

DECISION OF THE COMMISSIONER

IN THE MATTER OF a request for a review by the Commissioner of Patents of the Examiner's Final Action under Section 46 of the Patent Rules (Prior to the Amendment by Order-in-Council P.C. 1970-728 effective June 1, 1970).

AND

IN THE MATTER OF a patent application serial number 965,861 filed July 20, 1966 for an invention entitled:

DISC BRAKES

Patent Agent for Applicant:
Messrs. Fetherstonhaugh & Co.,
Toronto, Ontario.

This decision deals with a request for a review by the Commissioner of Patents of the Examiner's Final Action rejecting all the claims of application 965,861.

The Patent Appeal Board has reviewed the prosecution of this application and the facts are as follows:

Application 965,861 filed July 20, 1966 in the name of Harold Hodgkinson relates to Disc Brakes and particularly to rotatable brake discs for disc brake assemblies.

In the prosecution terminated by the Final Action, the Examiner refused to allow the application on the ground that it fails to define patentable subject matter over the following references:

United States Patent 2,380,085 - TACK et al
United States Patent 2,242,855 - FLOWERS

During the prosecution of the application the Examiner maintained that only expected skill and not inventive ingenuity was involved in combining two of the several passage openings disclosed by Tack et al, to form a brake disc which differs from the applicant's brake disc only by its lack of reinforcing ribs and inclination of the passages.

The examiner also pointed out that the use of reinforcing ribs in an air cooled brake disc is old in the art as shown by the patent to Flowers while inclining the passages is simply a matter of design choice requiring no inventive ingenuity.

In applicant's letter of January 7, 1970, wherein the review by the Commissioner was requested, he argued:

"In the construction disclosed in Figures 1-3 of the Tack specification openings 16 corresponding to the second openings 8 of the present invention are formed in alignment with the openings 16 corresponding to the first openings 7 of the present invention, and do not extend into the axially - extending radially inner surface of the central dished body portion. Instead separate openings are provided on the inner surface of the central dished body portion".

Applicant maintains that this causes the plate 8 of the patent to Tack et al to have reduced conduction cooling compared with the corresponding part of applicant's disc.

Applicant held:

"Conduction of heat from the plate 8 of Tack's brake disc has to be through a narrow circuitous path because the plate 8 is connected to the central body portion only along the edges of each aperture 18 and consequently heat cannot be conducted in an axial direction through the central body portion along a linear path, as it can in a brake disc in accordance with the present invention, but initially has to follow a generally circumferential path through the webs of metal between the apertures 18 and the edge of the central body portion.

"Thus the plate 8 of Tack's brake disc is subject to less efficient conduction - cooling than the corresponding part of a brake disc in accordance with the present invention and, therefore, stresses arising from the differential cooling rates of the two sides of the brake disc, which may lead to cracking of the disc, are more likely to arise in the disc disclosed in the citation.

"Further, since the plate 8 of Tack's brake disc is connected to the central body portion along the edges of the apertures 18, the assembly is mechanically weaker than a brake disc in accordance with the present invention".

Applicant continues and points out:

"With regard to Tack's Figure 4 embodiment, it will be noted that there is no opening formed in the axially-extending radially inner surface of the central body portion. Consequently although this embodiment of the citation provides the plate 108 with mechanical support and a heat conduction path comparable to that provided in the present invention, there is no flow of air from the central body portion through the ventilation passages in a generally radial direction. All the air flowing through the passage is forced to change direction through approximately 90 degrees and this provides resistance to the flow of air, reduces the rate of flow and, therefore reduces the rate of loss of heat from the disc".

In his final argument applicant states that three steps are necessary to arrive at his disc.

"It is necessary first to combine the disc construction shown in Figures 2 and 4 of the Tack specification, then add the reinforcing ribs disclosed in Flowers and made the further step of inclining the ribs.

"Applicant submits that it is impossible to justify the Examiner's opinion that the three separate steps outlined above are merely a matter of design or choice, as a considerable period of time has elapsed since the publication of the cited references and no one has previously produced a brake disc in accordance with the present invention".

Upon review of the grounds set forth by the examiner, as well as all the arguments presented by the applicant I am not satisfied the rejection is well founded.

Claim 1 of the application reads as follows:

A brake disc comprising a rigid assembly of an annular outer disc portion and a central dished body portion, the disc portion having formed therein a series of ventilation passages extending from a series of openings formed at the radially outer periphery of the disc portion to a series of openings formed at the radially inner periphery of disc portion, each of the ventilation passages extending in a direction which is inclined with respect to the direction of the adjacent radius of the disc portion including a series of first openings formed at circumferentially-spaced positions in the side of the disc portion axially nearer the base

of the central dished body portion, and a series of second openings formed at circumferentially-spaced positions in the side of the disc portion axially remote from the base of the central dished body portion, the second openings alternating with the first openings around the radially inner periphery of the disc portion and extending into the body portion to provide direct communication in a generally radial direction with respect to the brake disc between the central dished body portion and the ventilation passages, each passage having at its radially inner end only a first opening or only a second opening.

The basic reference United States Patent 2,380,085 issued July 10, 1945 to Tack discloses:

In a brake rotor, a substantially cylindrical support member, a brake ring formed on the outer periphery thereof and comprising a plurality of spaced plates, fluid inlets formed in the side of said ring adjacent its juncture with said member, said inlets communicating with the space between said plates, the inlets in one side of said ring being alternately arranged with respect to the inlets on the opposite side of said ring.

I should like to point out at this time that the question is not whether the elements are new but whether the combination of elements, with its arrangements of parts, is novel and the result of inventive ingenuity. Furthermore it is necessary only that there should be ingenuity exercised either in the conception of the idea or in the method of applying it.

The examiner appears to be dissecting the claims in order to show lack of invention. The dissection of a combination into its constituent elements and the examination of each element in order to see whether its use was obvious or not is, in my view, a method which ought to be applied with great caution since it tends to obscure the fact that the invention claimed is the combination.

The applicant submits that his disc makes a considerable advance in the art by solving the problem of cracking under heavy braking and supports this assertion by affidavit. The examiner agrees with this "... applicant has indeed solved the problem of cracking under heavy braking ...".

The examiner also has stated that the reasons for the cracking may not have been obvious. Here I find the applicant has solved a problem wherein the solution was at least unobvious. Furthermore, applicant states that discs of the Tack type have been tested under racing conditions and were found to be unsuitable in that the disc would crack at high speeds.

The examiner in his Final Action is basically using the patent to Tack as a main reference and only uses the patent to Flowers against claim 4. The examiner did not specifically use the term anticipation, however, the following Court decision is of interest: Balwin v. Western Electric (1934) S.C.R. 94 at 103 "It is well established that for a prior patent to constitute anticipation, the patent must disclose the same or give information equal in practical utility to that given by the patent in question." I am satisfied that the patent to Tack does not give information equal in practical utility to that given by this application.

I find that the applicant has produced a new combination of a disc brake with improvements of: (a) a different arrangement of parts. (b) inclined ventilation passages.

I am satisfied that the applicant has made a prima facie showing of ingenuity. The Court has held, the Commissioner of Patents v. Hoechst (1964) S.C.R. 49; 25 Fox P.C. 99:

"The Commissioner should not refuse to allow an application to proceed to the grant of a patent unless he is quite satisfied that the subject matter of the application could not conceivably be patentable within the meaning of the Act."

I recommend that the rejections against the allowance of this application should be withdrawn.

R.E. Thomas,
Chairman,
Patent Appeal Board.

I concur with the findings of the Patent Appeal Board and I am therefore setting aside the Final Action and returning the application to the examiner for resumption of prosecution.

Decision accordingly,

A.M. Laidlaw,
Commissioner of Patents.

Dated at Ottawa, Ontario,
this 30th day of November, 1970.