

The opinion in support of the decision being entered today was *not* written for publication and is *not* binding precedent of the Board.

UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES

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*Ex parte* ROBERT SNOW

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Appeal 2006-1966  
Application 10/246,506  
Technology Center 3600

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Decided: July 27, 2007

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Before WILLIAM F. PATE III, HUBERT C. LORIN, and  
JENNIFER D. BAHR, *Administrative Patent Judges*.

WILLIAM F. PATE III, *Administrative Patent Judge*.

DECISION ON APPEAL

STATEMENT OF CASE

This is an appeal from the final rejection of claims 1-3, 5, 6, 8-10, 12 and 13. Claims 4, 7, 11 and 14 have been cancelled. Claims 15-19 have been withdrawn from consideration.

We have jurisdiction under 35 U.S.C. §§ 134 and 6.

The claimed invention is directed to a clamp assembly for attaching a hub to a vehicle axle.

Claim 1 reproduced below, is further illustrative of the claimed subject matter.

1. A clamp assembly for attaching a hub structure to a vehicle axle along a longitudinal axis thereof, comprising:

an elongated tubular structure adapted to slide over an end of the vehicle axle and hold a wheel concentric with rotation of the axle;

wherein said tubular structure includes a first end comprising a hub attachment structure adapted to hold a wheel and a second end comprising an axle clamping structure;

wherein the tubular structure further includes an expansion slot formed from said second end of said tubular structure along a portion less than the full length of said tubular structure and a clamping fastener positioned proximate to an open end of said expansion slot having a neutral position, a compression range, and an expansion range;

wherein moving said clamping fastener in a first lateral direction compresses said expansion slot to a position in said compression range, moving said clamping fastener in a second lateral direction by a first amount allows said expansion slot to expand back to said neutral position, and moving said clamping fastener further in said second lateral direction expands said expansion slot to a position in said expansion range.

The references of record relied upon by the examiner as evidence of obviousness are:

MacKenzie	U.S. 3,851,983	Dec. 03, 1974
Schlueter	U.S. 5,067,845	Nov. 26, 1991

Claims 1-3, 5, 6, 8-10, 12 and 13 stand rejected under 35 U.S.C. § 103 as being unpatentable over MacKenzie in view of Schlueter.

### ISSUES

The sole issue for our consideration on appeal is whether the examiner has made out a prima facie case of obviousness of the claimed subject matter.

### FINDINGS OF FACT

The following are findings of fact regarding the scope and content of the prior art and the differences between the prior art and the claimed subject matter.

1. MacKenzie discloses a coupling 10 using a sleeve-like member 11 to attach a hub structure, shaft S, to a vehicle axle, shaft D. The tubular structure is adapted to slide over the end of the vehicle axle D. The tubular structure includes an expansion slot 13 which extends along a portion less than the full length of the sleeve or tubular structure and the clamping fastener including screws 16 and 17 in sockets 14 and 15 so that the sleeve-like member can be compressibly clamped about shafts S and D. MacKenzie does not disclose that the tubular structure of the clamp assembly has an expansion slot wherein moving

the clamping fastener further in the second lateral direction, expands the expansion slot to a position in the expansion range.

2. Schlueter shows an analogous clamp assembly (see Fig. 7) including an expansion slot 21' and a clamping fastener screw 31'. When moving the fastener further in its second lateral direction, the clamp is moved to an expanded position due to fastener contacting stopping structure, dowel 43.

#### PRINCIPLES OF LAW

“Section 103 forbids issuance of a patent when ‘the differences between the subject matter sought to be patented 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 to which said subject matter pertains.’” *KSR Int'l Co. v. Teleflex Inc.*, 127 S.Ct. 1727, 1734, 82 USPQ2d 1385, 1391 (2007). The question of obviousness is resolved on the basis of underlying factual determinations including (1) the scope and content of the prior art, (2) any differences between the claimed subject matter and the prior art, (3) the level of skill in the art, and (4) where in evidence, so-called secondary considerations. *Graham v. John Deere Co.*, 383 U.S. 1, 17-18, 148 USPQ 459, 467 (1966). See also *KSR*, 127 S.Ct. at 1734, 82 USPQ2d at 1391 (“While the sequence of these questions might be reordered in any particular case, the [*Graham*] factors continue to define the inquiry that controls.”) In *KSR*, the Supreme Court emphasized “the need for caution in granting a patent based on the combination of elements found in the prior art,” *id.* at 1739, 82 USPQ2d at 1395, and discussed circumstances in which a patent might be determined to be obvious. In

particular, the Supreme Court emphasized that “the principles laid down in *Graham* reaffirmed the ‘functional approach’ of *Hotchkiss*, 11 How. 248.” KSR, 127 S.Ct. at 1739, 82 USPQ2d at 1395 (citing *Graham v. John Deere Co.*, 383 U.S. 1, 12 (1966) (emphasis added)), and reaffirmed principles based on its precedent that “[t]he combination of familiar elements according to known methods is likely to be obvious when it does no more than yield predictable results.” *Id.* The Court explained:

When a work is available in one field of endeavor, design incentives and other market forces can prompt variations of it, either in the same field or a different one. If a person of ordinary skill can implement a predictable variation, §103 likely bars its patentability. For the same reason, if a technique has been used to improve one device, and a person of ordinary skill in the art would recognize that it would improve similar devices in the same way, using the technique is obvious unless its actual application is beyond his or her skill.

*Id.* at 1740, 82 USPQ2d at 1396. The operative question in this “functional approach” is thus “whether the improvement is more than the predictable use of prior art elements according to their established functions.” *Id.*

## ANALYSIS

We agree with the examiner that the combined teachings of MacKenzie and Schlueter would have rendered the subject matter of the claims *prima facie* obvious. In our view, the claimed subject matter is merely a combination of familiar elements according to known methods and would likely have been obvious to one of ordinary skill in the art as yielding a mere predictable result.

Appellant argues that there must be some suggestion, motivation or teaching in the references themselves to sustain an obviousness rejection. However, in *KSR* cited above, the Supreme Court relied on a functional analysis instead. In other words, if the use of the dowel 43 as a stop pin would have yielded the predictable result in MacKenzie of moving the clamping joint into an expansion range just as it functions in Schlueter, then the combination of references would likely have been obvious to one of ordinary skill. This is particularly true when appellant presents no evidence that the inclusion of this feature in MacKenzie was uniquely challenging or difficult for one of ordinary skill. *See, Leapfrog Enterprises, Inc. v. Fisher-Price, Inc.*, 485 F.3d 1157, 1162, 82 USPQ 1687, 1692 (Fed. Cir. 2007).

Appellant further argues that there is no reasonable expectation of success in combining the two prior art teachings. We disagree. In this case, there is a design need or market pressure to solve the problem of opening the clamp to the expansion range without the use of hammers and wedges or chisels. See Specification 4:24-29. We further note that there are a finite number of identified, predictable solutions to such a problem such as the solution disclosed by Schlueter. Accordingly, one of ordinary skill would have good reason to pursue the known options when they are within his or her technical grasp. Inasmuch as this would lead to an anticipated success, it is likely that this combination of references is not a product of innovation, but of ordinary skill and common sense. *See, KSR*, 127 S.Ct. at 1742, 82 USPQ2d at 1397.

## CONCLUSION

Appellant has failed to show that the examiner's rejection of claims 1-3, 5, 6, 8-10, 12 and 13 under 35 U.S.C. § 103 as being unpatentable over MacKenzie in view of Schlueter is in error. Accordingly, the decision of the examiner, rejecting all of the claims on appeal is affirmed.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 CFR § 1.136(a) (1) (iv).

AFFIRMED

vsh

IPSG, P.C.  
P.O. BOX 700640  
SAN JOSE CA 95170