

OBVIOUS: Adaption of Known Devices Producing Similar Result.

The device held to be a change only in form, proportion or degree, obtaining the same result in substantially the same way by substantially the same means, following the same principle as the prior art citations.

FINAL ACTION: Affirmed.

This decision deals with a request for review by the Commissioner of Patents of the Examiner's Final Action dated July 27, 1972 on application 078,470. This application was filed in the name of Charles R. Nixon et al and refers to "Wheel Balancing Device". The Patent Appeal Board conducted a hearing on November 29, 1972; Mr. R. McFadden represented the applicant.

In the prosecution terminated by the Final Action the examiner refused the application for lack of inventive ingenuity and applied the following references:

Canadian Patent:

731,937 Salathiel

United States Patent:

1,314,005 Louden.

The Final Action of the examiner read in part:

Relative to the argument concerning obviousness Louden shows that the use of spherical balls in a tube of circular cross-section is old and known in the art of balancing rotors. Louden also shows that the use of cylindrical rollers in a tube of rectangular cross-section or in a tube of rectangular cross-section with rounded corners is old and known in the art. Louden also shows the use of tubes which are integral with the rotor and tubes which secure to sides and rims of the rotors in both circular and rectangular cross-section configuration. Louden also discloses the use of damping liquids.

While applicant's alleged invention differs slightly in some respects from Loudon's teachings and in some other respects from Salathiel's teachings such differences cannot be considered patentable differences. Salathiel has adapted the balls and circular tube for use in balancing wheels and tires and applicant with a full knowledge of this prior art has also used the alternate form of cylinders and rectangular tubes for use with wheels and tires. Changes which applicant has made in Loudon's cylinder and rectangular tube configuration are changes made for the purpose of adapting the rectangular configuration for use with wheels and tires; changes which are reflected in Salathiel's adaptation of the circular configuration for use with wheels and tires; changes which require nothing more than the practise of expected skill.

The applicant's response of October 10, 1972 read in part:

It is submitted that the Examiner has misdirected himself with regard to the law relating to obviousness or lack of subject matter. The Examiner has stated as a ground of rejection on page 1 of the Official Action of July 27, 1972 that "the rejection of the application is maintained and the reason for such rejection is lack of inventive ingenuity". He then cites as a basis for this finding two patents, namely Salathiel, and also Loudon.

The subsidiary rejection of the Examiner is to the effect that "since Loudon shows that it is known in the art to use cylindrical weights in a tube of rectangular cross-section, no invention is seen in using cylindrical weights for balancing a wheel and tire particularly in view of the teachings of Salathiel". The Examiner continues "Salathiel teaches the use of balls in a circular cross-section tube, which Loudon discloses as simply an equivalent alternative".

Furthermore, after an extensive discussion of the usefulness or otherwise of Salathiel, the Examiner continues on page 6 at the last but one paragraph as follows: "Applicant has simply used a rectangular tube with cylindrical rollers which is shown by Loudon to be old and a well known alternative to a circular tube with balls for use in a wheel in a manner which is either shown directly by or reflected in Salathiel's patent".

This application relates to a wheel balancing device comprising a tube of rectangular cross-section containing a number of cylindrical weights and a damping fluid. The tube is attached to the peripheral rim of a wheel so that when the wheel rotates the weights are free to roll in the tube responsive to centrifugal forces to correct any imbalance.

The reference to Loudon discloses a wheel balancing device using cylindrical members in a tube of rectangular cross-section, and states at page 1 lines 26-37: "In its generic nature, my invention embodies a wheel or other axially mounted rotatable body, and a plurality of substances of different specific gravity arranged in annular relation upon or within the said rotatable body and adapted, under centrifugal action, to automatically shift with respect to the bearing of the rotatable body, and in such a manner that a perfect equilibrium of balance of the rotating body is constantly maintained." Therefore, the concept of using substances of different specific gravity within a rotatable body is well known.

The reference to Salathiel discloses an automatic wheel balancing device for use on vehicle wheels comprising an annular plastic tube having an outer profile matched to the rim of a wheel, and a plurality of steel globular weights of predetermined specific gravity dimensioned to fit loosely within the tube to move around the annular tube which is partially filled with a damping liquid having a specific gravity less than that of the weights.

Salathiel also states that: "Still another object is the provision of a wheel balancer featuring globular weights and a weight dampening fluid wherein the weights are automatically positioned to maintain vehicle wheels in a dynamic balanced condition by centrifugal force while the fluid dampener prevents sudden undesired shifting of the weights in response to a shock or force applied to the wheel or tire." Salathiel also shows a plurality of mounting means at spaced intervals around the tube to secure it to the rim of the wheel.

Having compared the device of this application with the cited reference to Salathiel we find that the only basic difference is the change from an annular tube of circular cross-section using globular weights to an annular tube of rectangular cross-section using cylindrical weights.

Salathiel adopted dynamic balancers to rotating masses such as automobile wheels and selected 5/16" steel spherical weights and 3/8" I.D. tubing for his preferred embodiment. The tests carried out by Salathiel showed that when the correct proportion of weights and damping liquid is used, the wheels will be: "Balanced at all speeds from 10mph to 120mph." (see page 8 of the disclosure). Salathiel also states on page 10: "Obviously the invention is applicable to other uses such as balancing truck wheels, aircraft wheels and the like and appropriate changes of scale and size will be made accordingly." (emphasis added)

The applicant has argued that Salathiel's balancer is inoperative because Salathiel must first statically balance the wheels. However on this point Salathiel states at page 8: "...the most satisfactory dynamic balancing of various automobile wheels is achieved by first static balancing each wheel and then installing one of the balancers...." and further explains on page 9 the reason as: "When a wheel and tire, in an unbalanced condition, is rotated the center of rotation is offset with respect to the center of the wheel on a diametric line taken through the center of the wheel and the center of the mass of unbalance. When the wheel balancer tube 20 is installed on such a wheel and the wheel is rotated at a relatively low speed the balls 24 are concentrated in that portion of the tube adjacent the mass of tire and wheel imbalance creating a greater imbalance of the tire and wheel..." In other

words the dynamic imbalance and the imbalance condition of the wheel tend to increase the total imbalance of the wheel below a critical speed. Salathiel only stated the most satisfactory method of avoiding this problem. It follows that, the double imbalance is cancelled out only above a critical speed. However it is held that the applicant must encounter the same problem as it is part of the principle of dynamic balancing.

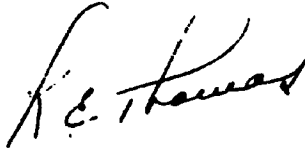
The applicant has increased the total mass of the weights by changing the shape from globular to cylindrical as opposed, for example, to increasing only their size or number, or both, and consequently changing the cross-sectional shape of the tube to accomodate them, in order to obtain a larger capacity balancer. However, it was previously noted that Louden used cylindrical members in a tube of rectangular cross-section. The fact that the members had a lower specific gravity than the fluid, but nonetheless the members must move around the tube to effect balancing, is of no consequence in principle or result obtained.

Therefore, the Board is satisfied that all the applicant has done is select an alternative that would naturally occur to a competent person desiring to provide an increased weight/damping fluid mass ratio to correct an amount of static imbalance, and the greater the imbalance the greater the weights/damping fluid mass ratio. (or vice versa as in Louden)

The applicant also states that the device has been a commercial success. While commercial success may assist in determining the presence of invention in cases of substantial doubt, jurisprudence has viewed it with caution as such success may be due to causes extraneous to the invention.

As an example of a number of decisions on the point in question the Court, Lofne Martin Co. Ltd. v. Office Specialty Manufacturing Co. Ltd. (1930) Ex.C.R. 181, held that: "The mere carrying forward of the original thought, a change only in form, proportion or degree, doing the same thing in the same way, by substantially the same means, with better results is not such an invention as will sustain a patent" (page 187 line 9) and "It is always necessary to consider the rights of the general public to avoid monopolies on such simple devices as would occur to anyone, familiar with the art."

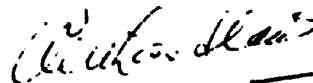
In the circumstance, the Board is satisfied that the device is a change only in form, proportion or degree, and keeping in mind that Salathiel, as previously noted, states: "...appropriate changes of scale and size will be made accordingly." Therefore the Board recommends that the decision of the examiner, to refuse the application, be upheld.



R.E. Thomas
Chairman, Patent Appeal Board,

I concur with the findings of the Patent Appeal Board and refuse to grant a patent on the subject matter of this application. The applicant has six months in which to appeal this decision in accordance with Section 44 of the Patent Act.

Decision accordingly,



A.M. Laidlaw,
Commissioner of Patents.

Dated at Ottawa, Ontario,
this 11th day of December, 1972.

Agent for Applicant

Mr. George A. Rolston