

COMMISSIONER'S DECISION

OBVIOUSNESS: Link chaining

The reference uses an oval shaped ring member to lock the hooked ends of an open ended loop to complete the replacement chain link. In the application the chain is made up of rectangular plate links retained in position by open ended hooked loops which are closed by an arcuate shaped plate locking member.

FINAL ACTION: Reversed

This decision deals with a request for review by the Commissioner of Patents of the Examiner's Final Action dated June 3, 1974, on application 133,092 (Class 152-129). The application was filed on January 24, 1972, in the name of Hans O. Dohmeier, and is entitled "Chains."

This application relates to a chain comprising solid rectangular shaped links which are held in position by a resilient open-ended loop member. The loop ends are locked by a slotted rectangular shaped plate member.

In the prosecution terminated by the Final Action the examiner refused the application for lack of invention over the following patent:

France 2,007,709 Eisen January 9, 1970

In the Final Action the examiner stated (in part):

The application is rejected on the grounds of obviousness in view of the French patent 2,007,709.

In the reference a connecting link for use in anti-skid chains is made in the form of a loop with the ends of the loop turned out to receive a locking member. Figures 5 to 8 of the reference teach this particular arrangement using an oval ring member over the extended ends of the loop to form the lock. By using a metal plate instead of the oval ring taught by the reference the applicant caused an interference problem, which he solved in a manner, obvious to any skilled workman, by making the plate arcuate.

Applicant's device achieves the same result as that taught in the patent in the same manner.

It is noteworthy that the applicant failed to describe the arcuate feature in the description as filed, and made no mention of it in the objects of the invention. It was apparently a variation considered obvious by the inventor until prior art showed that the concept taught by the reference was old.

In his response dated August 28, 1974 the applicant stated (in part):

In rejecting the claims, the Examiner has made two allegations as follows: 1) that the differences as between the claimed subject matter and the teachings of the French patent are mere workshop improvements and would be an obvious expedient to one skilled in the art; and 2) Applicant has defined an arcuate locking member only for the purposes of obtaining a patent.

In accordance with the allegations of the Examiner, the arcuate member does not provide any practical solution and is only a legal point on which Applicant hopes to hang his hat. The Examiner has further alleged that the arcuate locking member was a contribution of the draftsman who drew the drawings rather than a contribution of the Inventor.

Considering the first allegation, a thorough review of the French patent does not indicate any instructions leading in the direction of an arcuate locking member. Although the French patent discusses several methods for locking the loop, there is no suggestion in the teachings of the French patent that the locking member should be made arcuate and that the convexity of the arcuate member be disposed towards the cavity of the loop. In addition, Examiner has failed to show any other prior art which would support his allegation that the arcuate shape of the locking member is merely an obvious variation of the locking member taught in the French patent. The Examiner has merely stated that this is so. He has not provided any evidence or any logical reason to support this statement. As will be more fully discussed, the arcuate shaped locking member is an inconvenient and expensive shape for the locking member. In view of the inconvenience and expensiveness of this shape, it is respectfully submitted that the prior art, i.e., the knowledge of those skilled in the art that such a shape is inconvenient and expensive, leads away from the shape so that the use of an arcuate shaped locking member is unobvious and therefore not merely a workshop improvement of one skilled in the art but a patentable distinction.

Considering the second allegation, as mentioned above, a locking member which is made in the form of an unbent plate is cheaper to make than an arcuate plate. It must be appreciated that each formation on any member involves a separate production line operation and therefore increases the cost of the member. If, as Examiner alleges, the arcuate shape is used in the claims only as a legal point and a means by which to obtain a patent, Applicant would certainly not use these more expensive and inconvenient shaped

locking members anywhere but in the patent specification. As evidence of the fact that Applicant does in fact use the arcuate shape locking members in his product line chains, Applicant is enclosing herein a brochure showing Applicant's product. The arcuate shape locking members have been encircled in red in a few places for easier identification.

As mentioned this application is for a chain comprising rectangular shaped links having apertures or slots therein. A resilient spring loop is threaded through the link aperture to hold each link in its respective position. The ends of the loop are turned out to enable a locking member to slip over them and hold the links in assembled condition. The locking member is an arcuate shaped rectangular plate with a slot therein.

The reference relates to a replacement chain link for anti-skid chains used on pneumatic tires. This link comprises a resilient open ended loop which replaces the broken link. An oval shaped ring member slips over the hooked loop ends to complete the loop closure and thereby form the replacement link.

The question to be considered is whether the applicant has made a patentable advance over the cited art.

It is noted that the applicant has submitted arguments with respect to amending the written portion of the disclosure in view of Rule 52 of the Patent Rules. As the applicant is entitled to describe any matter that has been disclosed in the application as originally filed, his amendment complies with Rule 52. Therefore we will restrict our comments only to the arguments relating to obviousness.

In the patent, the replacement link is a spring steel open ended loop with the ends of the loop turned out to receive a locking member. An oval shaped ring of circular cross section is used to slip over the loop ends and thereby form the new link. There is no indication of using a

flat rectangular shaped member for the locking device or of its arcuate curvature.

The applicant maintains that the use of a flat rectangular arcuate shaped locking member helps to support the links in vertical relation to the road surface. On page 7, at lines 14 to 18 he states:

This is achieved by making the locking members 10 arcuate with their convexities directed towards the cavities of the loops, so that, when the chain bunches, there is tangential contact between the links and the locking members which tends to hold the links edge-on to the road.

A force diagram study of the applicant's device would indicate that the straight outer edge of the locking member would rest against the side of the flat link member. When this situation occurs the locking member would help to support the link on road-edge position.

In reviewing a force diagram study of the application we find that the peripheral contact between a flat link member with the circular cross sectional locking member would act as a pivot point. Therefore the applicant's use of a locking member having a straight end does provide support to maintain the links in edge-on position which is not found in the patent. In addition applicant's curvature of the locking member tends to increase the amount of support surface and thereby reduce wear.

The applicant's locking member is a rectangular plate bent in an arcuate shape and having a slot therein. This configuration requires more manufacturing steps to produce as compared with the loop ring device found in the patent. A more expensive construction is required to produce the applicant's configuration to help hold the chain links in "road-edge" position. The use of cheaper and easier constructed oval ring locking members would not serve the intended purpose. No suggestion is found in the patent for the use of a flat arcuate locking member.

According to the applicant he has developed a chain which is cheaper to manufacture and is easier to replace components than in conventional chains. On page 2 of the application he stated "It is the object of the present invention to provide chain and particularly tire chain which can be readily formed into designated patterns which can be easily repaired when broken and which may be less expensively manufactured than presently available chains." Use of a rectangular metal plate with slots or holes therein to serve as a wear resistant chain link is not shown in the art. Connecting the links together by resilient steel loops having arcuate plate locking members enables easy repair and helps to hold the links in "road-edge" position. The patent uses a resilient steel loop for replacement purposes. An oval ring slips over the hooked loop ends to complete the enclosure. Applicants use of an arcuate plate locking member for his chain serves not only to complete the enclosure but also to help support the plate like links in vertical position.

Claim 1 of the application reads:

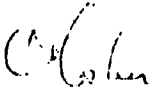
Chain comprising links connected together by resilient steel loops threaded through apertures in the links and with the ends of the loops closed by means of a locking member located on the ends of each loop when it is in a resiliently deformed condition; the locking member being arcuate and located with its convexity towards the cavity of the loop.

There is no teaching of the use of an arcuate locking member with its convexity toward the loop cavity in the patent. However, since the area of contact between the link and locking members is important in the applicant's device these elements must be described. Hence, the structural configuration of the rectangular link member as well as the flat rectangular arcuate locking member must be included in the claim. Our comments are also applicable to dependent claims 2 and 3.

Another distinction should be made between the applicant's invention and that of the French patent. In the former the whole chain is made up of the special linkage system employed. In the latter the patentee covers only replacements for broken links so that his links would appear in only isolated parts of the chain. The effect consequently would be different in the two cases.

The Board is satisfied that there is present in the invention some ingenuity which was the result of thought and experimentation. This will suffice for the grant of a patent. (See Crosley Radio Corporation v. Canadian General Electric Company (1936) S.C.R. 551 at 556).

The Board therefore recommends that the decision of the examiner to refuse the application be withdrawn, but that the claims should be amended as indicated above.



G.A. Asher
Chairman
Patent Appeal Board

I concur with the findings of the Patent Appeal Board and withdraw the Final Action. The application is returned to the examiner for resumption of prosecution.

Decision accordingly,



A.M. Laidlaw
Commissioner of Patents

Dated at Hull, Quebec
this 29th day of
July, 1975.

Agent for Applicant
Alan Swabey & Co.,
1117 St. Catherine St. W.,
Montreal, P.Q.