Paper No. 15

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte WILLIAM L. DeLEEUW and DAVID K. PFISTER

Appeal No. 2002-0491
Application No. 09/287,081

ON BRIEF

Before FRANKFORT, McQUADE and BAHR, Administrative Patent Judges.

McQUADE, Administrative Patent Judge.

DECISION ON APPEAL

William L. DeLeeuw et al. appeal from the final rejection of claims 1 through 8 and 10 through 20, all of the claims pending in the application.

THE INVENTION

The invention relates to a bushing assembly for a cam braking system. Representative claims 1 and 14 read as follows:

1. A cam bushing assembly for a cam braking system comprising:

a removable bushing retainer having an aperture forming a side wall having an inner retainer surface and an outer retainer surface, said retainer having a hole extending through said side wall from said outer retainer surface to said inner retainer surface into said aperture allowing for flow of a lubricant into said aperture; and

a bushing having an interior bore for supporting a camshaft, said camshaft being disposed with said aperture, and said bushing is removably connected to said retainer.

14. A cam assembly for a cam braking system comprising:

a brake spider for supporting and facilitating lubrication of a cam shaft portion of a cam brake;

a cam mounted adjacent said spider;

a bushing retainer having an aperture along a longitudinal axis, said retainer having at least one flange having a hole for receiving a bolt to bolt said retainer to said brake spider and allowing said retainer to be removably connected to said brake spider, said retainer having a hole facilitating the flow of a lubricant into said aperture; and

a bushing being generally cylindrical in shape having an outer circumference and an interior surface, said bushing being pressed into said retainer aperture creating an interference fit and is removably connected to said retainer.

THE PRIOR ART

The references relied on by the examiner to support the final rejection are:

Baltare	4,445,597	May 1, 1984
Steiner et al. (Steiner)	4,576,488	Mar. 18, 1986

THE REJECTION

Claims 1 through 8 and 10 through 20 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Baltare in view of Steiner.

Attention is directed to the appellants' main and reply briefs (Paper Nos. 10 and 12) and to the examiner's answer (Paper

No. 11) for the respective positions of the appellants and the examiner with regard to the merits of this rejection.

DISCUSSION

Both Baltare and Steiner pertain to cam bushing assemblies of the sort claimed by the appellants.

Baltare discloses a drum brake assembly 10 comprising, in pertinent part, a spider body 42, a brake-actuating cam element 30, a cam shaft 39, a removable cam shaft support flange 44, and a cam shaft bushing 72. As described by Baltare,

> [t]he cam shaft support flange 44 comprises a flanged portion 56 having a pattern of apertures 58 corresponding to apertures 60 provided in the upper portion of the spider body 42 for removably attaching the cam shaft support flange 48 [sic, 44] to the spider body 42 by means of bolts 62 and nuts 64. The cam shaft support flange also includes a generally hollow tubular portion 68 defining an axially extending bore 70 in which a bushing 72 is received. The cam shaft 39 is rotationally supported within the inner diameter bore 74 of bushing 72 [column 3, lines 30 through 39].

Steiner discloses a brake drum bearing bushing having "a considerably improved grease distribution" (column 2, lines 4 and 5). In Steiner's words,

> a brake bridge 2 is mounted on an axle member 1. Disposed in the brake bridge 2, at the lower end, is a support mounting 3 for brake shoes 5 which cooperate with a brake drum 4 and can be spread apart by a brake cam 7 via a brake shaft 6. The brake shaft 6 is actuated by a brake lever 8, and is mounted not only in a support bearing 9 which is connected with the axle member 1, but also in a journal bearing 10 which is mounted in the brake bridge 2.

> The journal bearing 10 comprises an outer bearing sleeve 11, which is mounted in the brake bridge 2, and a bearing bushing 12, which is pressed into place in said bearing sleeve 11, and is made of brass, bronze, or a sintered metal which is suitable as a bearing material. The bearing bushing 12 is fixed in position by means of spacers 13 and spring or snap rings 14.
>
> A circumferential, annular grease or lubricant recess 15 is provided on the outside of the bearing bushing at one end thereof; the grease recess 15 is disposed partially under a grease fitting 16 provided in the bearing sleeve 11. A plurality of, in the illustrated embodiment 4, distributing channels 17 proceed from the grease recess 15 and open out at the other end of the bearing bushing 12 into holes 18. On the inner side of the bearing bushing 12, all of the holes 18 are interconnected by a circumferential, first annular channel 19. A plurality of, in the illustrated embodiment 8, lubricating channels 20 proceed from the first annular channel 19, and at the other end of the bearing bushing 12 are connected to a circumferential, second annular channel 21. A plurality of, in the illustrated embodiment 2, outlet or discharge channels 22 are connected to the second annular channel 21 [column 2, line 47, through column 3, line 20].

The Baltare assembly, with its cam shaft support flange 44 constituting a removable bushing retainer, meets all of the limitations in independent claims 1 and 14 except for those requiring (1) the retainer to have a hole for allowing or facilitating the flow of lubricant and (2) the bushing to be removably connected to the retainer. Baltare does not disclose retainer 44 as having such a hole and does not provide any factual support for the examiner's determination (see page 4 in the answer) that bushing 72 is removably connected to the retainer. On the other hand, Baltare's apertured flange portion

56 belies the appellants' contention that the reference also lacks response to the "flange" limitation in claim 14.

Steiner discloses a similar assembly wherein the bushing 12 is pressed fitted into its retainer (sleeve 11) and is removably connected thereto as evidenced by the need for spacers 13 and snap rings 14 to fix it in place. This teaching would have suggested removably press fitting Baltare's bushing into its retainer for the self-evident purpose of permitting the bushing to be removed for repair or replacement.

Steiner also discloses a bushing lubrication arrangement including a hole through the retainer (sleeve 11) for accommodating grease fitting 16. Steiner's discussion (see column 1, lines 6 through 37) of the conventional practice of lubricating bushing assemblies of the type at issue and the advantages of doing so via the lubrication arrangement disclosed therein would have provided the artisan with ample suggestion to incorporate this arrangement, including the hole in the retainer, into Baltare's bushing assembly to achieve the manifest operational benefits afforded by lubrication. The appellants' arguments to the contrary rest on the unfounded assertions that Baltare's retainer (cam shaft support flange 44) is too thin to support a lubrication function and that the addition of such a function would destroy Baltare's intention that the retainer be capable of reverse mounting on spider body 42. The record,

however, contains no evidence that Baltare's cam support flange 44 is too thin to support a lubrication function, and Baltare does not teach, or even suggest, that the cam support flange 44 be capable of reverse mounting. The test for obviousness is not whether the features of a secondary reference may be bodily incorporated into the structure of the primary reference; nor is it that the claimed invention must be expressly suggested in any one or all of the references. Rather, the test is what the combined teachings of the references would have suggested to those of ordinary skill in the art. In re Keller, 642 F.2d 413, 425, 208 USPQ 871, 881 (CCPA 1981). For the reasons set forth above, the combined teachings of Baltare and Steiner would have suggested the subject matter recited in claims 1 and 14.

Claim 5 depends indirectly from claim 1 and recites a flange similar to that recited in claim 14. As explained above, Baltare meets this limitation.

Claims 7 and 19 depend indirectly and directly from claims 5 and 14, respectively, and further define the retainer as having four flanges with holes for bolts. Baltare's retainer ostensibly has but one flange (flange portion 56) containing four holes for bolting the retainer to the spider body (see Figures 2 and 3). As there is nothing in the record to indicate that the four flanges disclosed and claimed by the appellants solve a stated

problem or present a new or unexpected result, the similarity in structure and identity of function between the multiple flanges recited in claims 7 and 19 and Baltare's single flange support a conclusion that the multiple flanges would have been an obvious matter of design choice well within the level of ordinary skill in the art (see In re Kuhle, 526 F.2d 553, 555, 188 USPQ 7, 8-9 (CCPA 1975)).

Dependent claims 10 through 13 and 15 through 17 define lubrication components (a grease fitting associated with the lubricant hole in the retainer and various lubricant grooves and holes in the bushing) which Steiner shows to be conventional expedients. Steiner's description of the benefits afforded by these features would have suggested the incorporation of same into Baltare's retainer and bushing.

Hence, the combined teachings of Baltare and Steiner justify the examiner's conclusion that the differences between the subject matter recited in claims 1, 5, 7, 10 through 17 and 19 and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art. Accordingly, we shall sustain the standing 35 U.S.C. § 103(a) rejection of claims 1, 5,

7, 10 through 17 and 19 as being unpatentable over Baltare in view of Steiner.

We also shall sustain the standing 35 U.S.C. § 103(a) rejection of dependent claims 2 through 4, 6, 8, 18 and 20 as being unpatentable over Baltare in view of Steiner since the appellants have not challenged such with any reasonable specificity, thereby permitting these claims to stand or fall with their respective parent claims (see In re Nielson, 816 F.2d 1567, 1572, 2 USPQ2d 1525, 1528 (Fed. Cir. 1987)).

SUMMARY

The decision of the examiner to reject claims 1 through 8 and 10 through 20 is affirmed.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 CFR § 1.136(a).

AFFIRMED

CHARLES E. FRANKFORT Administrative Patent Judge	)
JOHN P. McQUADE Administrative Patent Judge	) BOARD OF PATENT APPEALS AND INTERFERENCES
JENNIFER D. BAHR Administrative Patent Judge	)

JPM/gjh

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