and distinct, basic conception and wording in main claim originally drafted with working model in hand, reduced to practice, and having pioneering functioning structure over all prior art.

Supreme evidence as to above $N+1/N$ causing $C=2X^2$ is, housing (10) Fig. 13 has, (by noting position of arrow) turned only 288° and said 40 cycles before a repetition of events occurs, has taken place, (proving above $C=2X^2$) when said housing (10) completes 360° said 50 cycles will have taken, or $C=2X^2$ please note, 10 cycles each 72° of movement, $72^\circ \times 5$ chambers = 360° or $N+1/N$ where N is the number of lobes in the OUTER component giving 6/5 "relative -- planetary motion" as shown, described and claimed in claim 1 and claims dependent thereon. Stefancin teaches 4/5 and N = inner (same as Lilly) therefore N = 4/5 not 6/5 like Tyree disclosed and claimed teachings.

Claim 1 of the application reads as follows:

A rotary mechanism for fluid pumps, fluid motors, combustion engines or the like comprising housing means forming an internal surface means, valve shaft means mounted in the housing and provided with an eccentric means, a rotor journalled on the eccentric position for rotation about its axis while the rotor axis describes a planetary motion relative to the axis of the housing, the rotor having projecting sealing means disposed intermittently around the outer periphery of the rotor in sealing engagement with the internal surface means of the housing thereby forming a plurality of variable volume working chambers between the rotor and housing means, and inlet and outlet passages communicating with each of the working chambers disposed within the eccentric valve shaft and rotor with opening and closing of the inlet and outlet passages to each working chamber controlled by rotation of the rotor relative to the eccentric valve shaft means, wherein the maximum number of cycles of the rotary mechanism per revolution is governed by the equation

$$C = 2X^2$$

where C is the number of cycles and X is the number of working chambers.

We note that the examiner has indicated that claims 8, 9 and 13 are directed to allowable subject matter with minor amendments. Therefore the question to be considered by the Board is whether the remaining claims represent a patentable advance in the art.

Considering the Stefancin patent we find that it displays an arrangement similar to that found in this application. The Final Action indicates that the structural features of claims 1, 6, 10, 11 and 15 are shown in Stefancin. In his response to the Stefancin reference the applicant states that the examiner is "attempting to use a cross-section which is an Old Design, of which Stefancin may have a limited patent of a design means thereover ---- However said Stefancin does not contain or disclose a claim of a basic nature..." To obtain a claim of a "basic nature" however, requires the necessary attributes of novelty, utility and ingenuity. It is clear from the prior art that the concept of rotary motors is well known for many years. Any patentable protection for this arrangement can only be for improvements to the basic design. Therefore, we find that the applicant fails to show any novel concept in this particular arrangement.

There was considerable detailed argument with respect to the formula found in claim 1. The examiner in the last two actions has stated that the formula $C = 2X^2$ does not state a significant fact descriptive or definitive of the invention. In his response to the Final Action the applicant contends that:

Supreme evidence as to above $N-1/N$ causing $C=2X^2$ is, housing (10) Fig. 13 has, (by noting position of arrow) turned only 288° and said 40 cycles before a repetition of events occurs, has taken place, (proving above $C=2X^2$) when said housing (10) completes 360° said 50 cycles will have taken, or $C=2X^2$ please note, 10 cycles each 72° of movement, $72^\circ \times 5$ chambers - 360° or $N-1/N$ where N is the number of lobes in the OUTER component giving $6/5$ "relative -- planetary motion" as shown, described and claimed in claim 1 and claims dependent thereon. Stefancin teaches $4/5$ and $N =$ inner (same as Lilly) therefore $N = 4/5$ not $6/5$ like Tyree disclosed and claimed teachings.

We are not convinced that this formula states any definitive or significant description of the invention. It is more along the lines of a scientific principle. Section 28(3) of the Patent Act prohibits the issue of a patent for a mere scientific principle. This Section reads as follows:

No patent shall issue for an invention that has an illicit object in view, or for any mere scientific principle or abstract theorem. R.S., c.203, s.28.

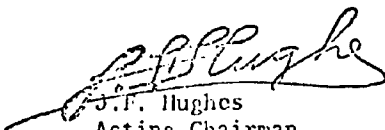
We will now consider the claims. Claim 1 specifies the component elements of a rotary mechanism for pumps, motors or combustion engines and ends with the number of cycles, equation $C = 2X^2$. As has been previously mentioned the component elements are all shown in the Stefancin patent and in the Final Action the examiner clearly specifies the reference members to show these elements. We have also commented with respect to the formula. In the circumstances we find no basis for a claim to a monopoly on that disclosure. Claim 1, in our view, is not directed to a patentable advance in the art and should be refused.

Claims 6, 7, 10, 11, 12, 14, 15 and 16 do not have any significant feature over that of refused claim 1 and we also recommend their refusal.

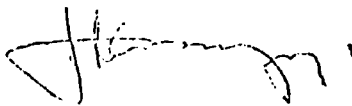
Claims 2, 3, 4, 5 and 17 are directed to the embodiment indicated by Figure 14 of the applicant's drawing. The Final Action explained in detail the rejection of these claims on the ground of inoperability. It was pointed out by the examiner that Lawton discloses all the elements found in these claims plus the necessary "anchoring members" to be operable. The applicant has not made any comment on the rejection of these claims in his response to the Final Action. We find no reason to disagree with the examiner that these claims would not produce an operative device and recommend that claims 2, 3, 4, 5 and 17 be refused.

In summary, we are satisfied that claims 1, 6, 7, 10, 11, 12, 14, 15 and 16 are not directed to a patentable advance in the art over the references cited by the examiner. Claims 2, 3, 4, 5 and 17 are directed to an inoperable combination. We recommend that the decision in the Final Action to refuse these claims be affirmed.

As indicated earlier claims 8, 9 and 13 will be considered for allowance subject to minor amendment. The modifications suggested by the examiner are the deletion of the formula and a change of the word "engine" to "mechanism." We are satisfied that these claims, when presented in amended form, would be directed to a patentable advance in the art.


J.F. Hughes
Acting Chairman
Patent Appeal Board, Canada

I have reviewed the prosecution of this application and considered the recommendation of the Patent Appeal Board. In the circumstances I refuse to allow claims 1 to 7, 10 to 12 and 14 to 17. I will however, accept claims 8, 9 and 13 when presented in amended form as indicated by the Board.


J.H.A. Gariepy
Commissioner of Patents

Dated at Hull, Quebec
this 16th day of June, 1977

Agent for Applicant

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