

COMMISSIONER'S DECISION SUMMARY

C.D. 1210 ....Application No. 531,558 (F01, O)

Application rejected as disclosing nothing of a  
patentable nature

The application disclosed thermoplastic end stops for slide fasteners the wings of which are fused to each other through the material used for constructing the fasteners. The application was rejected in view of three references. The Board recommended that the rejection be reversed since the references in the opinion of the Board did not justify a finding of either anticipation or obviousness in the case.

IN THE CANADIAN PATENT OFFICE

DECISION OF THE COMMISSIONER OF PATENTS

Patent application number 531,558, having been rejected under Subsection 47(2) of the Patent Rules, the Applicant asked that the Final Action of the Examiner be reviewed. The rejection has been considered by the Patent Appeal Board and by the Commissioner of Patents. The findings of the Board and the decision of the Commissioner are as follows:

Agent for the Applicant

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This decision deals with a request that the Commissioner of Patents review the Examiner's Final Action on patent application number 531,558 (Class 24-50) which was filed on March 10, 1987. The Applicant is YKK Corporation, assignee of inventors Naoki Kondo and Yoshinori Fujisaki and the invention is entitled "SLIDE FASTENER WITH THERMOPLASTIC END STOPS". The Examiner in charge issued a Final Action on May 10, 1993 rejecting the application for lack of invention in view of three references and the Applicant replied on November 10, 1993 requesting that the refusal be reviewed by the Commissioner of Patents.

The invention is directed to a slide fastener including an end stop made of a thermoplastic material which is allowed on melting by ultrasonic or high-frequency fusion to permeate the yarns of the fastener tape so that the confronting ends of the end stop are fused together through the tape leading to slide fasteners having improved properties.

In his Final Action the Examiner rejected the application for lack of invention in view of German Offenlegungsschrift number 2,309,624 to Schaaf, United States patent number 2,474,908 to Morin and United States patent number 4,155,147 to Akashi stating that:

The applicant's alleged invention is directed to slide fastener end stops made of a thermoplastic material which are applied to both sides of stringer tapes in such a manner that opposite confronting end portions of said stops are fused together through openings in the stringer tape. Compressive deformation of the tape during the fusion process enlarges the pores of the tape.

Schaaf teaches slide fasteners provided with end stops made of plastic material. Schaaf shows upper and lower wings of an end stop fused together through the stringer tape either by fusing through pressure and heat or through pressureless fusion.

The patent to Morin describes an end stop having a generally H-shaped cross section

The patent to Akashi describes end stops enveloping one end of a row of coupling elements

Applicant argues that in the cited references no attempt is made to compressively deform the stringer tape in order to enlarge the pores of the tape through which the thermoplastic material of the upper and lower wings may fuse more readily. Applicant further argues that in the prior art thermoplastic fibers in the tape melt and fuse together with the upper and lower wings during the fusion process without compressively deforming the stringer tape.

However, applicant's attention is directed to Schaaf which clearly shows a stringer tape made of non-fusible material and having a porous structure. Figure 8 of Schaaf shows upper and lower wings of coupling elements fused together through pores of a stringer tape. On page 8, second paragraph, Schaaf describes the compressive deformation of the stringer tape when during the fusion process the legs of the coupling elements are pressed flat thereby spreading apart the threads of the stringer tape so that the fusible material may flow between the threads. Figure 2 of Schaaf shows a coupling element fused into the tape with the leg ends penetrated into the stringer tape in a fluid or viscous state during the fusing process. As stated on page 7, second paragraph, the deformed leg ends are fused together through the stringer tape. The fusing process is described as being particularly suitable for carrier tapes made of porous fabric.

It is held that Schaaf explicitly describes upper and lower wings that are fused together through a porous stringer tape and a stringer tape that is compressively deformed thereby spreading the threads apart and enlarging the pores of the tape. Furthermore, it is held that the use of an end stop placed over coupling elements and the use of end stops having an H-shaped cross-section cannot be relied upon to add patentable significance to the claims because the two features are shown in Akashi and Morin. Therefore, it is concluded that the present application describes subject matter of no patentable nature.

In summary, the present application is rejected for lack of invention in view of Schaaf and common knowledge as presented in any one of the other cited references.

The question before the Board is therefore whether or not the invention claimed in claims 1 to 11 is anticipated and/or obvious in view of the cited prior art.

Claim 1 of the application which is representative of the present claims is as follows:

1 A slide fastener comprising:

(a) a pair of slide fastener stringers each having a stringer tape and a row of coupling elements mounted on and along an inner longitudinal edge of each stringer tape, said stringer tape having a porous structure,

(b) a slider slidably mounted on the two rows of coupling elements to take them into and out of interdigitating engagement with each other to close and open the slide fastener;

(c) an end stop of thermoplastic synthetic resin attached to at least one of said fastener stringer tapes adjacent to an end of said row of coupling elements to prevent said slider from leaving the coupling elements, said end stop including upper and lower wings disposed one on opposite faces of said one stringer tape; and

(d) said stringer tape including a compressively deformed thin portion having an enlarged pore size due to compressive deformation thereof, said wings having confronting one end portions disposed on said thin portion and fused together through enlarged pores in said thin portion.

In its response to the Final Action dated November 10, 1993 the Applicant argued against the rejection and submitted amended claims 1 to 10, claim 1 of which is shown below:

1. A slide fastener comprising:

(a) a pair of slide fastener stringers each having a stringer tape and a continuous row of coupling elements mounted by means of sewing yarns, on and along an inner longitudinal edge of each stringer tape, said stringer tape having a porous structure;

(b) a slider slidably mounted on the two rows of coupling elements to take them into and out of interdigitating engagement with each other to close and open the slide fastener,

(c) an end stop of thermoplastic synthetic resin attached to at least one of said fastener stringer tapes adjacent to an end of said row of coupling elements to prevent said slider from leaving the coupling elements, said end stop including upper and lower wings disposed one on opposite faces of said one stringer tape; and

(d) said stringer tape including a compressively deformed thin portion having an enlarged pore size due to compressive deformation thereof, of the sewing yarns and of the tape, said wings having confronting ~~one~~ first end portions disposed on said thin portion and fused together through enlarged pores in said thin portion.

[the changes from present claim 1 are indicated by words struck out or underlined].

The Applicant has argued that the amended claims overcome the objection to the application made by the Examiner in the Final Action. In Applicant's submission the invention is described in the following terms:

The present invention can be defined as a combination of features, including, *inter alia*, the following characteristics:

- (a) there is a continuous row of coupling elements;
- (b) the coupling elements are secured to a porous tape by sewing yarns (15);
- (c) the blank 18' envelopes, during the deforming action, the sewing yarns (15) together with the tape edge (14) when it is mounted on the tape;
- (d) this deforming action results in the spreading apart of individual yarns 11a of the tape;
- (e) the yarns run both longitudinally and transversely of the stringer tape.

In other words, the stitching (15) utilized for securement of the fastener elements to the tape improves the effect of the spreading apart of the yarns of the tape thus eliminating the need for special preparation of the tape by punching or even removing some of the yarns of the stringer tapes to facilitate the fusion of the free ends of the stop member.

It is the Applicant's position that the Schaaf reference is concerned solely with fasteners having individual fastener elements, not a continuous row of fasteners elements as in Applicant's invention, in fact stitched elements are described in the reference as disadvantageous. Furthermore the deformation of the tape shown in Figure 8 and described on page 8 of reference takes place only after the removal from the stringer tape of the yarns running longitudinally along the tape. In other words Schaaf requires a preliminary preparation of the tape prior to the compression and fusion process, i.e. a step not required in the manufacture of Applicant's fasteners.

As to the Akashi reference it is stated that, while Akashi is the only reference showing fastener elements secured to the tape by stitching, it does not show Applicant's feature of a stronger bond formed by the bonding of the free ends of an end member to each other through the tape itself. With respect to the Morin reference it is submitted that it merely shows metallic end stops attached to a stringer tape, a technology that has been known for many years. In Applicant's opinion therefore none of the references either alone or in combination render the amended claims obvious.

After detailed consideration of the references the Board agrees with the Applicant's position that they do not render the amended claims either anticipated or obvious. Thus the invention claimed

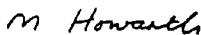
in the amended claims is not disclosed in any single one of the references as would be required for a finding of anticipation nor does any combination of the references in the opinion of the Board render the amended claims obvious. In making this finding of non-obviousness the Board has taken into account the judicial test for obviousness set forth in the Federal Court of Appeal decision in Beloit Canada Ltd. et al. v. Valmet Oy 8 C.P.R. (3d) 289, at page 294, to wit:

The test for obviousness is not to ask what competent inventors did or would have done to solve the problem. Inventors are by definition inventive. The classical touchstone for obviousness is the technician skilled in the art but having no scintilla of inventiveness or imagination; a paragon of deduction and dexterity, wholly devoid of intuition; a triumph of the left hemisphere over the right. The question to be asked is whether this mythical creature (the man in the Clapham omnibus of patent law) would, in the light of the state of the art and of common general knowledge as at the claimed date of invention, have come directly and without difficulty to the solution taught by the patent. It is a very difficult test to satisfy.

While the Board considers that the scintilla of invention in the present case may possibly be somewhat less than in other cases the Board nevertheless considers that it is sufficient to warrant the grant of a patent containing the amended claims. The Board therefore recommends that present claims 1 to 11 be replaced by amended claims 1 to 10 and that the application be returned to the Examiner for further prosecution consistent with the recommendation.



P.J. Davies  
Acting Chairman



M. Howarth  
Member

I concur with the recommendation of the Board and return the application to the Examiner for further prosecution consistent with the Board's recommendation.



S. Batchelor  
Commissioner of Patents

Dated at Hull, Quebec,  
this 19th day of November, 1996