

Obviousness Hockey Stick Reinforcing

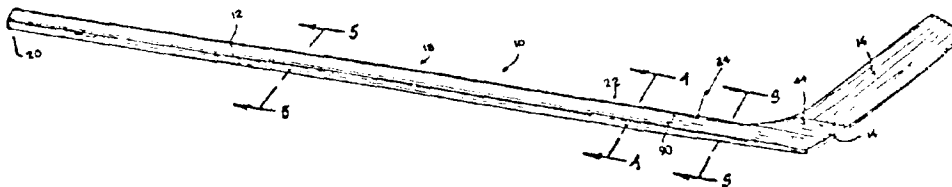
The stick is reinforced with strips of reinforcing plastic material embedded in the side surface of the wood core handle portion of the stick. The rejection of the broad claims were affirmed, but some of the more restricted claims were allowed. The rejection was made during conflict proceedings, but is taken under Section 42 of the Act, so that failure to appeal or to delete the rejected claims will lead to abandonment. The decisions on 490 and 492 relate to the other conflicting applications, and are essentially the same.

Final Rejection affirmed in part.

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This decision deals with a request for review by the Commissioner of Patents of the examiner's letter dated April 25, 1977, on application 248349 (Class 273-161). The application was filed on March 12, 1976, in the name of William E. Ardell et al, and is entitled "Ice Hockey Stick With Fibre Reinforced Handle." The Patent Appeal Board conducted a Hearing on June 21, 1978, at which Mr. R. Trudeau represented the applicant. Also present were three of the inventors viz. Messrs. W. Burchmore, L. Drolet and W. Ardell.

The application is directed to an ice hockey stick in which strips of reinforcing plastic material are embedded into the side surfaces of the wood core handle portion of the hockey stick. Figure 2, shown below, shows that arrangement:



This application is in conflict with two other applications. In the examiner's letter claims C1 to C15 were refused in view of the following patents:

Primary Reference Applied:

Finnish Patent

42,515

Apr. 30, 1970

Norvasto

Supporting References Applied:

Canadian Patent

286,234

Jan. 8, 1929

Purkis

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United States Patents

1,535,667

Apr. 28, 1925

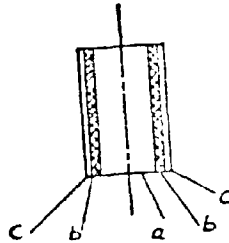
Horne

2,944,820

July 12, 1960

Paullus

The patent to Norvasto is the primary reference and is directed to an ice hockey stick in which strips of reinforcing plastic material are secured to the side surfaces of the wood core handle portion of the hockey stick. Figure 1 below shows that invention:



- a) represents the light wood core; b) the glass fibre plastic layers; and
- c) a wood veneer constituting the outer surfaces

The references to Purkis, Horne and Paullus were cited to show that the idea of embedding reinforcing strips within longitudinally cut grooves of the handle of game playing equipment is well known.

The Commissioner's letter, which was signed by the examiner, reads (in part):

Claims C1, C4, C5 and C10 stand rejected as anticipated by the Finnish patent to Norvasto. Norvasto overcomes the problems of cost and heavy weight of the so called glass fiber reinforced sticks of the prior art in which the lower part of the handle and the blade of a standard hardwood stick, were covered with a glass fiber fabric impregnated with an artificial resin "suited to the purpose". Norvasto achieves his objectives by (a) replacing the hardwood handle by a rectangular core of lightwood or equivalent material and by (b) cementing a layer of plastic reinforced with longitudinal glass fibers onto each of the two wide flat sides. Norvasto also adds an outer veneer of hardwood to cover the plastic layer and maintains the fibers in the blade portion oriented as uniformly as possible "in all directions". Thus Norvasto teaches all of the structure recited in claims C1, C4 and C5.

This reference also teaches that the reinforcements of the handle and the blade as being "fitted at the juncture of these parts to overlap so that the glass-fiber reinforced plastic layers are structurally continuous over the whole length of the stick".

Thus the overlap of the reinforcements recited in dependent claim C10 is also anticipated.

Claims C2, C3, C6 to C9 and C11 to C15 fail to distinguish in an unobvious sense from the patent to Norvasto and are rejected. Although the reference does not show the details of the way in which the glass fiber fabric is attached to the blade, the recitation of this as in the classical manner of "wound around" cannot be seen to distinguish the otherwise anticipated structure of claim C2 in a significant or unobvious way. Since the structure in dependent claim C3 is shown by this reference, this claim fails to further distinguish from the reference. Similarly the recitation of the core as "being made from a wood material selected from lower grade hardwood", which is the only distinction of claim C6 from the reference Finnish patent, does not impart patentability of this claim. Norvasto defines his core as "made of a comparatively light material such as E.G. wood, plastic or equivalent". In any case the use of hardwood in hockey sticks is classical and not unobvious. Norvasto also shows his strip of reinforcement to be embedded in each wide side of the handle. In view of this, claim C11 by specifying this strip as "embedded centrally" in each wide side surface of a handle component "made of hardwood" does not distinguish from this reference in a significant way. Further, since the concept of cementing rigid strips of reinforcing material in grooves cut longitudinally in the hafts of game bats is well known being shown in the patents to Purkis and Paulius and in the 1925 patent to Horne, the recital of such a groove in the dependent claims C7 and C12 and in the independent claim C14 does not add or define anything of an unobvious and patentable nature to the otherwise unpatentable structures. Except for this feature claim C14 is otherwise anticipated by the Finnish patent. Similarly whether the reinforcing filaments are glass fibers as taught by Norvasto and also recited in dependent claim C8 or graphite fibers as recited in dependent claim C9, or glass and graphite fibers as recited in dependent claims C13 and C15 is seen to involve merely an obvious matter of choice or elementary design. These claims, C8, C9, C13 and C15 do not add anything of an unobvious or inventive nature to the claims upon which they depend.

In response the applicant stated that there will be no attempt to defend claims C1 to C10. He did argue however that C11 to 15 "define an invention over the prior art...." He stated that claim C11 defines an ice hockey stick having inextensible reinforcement in strip form comprising longitudinally

aligned fibres embedded centrally in each wide side surface of the handle component. He also argued that in the Norvasto patent "a layer of reinforcement extends on each side of the hockey stick from the free end of the handle to the tip of the blade." He concluded by saying:

...

The applicants therefore submit that it is improper to combine the teaching of Norvasto, Paullus, Horne and Purkis and conclude that the structure defined by claim C12 does not amount to an invention. The better view, it is submitted, is that the applicants herein are the first to have conceived of an improved ice hockey stick that combines the necessary degree of handle rigidity and shank flexibility by reason of the fact that the handle component has on each side an inextensible rigid reinforcement of glass fiber material of rectangular cross-section received into a closely conforming groove in the handle component and flush with respect to the surrounding wood to which it is glued, and wherein the reinforcing strips terminate in the upper region of the shank, are of constant cross-section throughout the length of the handle and extend strictly parallel to each other throughout their extent. Such a hockey stick is new but also has all the attributes of an invention particularly when one has regard to the fact that such a reinforced composite hockey stick can be manufactured using conventional manufacturing equipment and tooling.

#### Claim C13

This claim depends upon claims C12 which in turn is dependent upon C11. The invention therein described is specified as having strips of glass-fiber material which is made of continuous strands of textile yarns comprising glass fibers and graphite fibers in a suitable binder. To the extent that claim C12 is patentable the applicants are believed to be entitled to claim C13 which specifies a preferred embodiment of the invention. It is not necessary at this state to argue whether claim C13 defines subject matter which is patentably different over claim C12.

#### Claim C14, C15

The prior art cited by the examiner fails to disclose reinforced hockey stick handles. Moreover this component which is essential to the applicants new method of construction for producing their new hockey stick is believed to be the most basic aspect of the present invention. It follows that a reinforced handle component as claimed in C14 for making hockey sticks in accordance with this invention must be a patentable invention since it is also a vendible product of obvious utility and apparent novelty, and since such a product is adequately disclosed in the present patent application.

The only consideration before the Board is whether or not C11 to C15 are directed to patentable subject matter.

At the Hearing Mr. Trudeau argued strongly that indeed claims C11 to C15 define patentable subject matter. An excellent demonstration was given at the Hearing by Mr. L. Drolet using hockey sticks or parts thereof to show that advance in the art and how the hockey sticks are produced. One feature in particular was stressed i.e. the absence of reinforcement in the middle or lower region of the shank. In other words the side reinforcing strips 60 and 62 extend from the upper free end of the handle component and terminates just above the shank.

We have studied the prosecution of this application and carefully read the disclosure. We find there a succinct description of the "absence of reinforcement" feature on page 9, line 2 f.f. , which reads:

When producing an ice hockey stick in accordance with the present invention, the basic piece of hardwood for making the handle component 12 is first provided with side grooves 50 and 52; the side reinforcing strips 60 and 62 are then glued in place, each strip extending from the upper free end 20 of the handle component 12 and terminating at least a short distance beyond the lower region of handle 18 which is illustrated at 22 in Figure 2, after which the rest of the operations are conventional, namely the addition of a small block 44, the provision of a slot in the heel portion of the assembly, followed with gluing of the blade component 16 into the heel portion 14, shaping of the lower portion of the hockey stick, followed by coarse sanding of the entire lower portion of the hockey stick. The coarse sanding operation which is designed to make the heel and blade portion thinner will also provide a gradual transverse tapering throughout the shank portion 24. Consequently, the lower portions of reinforcing strips 60 and 62 will also gradually taper from the lower region of handle 18 and will completely disappear at some point along shank 24, leaving the lower region of shank 24 without any reinforcement. The absence of reinforcement in the middle and lower region of shank 24 is a very desirable feature in that this lower portion of the hockey stick should be slightly more flexible than the handle 18 in order to absorb some of the shocks which otherwise would be directly transmitted to the arms of the hockey player and also to permit springing back of the blade portion 16 resulting in faster shooting. The position of the lowest extremity of reinforcing strips 60 and 62 as at 90 in Figure 2 will be determined by the depth of grooves 50 and 52 in the basic piece of wood used for making the handle, which depth should be constant, and by accurately controlling the coarse sanding operation of the lower region of the hockey stick.

At first blush the absence of reinforcement in the middle or lower region of the shank might appear as a small difference. At the Hearing we were assured that this difference created large and excellent results. For example, it made the hockey stick more flexible in order to absorb some of the shocks which otherwise would be directly transmitted to the arms of the hockey player, and also to permit springback of the blade portion resulting in faster shooting of the hockey puck. In any event it was stated in O'Cedar of Canada Ltd. v. Mallory Hardware Products Ltd. (1956) Ex. C.R. 299 at 317, that "The simplicity of a device is no proof that it was obvious and that inventive ingenuity was not required to produce it and, if small differences create large results, then the scintilla of inventiveness required by law is in fact present [emphasis added]."

We turn to the claims. Claim C11 reads:

An ice hockey stick comprising a handle component made of hardwood and defining a handle of rectangular, constant cross-section having four flat surfaces and an integrally formed shank extending from the lower end region of said handle, a blade secured to the lower end portion of said handle component, and an inextensible rigid reinforcement in strip form comprising longitudinally aligned fibres, embedded centrally in each wide side surface of said handle component extending throughout said handle and terminating in the upper region of said shank, said reinforcements being glued to the surrounding wood of said handle component, each reinforcement being of constant cross-section throughout the length of said handle and said reinforcements extending strictly parallel to each other throughout their extent.

This claim clearly defines the feature of "... an inextensible rigid reinforcement comprising in strip form longitudinally aligned fibres embedded centrally in each wide side surface of said handle component extending throughout said handle and terminating in the upper region of said shank [emphasis added]...."

This claim also indicates that the plastic reinforcing strip is made in a particular manner, i.e. the strip has longitudinally aligned fibres. In order to more particularly define the advance in the art however, the term "continuous" should precede the phrase "longitudinally aligned fibres...." While this seems like an unimportant feature, it was argued that it produced

excellent results. This claim, when amended to add "continuous" as noted above is, in our view, directed to patentable subject matter.

Claims C12 and C13, which depend directly or indirectly on C11, are also found allowable. The arguments for the allowance of claim 11, apply equally to them.

C14 reads:

A reinforced hockey stick handle made of hardwood having at least one longitudinal shallow groove extending along each wide side surface and a rigid thin strip of longitudinally extending fibres bonded together which is received in each groove, glued thereto and which terminates flush with the adjacent wide side surface, the tensile strength of said strip being considerably higher than that of said hardwood.

This claim neither has the restriction of the "continuous" longitudinally extending fibres, nor the reinforcement "... extending throughout said handle and terminating in the upper region of said shank..." recited therein.

The fact that the reinforcement is placed in a "shallow groove" is not considered a patentable advance in the art, because this feature is generally taught by the patents to Purkis, Horne and Paullus, albeit, not totally an analogous art, but in an allied art of sports equipment e.g. tennis rackets, base ball bats and golf clubs. This claim in our view does not define patentable subject matter. We recommend that this claim be refused.

Claim C15, which depends on C14, reads:

A reinforced hockey stick handle in accordance with claim 12, wherein said longitudinally extending fibres comprise glass fibres and graphite fibres.

This claim should also be refused, because the type of fibres, under the circumstances, does not lend patentability to the claimed combination which was refused in claim C14.

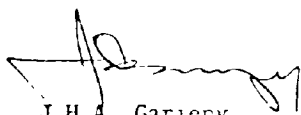
To summarize, claims C11 (when amended) C12 and C13 are found allowable and should be returned to the examiner, while claims C14 and C15 should be refused for the reasons stated.

The applicant is also advised that it was found that claims C6, C7, C8 and C9 are also directed to a patentable advance in the art and they will remain as conflict claims, but if the applicant does not wish to contest them it is his prerogative.



J.A. Hughes  
Assistant Chairman  
Patent Appeal Board, Canada

I have reviewed the prosecution of this application and I agree with the recommendations of the Patent Appeal Board. Accordingly, I refuse to grant a patent on claims C1 to C5, C10, C14 and C15, but I will accept claims C11 (when amended), C12 and C13. The applicant should note that while this rejection developed from prosecution under Section 45 of the Patent Act, the rejection itself is taken under Section 42 of the Act. Consequently failure to delete the rejected claims, or to appeal under Section 44 of the Act, will terminate the prosecution of this application.



J.H.A. Gariepy  
Commissioner of Patents

Dated at Hull, Quebec

this 8th. day of August, 1978

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