Flexon (Pte) Ltd v Bean Innovations Pte Ltd and Another
[2000] SGHC 219

Case Number : Suit 1549/1999

Decision Date : 31 October 2000

Tribunal/Court : High Court

Coram : MPH Rubin J

Counsel Name(s) : Jupiter Kong and Penny Leng (Drew & Napier) for the plaintiffs; Wong Siew Hong and Michelle Tan (Yeo Wong & Thian) for the defendants

Parties : Flexon (Pte) Ltd — Bean Innovations Pte Ltd; Another

Patents and Inventions – Groundless threat – Claim for relief – Whether defendants had defence under s 77(4) – ss 77(1) & 77(4) Patents Act (Cap 221)

Patents and Inventions – Infringement – Construction of claims in specification of defendants' patent – Whether plaintiffs' device infringed defendants' patent

: The dispute in this action revolves around two letterbox mechanisms or devices, one belonging to the first defendants through an exclusive licence granted to them by their present managing director, the second defendant and the other belonging to the plaintiffs. The second defendant`s device is patented (Singapore Patent No 52288) (`the said patent`) and is called the `Mailbox Assembly with Lockable Delivery Flaps`. The plaintiffs` mechanism (referred to as the `Flexon system`) is described by them as `Master Door Letter Box with Aperture Central Locking`. Admittedly, there is a good market in Singapore particularly in the Housing & Development Board estates for such contraptions and consequently the plaintiffs and the defendants are locking horns over their respective devices.

The first defendants by virtue of the said patent threatened the plaintiffs with infringement proceedings. In the result, the plaintiffs commenced the present action against the first defendants for making groundless threats of infringement proceedings contrary to s 77 of the Patents Act (Cap 221) (`the Act`). The defendants for their part counterclaimed against the plaintiffs for the infringement of the said patent.

It is not in dispute that the second defendant is the registered proprietor of the said patent, registered in Singapore on 16 November 1998. The second defendant also has a corresponding United Kingdom Patent No GB 2, 289,500 for his invention. The invention, the court was told, is an apparatus for securing mailboxes against unwanted or junk mail and for preventing theft of legitimate mail.

Schematic drawings of the patented apparatus taken from figures 1 and 2 of the said patent appear in App 1 hereto.

For comparison, schematic drawings of the plaintiffs` Flexon system are reproduced in Appendix 2 hereto. [The Appendixes are not reproduced in this report - Ed.]

It is perhaps appropriate at this juncture to highlight the chief segments as well as the averments in the parties` respective pleadings.

In their statement of claim, the plaintiffs alleged that the defendants have by circulars, advertisements or otherwise threatened, inter alia, the plaintiffs with proceedings for infringement of a patent. The background and the particulars of threats furnished by the plaintiffs read as follows:

Paragraphs 2(1), (2) and (3) of the statement of claim:

(1) By a letter dated 28 September 1999, the defendants` solicitors M/s Yeo Wong & Thian wrote a letter to the plaintiffs, claiming that the defendants are the exclusive licensees of Singapore Patent No 52288. In the said letter, the defendants` solicitors threatened that the defendants would commence legal proceedings against the plaintiffs unless certain conditions were met, including payment of damages and costs to the defendants.

(2) By a letter of reply dated 15 October 1999, the plaintiffs` solicitors M/s Drew & Napier informed the defendants` solicitors that the plaintiffs` mailbox system does not infringe Singapore Patent No 52288. The defendants were asked to retract and withdraw the allegations made in their letter dated 28 September 1999.

(3) In a letter dated 18 October 1999 from the defendants` solicitors to the plaintiffs` solicitors, the defendants` solicitors repeated their earlier demands made in their letter of 28 September 1999, and again threatened infringement proceedings.

Alleging that they have suffered loss and damage as a result of the foregoing threats, the plaintiffs filed their present claim against the defendants, for a declaration that the threats of proceedings by the defendants were unjustifiable and for an injunction to restrain the defendants from issuing such threats.

The defendants by their defence disputed the validity of the plaintiffs` allegations and averred that the plaintiffs were not entitled to bring proceedings against the defendants since the alleged threats by the defendants, if any, fell within the scope of s 77(4) of the Act. In addition, the defendants by their counterclaim alleged that the plaintiffs had infringed their patent and prayed for an injunction and damages against the plaintiffs.

The defendants` version of the (plaintiffs`) alleged infringement require reproduction and they are as follows:

Paragraphs 6.1 and 6.2 of the amended counterclaim

6.1 Subsequent to the publication of the application in the United Kingdom on 22 November 1995, and also subsequent to the issue of the Certificate of Registration in Singapore on 16 November 1998 for the Singapore Patent, the plaintiffs have infringed the Singapore Patent and in particular, Claims 1, 3, 6 and 8 in the Specification of the Singapore Patent (`the Specification`).

6.2 Claims 1, 3, 6 and 8 of the Singapore Patent are as follows:

Claim 1

In a multiple slot mailbox having a plurality of individual mailboxes, said individual mailboxes each having at least one postman`s trap door on at least one open panel, said individual mailboxes each further having at least one User`s trap door on at least one open panel, an apparatus for preventing the unauthorized

access of the postman`s trap doors, said apparatus comprising:

a trap door stopper along the lower edge of each said postman`s trap doors for minimising the gap between the trap door stopper and the lower edge of said postman`s trap door, said trap door stopper further having a stopper portion for wedging the lower and outer edge of said trap door;

a matrix of orthogonal bars being placed in the interior of said mailbox and directly behind the postman`s trap door for wedging the lower and inner edge of said postman`s trap door against the inner surface of said stopper portion when said matrix of orthogonal bars is lowered, said matrix of orthogonal bars having at its top member at least one universal biasing bar running along the width of said multiple slot mailbox, said matrix of orthogonal bars further having as its horizontal members a plurality of parallel anti-junk mail bars, said matrix of orthogonal bars further having at its vertical members of plurality of parallel bars, said vertical bars having its upper end coupled to said universal biasing bar; and

at least one master lock being disposed on the upper front panel and below said universal biasing bar for raising and lowering said matrix of orthogonal bars,

whereby the postman`s trap doors can be released or closed simultaneously.

Claim 3

The apparatus in claim 1 wherein said vertical members of said matrix of orthogonal bars have equally spaced horizontal bores for allowing the said anti-junk mail bars to be coupled in substantially right angle with said vertical members of said matrix of orthogonal bars.

Clain 6

The apparatus in claim 1 wherein said master lock has at least one cam for raising the underside of universal biasing bar when said master lock is opened.

Claim 8

An apparatus for securing mailboxes substantially as hereinbefore described with reference to or as shown in the accompanying drawings.

Further details provided by the defendants read as follows:

Paragraphs 6.3 and 6.4 of the amended countercaim:

Claim 1

6.3	(i)	By making prototypes of, manufacturing, supplying, delivering installing, selling and/or offering for sale mail boxes with lockable delivery flaps containing the essential features of Claim 1 to Lip Guan Construction Pte Ltd; and/or	
	(ii)	By delivering and installing or threatening to deliver and/or install mail boxes with lockable delivery flaps containing the essential features of Claim 1 in the following areas:	
		(a)	Ang Mo Kio Avenue 4, Blk 170 to 176; and
		(b)	Yishun Ring Road, Blk 731 to 736.
Claim 3			
	(i)	By making prototypes of, manufacturing, supplying, delivering, installing, selling and/or offering for sale mail boxes with lockable delivery flaps containing the essential features of Claim 3 to Lip Guan Construction Pte Ltd; and/or	
	(ii)	By delivering and installing or threatening to deliver and/or install mail boxes with lockable delivery flaps containing the essential features of Claim 8 in the following areas:	
		(a)	Ang Mo Kio Avenue 4, Blk 170 to 176; and
		(b)	Yishun Ring Road, Blk 731 to 736.

6.4	The plaintiffs well knew at all material times and further or in the alternative the defendants will say it was obvious to a reasonable person in the circumstances that the making of prototypes of manufacturing, supplying, delivering, installing, selling and/or offering for sale of the aforesaid mail boxes with lockable delivery flaps in Singapore without the defendants` consent would be an infringement of the Singapore Patent.	
	Particulars of knowledge	
	(a)	The second defendant had in or around September 1994 displayed and demonstrated a prototype of the Invention to the Tanjong Pagar Town Council.
	(b)	Since mid-1995, approximately 8,000 mail boxes which are reproductions of the Invention have been installed in seven upgrading projects.
	(c)	The said mail boxes contained `Patent-pending` or `Patented` stickers.
	(d)	On or about 1 September 1996 and 25 August 1997, the second defendant appeared in television programmes entitled `Hey Singapore` and `Stroke of Genius` respectively, giving a demonstration of the way the invention worked.
	(e)	The first defendants have, through their solicitors` letter dated 28 September 1999, informed the plaintiffs of their proprietary rights in the Singapore Patent and the invention.
	(f)	Prior to discovery and/or interrogatories herein, the defendants rely on the particulars of knowledge set out herein. The defendants shall seek to rely on other matters discovered during discovery and/or interrogatories.

In their amended reply and defence to counterclaim, the plaintiffs whilst maintaining their averments in their statement of claim, stated that the defendants` solicitors` letter dated 28 September 1999 and 18 October 1999 constituted threats of infringement proceedings that were unjustified, and denied that the defendants were entitled to rely on s 77(4) of the Act.

Although the plaintiffs admitted to having manufactured, supplied, delivered, sold, offered to sell and made prototypes of mailboxes with lockable delivery flaps to one Lip Guan Construction Pte Ltd and install such mailboxes in a few places in Singapore, they denied that their product infringed the defendants` Singapore Patent No 52288. They also contended that even if, which was denied, they were found to have infringed the said patent, such an infringement was innocent as the plaintiffs were not aware of the existence of the said patent nor did they have reasonable grounds for supposing that the said patent existed.

Evidence

The plaintiffs produced three witnesses. The evidence adduced by their managing director Mr Michael Ge Siew Ching can be summarised as follows.

The plaintiffs were incorporated in 1975 and had been involved in the manufacture of fabricated metal products. They also manufacture letter boxes and supply them to private condominiums and the HDB in Singapore for over ten years. They have their own design and development team of about seven persons with relevant technical qualifications and experience to cater for market needs.

Various types of designs for letter boxes were developed through the years. In 1997, a central locking system for letter boxes was growing in demand. The plaintiffs` customers started requesting the plaintiffs to supply them with letter boxes with a central locking system. Thus the plaintiffs started looking into designing letter boxes with such a central locking system.

Mr Ge added that the benefit of such letter boxes was that the trap doors of the letter boxes could be locked by the Town Council using a central locking key. When mail was delivered, the device would be unlocked. After delivery, the device would be locked so that the trap doors would not open, preventing others from inserting junkmail into the letter boxes.

Consequently, instructions were given to a team of design engineers specialising in metal parts and automation to study the various methods of incorporating the central locking system into the plaintiffs` letter boxes. Mr Yip Lam Keong headed this team of design engineers.

The plaintiffs` design team considered various design alternatives. Amongst them were the following:

1 The first design was a `turning system for locking` device.

2 The second design was a `parallel bar` design.

3 The third design was a `lever system` which was ultimately chosen by the plaintiffs.

Inciidentally, in or about January 1998, the plaintiffs came across drawings given to them by a customer relating to a `Lockable Aperture Within Master Door System With Overriding Features`, with indications on the said drawings that a patent may be pending on behalf of one Ishida Innovations Pte

Ltd (`Ishida`). Since the drawings appeared to relate to a central locking system, the plaintiffs were concerned whether a patent, if any, was granted for the device in Singapore.

On or about 13 April 1998, the plaintiffs instructed their solicitors Drew & Napier to carry out a patent search on the said product by Ishida. No relevant patent was found in Singapore based upon a search on patents filed by Ishida.

On 5 May 1998, the plaintiffs instructed Drew & Napier to send a letter to Ishida, requesting information concerning the possible patent. The plaintiffs` solicitors were then instructed to state that they were acting for one Elpan Holdings Pte Ltd, whose owner was an accountant doing the plaintiffs` accounts. The reason behind getting the plaintiffs` lawyers to state that they were acting for Elpan Holdings Pte Ltd was that the plaintiffs did not want the market and Ishida to know that the plaintiffs were working on letter boxes incorporating the central locking system. However, no reply was forthcoming from Ishida.

A further letter dated 20 May 1998 was sent to Mr Hanry Tan of Ishida, making the same request regarding the said patent. Again no reply was received from Ishida.

Sometime in June 1999, the plaintiffs received enquiries from one Mui Leong Development & Construction Pte Ltd and one Lip Guan Construction Pte Ltd for the sale of the plaintiffs` said letter boxes. In the event, the first lot of the plaintiffs` letter boxes was installed at Lip Guan Construction`s project Block 731 Yishun Ring Road on 21 December 1999.

On 28 September 1999, the plaintiffs received a letter from Yeo Wu & Thian solicitors acting for the defendants informing the plaintiffs that the defendants were the exclusive licensees of the patent referred to and threatening legal proceedings for infringement. Insofar as material, the said letter requires reproduction and reads as follows:

> *Letter from M/s Yeo Wu & Thian to the plaintiffs dated 28 September 1999*
>
> *Patent No 52288*
>
> *Claim by Bean Innovations Pte Ltd for Patent Infringement*
>
> *We act for Bean Innovation Pte Ltd. Our clients are the exclusive licensees of Singapore Patent No 52288. A copy of the Certificate of Grant of Patent is enclosed for your attention.*
>
> *We have been instructed that you have recently made prototypes of manufactured, supplied, delivered, installed, sold and/or offered to sell, mailbox systems which fall within the claims of our clients` patent, in particular, supply of the mailbox systems to:*
>
> *1 Ang Mo Kio Ave 4, Blk 170 to 176; and*
>
> *2 Yishun Ring Road, Blk 731 to 736.*
>
> *You have thereby infringed our clients` patent and our clients have suffered damages as a result therefrom. Our clients hereby expressly reserve their*

rights thereof.

We are instructed by our clients that in the interest of goodwill and on a strictly without prejudice basis, our clients are prepared not to commence legal proceedings against you for patent infringement on condition that you:

1 immediately cease making of prototypes of manufacturing, supplying, delivering, installing, selling and/or offering to sell the said mailbox systems and any mailbox system the manufacture and use of which would infringe our clients` patent;

2 execute a written undertaking in the form enclosed within one (1) week from the date hereof;

3 deliver up to our clients for their disposal within thirty (30) days of the undertaking annexed herein:

(a) all mailbox systems as well as drawings and designs of the said mailbox systems in your possession, custody or power the manufacture and use of which infringe our clients` patent;

(b) all advertising, promotional or marketing materials in your possession, custody or power whereby such mailbox systems are advertised, promoted or marketed;

4 pay our clients damages of $150,000;

5 pay our clients costs of $15,000; and

6 publish an apology in the Straits Times (the form, wording and size whereof shall be determined by us) for infringing our clients` patent.

Take notice that unless we have your written confirmation within one (1) week from the date hereof, we have firm instructions from our clients to take all necessary actions against you including commencing legal proceedings and application for an injunction restraining you from further infringing our clients` patent.

All our clients` rights are hereby reserved.

Following legal advice, the plaintiffs instituted legal proceedings under s 77 of the Patents Act (Cap 221) against the defendants for making groundless threats of legal proceedings.

The plaintiffs` next witness was their technical director, Mr Yip Lam Keong. His evidence was to the following effect.

Sometime in 1998 he was asked by the plaintiffs` managing director Mr Michael Ge to design a letter box incorporating a single key central locking system to deal with junk mail and in the result he and

his designer arrived at three possible designs. He then went on to explain the three designs as follows.

The first design was a `turning system for locking` device. Letter boxes with such a device would use a single key to operate flaps installed by the side of the locking system, controlled by a vertical rod. When the flaps are wedged against the trap door, the flaps prevent the trap door from being pushed open. When the key is turned, the vertical rod will rotate, thereby moving the flaps inwards towards the trap door. To enable the trap door to be opened, the key is turned in the reverse direction which then rotates the vertical rod in the opposite direction, un-wedging the flap, thereby leaving the trap door free to be pushed open. However, a major disadvantage of this system is that with a substantial amount of force, the flap wedged against the trap door can be forced aside, thereby opening the trap door.

The second design was a `parallel bar` design. This is the design being claimed in the defendants` Patent No 52288. However, at that time, Mr Yip had no knowledge that the defendants had filed a patent for letter boxes using the `parallel bar` design. Letter boxes with the `parallel bar` design also use a single key to open and close all the trap doors. The horizontal bars rely on the force of gravity to wedge the trap door. However, since there is a matrix of bars, it results in the locking mechanism becoming heavy, and a great turning load placed on that one key. The turning load is greater if the boxes are made of stronger and heavier material, such as stainless steel.

At the time of development of the plaintiffs` design, the `parallel bar` design was not considered suitable because it was found to be not practical since too much weight was being placed on a single key. Also, the `parallel bar` design was found unsuitable for side-opening letter boxes. Since bottom-opening letter boxes as shown in the patent are obsolete, the `parallel bar` design would not have been suitable for the market.

The third design was a `lever system` designed to reduce the lifting load on the single key. Because the aim was to achieve a lighter system, the plaintiffs then came up with the idea of dividing the turning force on the key between two or three rows of letterboxes. In this way, since not all flaps open and close simultaneously, the turning load on the key is correspondingly reduced.

The plaintiffs` letter box uses the concept based on the `lever system`. Upon turning the key to lock the delivery flap, a pin on the delivery flap lock pushes the lever upwards. The vertical bar which is attached to the lever will move upwards in tandem with the lever. In the up-most position, all the stopper screws along the vertical bar will be directly behind the delivery flaps, thereby locking them in position. Upon turning the key in the opposite direction, the lever will push the vertical bar downwards, thereby causing the stopper screws to move away from the delivery flaps. The delivery flaps will then be free to be pushed open.

Upon being asked by Mr Michael Ge whether it would be possible for the letterbox holder to have the option of receiving junk mail, Mr Yip and his team then came up with the idea of using removable studs on the tracking system which gave the letterbox holder an option. If the user wanted to receive junk mail he could easily unscrew the stud and screw it into another slot provided in the system. Mr Yip`s table which sets out the differences between the plaintiffs` (Flexon) mail box with lockable delivery flap and the defendants` patented device appears below:

Differences between Flexon mail box with lockable delivery flap and patent P-No 52288

Plaintiffs` Flexon design	Defendants` Patent No 52288 design	
1	A pinlock is used to actuate the locking	Uses a cam lock
2	This pin is nested in center of a slot on a lever	Cam rests below a universal biasing bar
3	Lever raises and lowers two or three vertical bars depending on number of rows of letter boxes	Universal biasing bar raises and lowers matrix of orthogonal bars
4	Lever raises and lowers one set of vertical bar first followed by the second set	Universal biasing bar raises and lowers matrix of Orthogonal bar at one go
5	Vertical bars are raised and lowered using positive action	Orthogonal bars are lowered by force of gravity
6	Stopper pins to prevent delivery flap from moving inwards	Multiple parallel anti junk mail bars to wedge flap
7	Stopper pins stop flap from moving	Uses wedge action
8	Option to receive junk mail	No option to receive junk mail

Mr Yip added that it took more than a month to complete the sketch and construction of the prototype which consisted of a basic framework of a lever and two vertical rods. The next step was to come up with a way to fit the mechanism within the square tube frame of the letter box. It took another one and a half to two months to complete it. Sometime in July 1999, the team finally completed all tools, dies and jigs and came up with the final product which was titled Master Door Letter Box with Aperture Central Locking. Mr Yip added that the plaintiffs did not have any access to the defendants` patent specifications during the process of their own design.

Plaintiffs` expert

Dr Khong Poh Wah an Associate Professor of the School of Mechanical and Production Engineering, Nanyang Technological University of Singapore, gave expert evidence on behalf of the plaintiffs.

In his evidence, Dr Khong said that upon being engaged by the plaintiffs` solicitors, he compared the claims of the defendants` Singapore Patent No 52288 and the plaintiffs` design and prepared a report.

He added that his technical evaluation focussed on claim 1 of the said patent, that being the broadest claim. In his view, if the features of claim 1 were not present in the plaintiffs` design, the other claims (which claim other features in addition to claim 1) would not be relevant. His conclusions were asfollows:

Line No	In Claim 1	Differences	Remarks

Page 10 line 7 to 11	A trap door stopper along the lower edge of each said postman`s trap doors for minimising the gap between the trap door stopper and the lower edge of said postman`s trap door, said trap door stopper further having a stopper portion for wedging the lower and outer edge of said trap door.	Yes	Flexon`s system does not have a trap door stopper. The trap door rests on the mailbox door on one side and is blocked from swinging inwards on the other side by the stopper screws. There is no `wedging` action.
Page 10 line 12 to 15	A matrix of orthogonal bars being placed in the interior of said mailbox and directly behind the postman`s trap door for wedging the lower and inner edge of said postman`s trap door against the inner surface of said stopper portion when said matrix of orthogonal bars is lowered.	Yes	Matrix of orthogonal bars does not appear in the Flexon`s system. Flexon`s system uses stopper screws and not orthogonal bars (`Orthogonal` means `lying or intersecting at right angles`. There is no intersection of vertical and horizontal bars as in the patent). The mechanism and mode of actions in Flexon`s system are also

			different from that in the said Singapore Patent No 52288. In Flexon`s system, the stopper screws block the corner of the trap door upon the raising of the Bar-Linkage.
Page 10 line 15 to 21	Said matrix of orthogonal bars having as its top member at least one universal biasing bar running along the width of said multiple slot mailbox, said matrix of orthogonal bars further having as its horizontal members a plurality of parallel anti-junk mail bars, said matrix of orthogonal bars further having at its vertical members a plurality of parallel bars, said vertical bars having its upper end coupled to said universal biasing bar, and	Yes	Flexon`s system does not have a universal biasing bar running along the whole Width of the said multiple slot mailbox, which is necessary in the said patent. The Bar Linkage mechanism (Flexon`s system) does not require the presence of anti-junk mail bar. By inspection, the anti-junk mail bars are not found in Flexon`s system.

Page 10 line 22 to 26	At least one master lock being disposed on the upper front panel and below said universal biasing bar for raising and lowering said matrix of orthogonal bars, whereby the postman`s trap doors can be released or closed simultaneously.	Yes	Flexon`s lever cum bar-linkage system does not have the raising and lowering actions being generated below the said universal biasing bar. In order for the Flexon`s system to function properly, the lock cam has to be placed within a slot in the body of the horizontal biasing bar. Also, not all postman`s trap doors can be released or closed simultaneously in a one key turning operation. Only some trap doors are released or closed with each 90-degree turn of the key.

Defendant`s expert

The defendant produced only one witness who was their expert. For some reason, the second defendant, their managing director as well as their purported principal witness who had filed his affidavit of evidence-in-chief did not avail himself to be a witness despite reference to his said affidavit in the defendants` opening address. Consequently, his affidavit of evidence-in-chief was deemed withdrawn and not admitted in evidence. The only witness the defendants called was their expert, Dr Chew Chye Heng an Associate Professor from the Department of Mechanical and Production Engineering, National University of Singapore. He said in his affidavit of evidence-in-chief that he was engaged by the defendants to review and comment on whether there had been an infringement of the defendants` Singapore patent by the plaintiffs. His report was too long to be entered upon here and it would suffice if I reproduce what he said in Part IV of his report under the heading: Comparison with claim 1 of the patent claim.

Dr Chew`s comparison

The integers are recited in Claim 1 of the patent, using numeric annotation, are set out in the left hand column of the table shown below, After each integer, the corresponding element of the Flexon product, using alphabet annotations which are shown on the Flexon drawing, are indicated as well. Fig 1 shows the drawing of the mailbox assembly from Singapore Patent No SG 52288 while Fig 2 shows the Flexon drawing. Points concerning the interpretation of the claim are set out in the right hand column. The features of the claim to which the comments relate are highlighted:

In a multiple slot mailbox (5, A) having a plurality of individual mailboxes (30, B, B`), said individual mailboxes (30, B, B`) each having at least one postman`s trap door (35, C, C`) on at least one open panel	I believe the words `open panel` here refers to the user`s trap door which can be opened by the user.
Said individual mailboxes each further having at least one user`s trap door (45, D, D`) on at least one open panel an apparatus for preventing the unauthorised access of the postman`s trap door (35, C, C`), said apparatus comprising: a trap door stopper (40, F, F`)	Same comment as aboveThe trap door stopper as mentioned in Claim 1 is the same as the Flange 3 mentioned earlier in the report.
Along the lower edge of each postman`s trap doors	This should be `door`
For minimising the gap between the trap door stopper and the lower edge of the said postman`s trap door, said trap door stopper further having a	The `stopper portion` would appear to be the element (F, F`) and is referred to as the Flange 3 in the report.
stopper portion for wedging the lower and outer edge of said trap door;	`Wedging` - see below
A matrix of orthogonal bars (60, 18, 24, 58, G, H, I)	A matrix is a rectangular array and `orthogonal` means 90 degrees to one another. The
	arrangement of bars (G, H, I) are orthogonal and
	can be said to be in a form of a rectangular array.
Being placed in the interior of said mailbox and directly behind the	The reference to `wedging` here and above is not strictly speaking correct. In the Flexon design, the movement
postman`s trap door for wedging the lower and inner edge of postman`s trap door against the inner surface of said stopper portion	of the orthogonal bars (G, H, I)places the bars (H) directly behind the postman`s trap door, thereby preventing it from being opened from outside.
	This is exactly the same method of operation of the described embodiment of the invention. As such, a reasonable interpretation of `wedge` to me is `to hold in place` as this term is used in the patent.
when said matrix of orthogonal bars is lowered	The `wedging` occurs when the array is raised, not lowered
said matrix of orthogonal bars having as its top member at least one universal biasing bar (60,I) running along the width of said multiple slot mailbox, said matrix of orthogonal bars (60, 18, 24, 58, G, H, I) further having as its horizontal members a plurality of parallel anti-junk mail bars (58, H).	The bars (H) in the Flexon product, while parallel do not extend fully across the matrix, but this is not a positive requirement of the claim. Whether the bars (H) extend fully across the matrix or not, both configurations achieve the same result of preventing the postman`s trap door from being opened from outside.

said matrix of orthogonal bars a further having as its verical members a plurality of parallel bars (G)	Vertical misspelt
said vertical bars having its upper end coupled to said universal biasing bar; and at least one master lock (26, J) being disposed on the upper front panel and below said universal biasing bar for raising and lowering said matrix of orthogonal bars	This should read as `each vertical bar having ...`, but the meaning is clear. `The upper front panel` is not defined earlier in the claim but it does appear that the master lock (J) of the Flexon product is disposed on an upper front panel (K). However, the lock is not disposed below the universal biasing bar
Whereby the postman`s trap doors (35, C, C`) can be released or closed simultaneously	

Dr Chew then went on to state that he believed that there were four matters which required particular consideration and these were:

(1) Whether the combination of trap door stopper and matrix of orthogonal bars in Flexon can be said to wedge the lower and inner edge of the postman`s trap door.

(2) If, despite it being stated in the claim that the `wedging` occurs when the array is lowered, the claims covers this effect when the array is raised, as in Flexon.

(3) Whether the fact that the horizontal bars do not extend fully across the matrix is sufficient for the Flexon arrangement to be termed `a matrix of orthogonal bars` and, furthermore, if the bars (H) can be termed `a plurality of parallel anti-junk mail bars`.

(4) If, despite it being stated in the claim that the master lock must be below the universal biasing bar, the claims covers an arrangement as in Flexon where the lock is not below the bar.

After touching upon the doctrine of `purposive construction` propounded in the House of Lords decision of **Catnic Components Ltd & Anor v Hill & Smith Ltd** [1982] RPC 183 (which will be dealt with later in these grounds), he set out his opinions in regard to the foregoing items (1 to 4) as follows:

> *(1) Concerning the meaning of the term `wedging`, I would firstly note that described embodiment in SG 52288 performs a function of preventing the opening of the postman`s trap door by blocking or holding in place, rather than wedging in the true sense. The mechanism employed in the Flexon product performs the same function in the same way, ie by preventing the opening of the postman`s trap door, I would, therefore, not even consider the Flexon Product to be a variant in the first place. Rather, I am of the view that the chosen claim language, while not being technically precise, was clearly meant to have a meaning which would cover the described embodiment and thus the Flexon product.*
>
> *(2) In the Flexon product, the postman`s trap door is wedged when the matrix of orthogonal bars is raised (not lowered). This variant would not appear to have any effect on the way the invention works. The stopper must be movable between a position in which the postman`s trap door is locked and one which is not locked. It is not material whether this occurs in a raised position or a lowered position, provided there is a* ***relative*** *movement. It would be clear to*

me that this was so at 16 November 1998. I do not consider that the feature of the orthogonal bars being lowered to be one whch is so essential that strict compliance with the primary meaning of :lowered` is an essential requirement of the invention, provided there was a relative movement.

(3) I consider the horizontal links (H) to be a plurality of parallel anti-junk mail bars. I further consider that the horizontal links (H) to form the horizontal elements of `a matrix of orthogonal bars`. Clearly the horizontal links are orthogonal to the vertical links (G) which in turn are guided to move vertically. Furthermore, as the definition of a matrix is a `rectangular array`, I consider that there is no requirement for the horizontal links (H) to extend from one vertical link (G) to the next, since the basic `matrix` structure already exists.

(4) In the Flexon product the master lock is not disposed below the universal biasing bar but, rather, a slot is provided in the universal biasing bar through which a cam member of the lock protrudes. It is clear, firstly, that this variant does not have any material effect on the way the invention works. It would also be clear to me that, at the date of publication of the patent (16 November 1998) that this was so. Furthermore, I can see nothing in the language of the claim that would lead me to understand that the patentee intended that strict compliance with the primary meaning of `below` was an essential requirement of the invention. On the contrary, the position of the master lock relative to the universal biasing bar seems to me to be quite immaterial to the invention.

In his conclusion, Dr Chew said that in the analysis and comparison of both designs, the engineering principles and mechanics involved in the locking and unlocking of the `postman`s trap doors` in both were similar. Locking and unlocking of the postman`s trap doors were achieved by the turning of a master lock which in turn caused the relative vertical movement of the vertical links. He added that in both designs, locking links placed directly behind the postman`s trap doors prevented the said trap doors from being opened from the outside while in the locked condition. A flange between the postman`s trap door and the `user`s trap door` in each individual mailbox is also incorporated in both designs to deny access through the postman`s trap door to mail deposited into the individual mailbox.

It must be presently remarked that the photographs of the defendants` device exhibited by them did not appear to be those originally manufactured and marketed by the defendants. The defendants` products were found to be an improved or modified version of the device somewhat similar to the device of the plaintiffs. I shall return to this aspect later in these grounds.

Issues for determination

The issues for determination as formulated by counsel are:

(1) whether the plaintiffs are entitled to institute an action under s 77 of the Act against the defendants for making reportedly groundless threats of infringement proceedings against the plaintiffs;

(2) whether the plaintiffs have infringed the defendants` Singapore Patent No 5228; and

(3) Even if the plaintiffs have infringed the said patent, whether they are entitled to the defence of

innocence under s 69 of the Act, in the result that the defendants would not be entitled to either damages or to an account of profits.

Issue 1

Are the plaintiffs entitled to institute an action under s 77 of the Act?

It is useful to refer now to s 77 of the Act which provides as follows:

> *(1) Where a person (whether or not the proprietor of, or entitled to any right in, a patent) by circulars, advertisements or otherwise threatens another person with proceedings for any infringement of a patent, a person aggrieved by the threats (whether or not he is the person to whom the threats are made) may, subject to subsection (4), bring proceedings in the court against the person making the threats, claiming any relief mentioned in subsection (3).*
>
> *(2) In any such proceedings, the plaintiff shall, if he proves that the threats were so made and satisfies the court that he is a person aggrieved by them, be entitled to the relief claimed unless -*
>
> *(a) the defendant proves that the acts in respect of which proceedings were threatened constitute or, if done, would constitute an infringement of a patent; and*
>
> *(b) the patent alleged to be infringed is not shown by the plaintiff to be invalid in a relevant respect.*
>
> *(3) The said relief is -*
>
> *(a) a declaration to the effect that the threats are unjustifiable;*
>
> *(b) an injunction against the continuance of the threats; and*
>
> *(c) damages in respect of any loss which the plaintiff has sustained by the threats.*
>
> *(4) Proceedings may not be brought under this section for a threat to bring proceedings for an infringement alleged to consist of making or importing a product for disposal or of using a process.*
>
> *(5) It is hereby declared that a mere notification of the existence of a patent does not constitute a threat of proceedings within the meaning of this section.*
>
> *(6) Nothing in this section shall render an advocate and solicitor or any other person liable to an action under this section in respect of an act done by the advocate and solicitor or the other person in his professional capacity on behalf of a client.*

It is necessary at this stage to revisit a few segments in the letter dated 28 September 1999 sent out by the defendants addressed to the plaintiffs. It reads:

> *We have been instructed that you have recently made prototypes of, manufactured, supplied, delivered, installed, sold and/or offered to sell, mailbox systems which fall within the claims of our clients` patent ... You have thereby infringed our clients` patent and our clients have suffered damages as a result therefrom ... We are instructed by our clients that in the interest of goodwill and on a strictly without prejudice basis, our clients are prepared not to commence legal proceedings against you for patent infringement on condition that you*
>
> *1 immediately cease making of prototypes of, manufacturing, supplying, delivering, installing, selling and/or offering to sell the said mailbox systems and any mailbox system the manufacture and use of which would infringe our clients` patent ... .*

What would constitute a threat within the framework of s 77 of the Act (pari materia to s 70 of the Patents Act 1949 UK) was considered by Aldous J in **Bowden Controls Ltd v Acco Cable Controls Ltd & Anor** [1990] RPC 427 where he seemed to have endorsed an approach considered appropriate by Clauson J, with which I agree, in **Luna Advertising Co Ltd v Burnham & Co** [1928] 45 RPC 258 at 260 which was to look at the letter (which was said to contain the reported threats) through the eyes of a reasonable and normal recipient and thereafter decide whether indeed there could be a reasonable argument that the said letter would be understood as a threat of patent proceedings (see p 431 lines 46 to 50, supra). However, defendants` counsel whilst not disputing that threats of infringement were indeed contained in their said letter, argued that the said threats nevertheless were not actionable because of the exception provided for under s 77(4) of the Act.

Section 77(4) of the Act in turn provides that `proceedings may not be brought under this section for a threat to bring proceedings for an infringement alleged to consist of making or importing a product for disposal or of using a process`. The argument advanced on behalf of the defendants based on this subsection is that because the plaintiffs are the makers of the allegedly infringing products, no action can be instituted by them under s 77(1) of the Act.

It was argued by the defendants that although the words in s 77(4) of the Act do not include supplying, delivering, installing, selling and/or offering to sell, these activities are ejusdem generis and are logical adjuncts to the meaning of the word `disposal`.

The learned authors of ***Terrell on the Law of Patents*** (1994 Ed) express their view at p 354 that this subsection (sub-s 1 to s 70 of the Patents Act 1949 UK similar in content to that of s 77(1) of the Act) purports that threats in respect of making and importing products and using processes are permitted but threats (even to a manufacture) in respect of other infringing acts (eg selling) are actionable. This view is supported by the following observations of Oliver LJ in **Therm-A-Stor Ltd v Weatherseal Windows Ltd** [1981] FSR 579 at 594:

> *The word `product` is a perfectly general word apt to describe any article and there is nothing in sub-s (4) of s 70 which indicates an intention to confine it to a product which is itself the subject-matter of a patent. The intention of the legislature seems to have been to enable a person, whether a patentee or not,*

> *to threaten infringement proceedings with impunity under either sub-ss (1) or (2) of s 60 where what is complained of as infringement is the making of a product for disposal. ...*

The authors of ***Terrell on the Law of Patents*** further say at p 354 that the contrary view that the subsection means manufacturers and importers of products and users of processes may be threatened with impunity has been advanced for example in **Bowden Controls Ltd v Acco Cable Controls Ltd** [1990] RPC 427 and J **ohnson Electric Industrial Manufactory Ltd v Mabuchi-Motor KK** [1986] FSR 280 but this view is not the natural meaning of the words of the subsection.

Having regard to the learning referred to it, it is also my view that the phraseology of s 77(4) does not avail a defence to anyone if the threats were in respect of supplying, delivering, installing, selling and or offering to sell a product in this case, mailbox systems. In this connection, my attention was invited by plaintiffs` counsel to the case of **Cavity Trays Ltd v RMC Panel Products Ltd** [1996] RPC 361. In that case threat was in respect of acts of manufacturing, promotion, marketing, advertisement and sale of the alleged infringing articles. The Court of Appeal in England held that the purpose of s 70(4) of the UK Act was to enable a person to warn off primary infringers without fear of being sued for threats. It was held in that case that threats relating to promotion, marketing and sale were not excluded by s 70(4) of the UK Act. The wordings of s 70(4) of the UK Act and s 77(4) of the Singapore Act are the same.

The principles in ***Cavity Trays*** were followed by Laddie J in **Brain v Ingledew Brown Bennison &Garrett (No 3)** [1997] FSR 511 where he said at p 525:

> *s 70(4) excludes from the generality of the prohibition of s 70(1), threats in relation to certain types of infringement. ...*

Later at the same page he added that

> *Although s 70(4) allows a patentee to issue threats in respect of use of a process, it does not permit threats to be made in respect of offering a process for use ... which is a separately identified category of infringement prescribed by s 60(1) of ... If therefore ... the threat goes beyond threatening anyone for the use of the patented process, goes it is actionable.*

As observed by me earlier, viewing the threat letter as it is phrased, the threats as respects supplying, delivering, installing, selling and or offering to sell the mailbox systems are indeed actionable. Under s 77(1) and (2) of the Act, once the plaintiffs have established as in this case they have indeed done so that an actionable threat has been made and satisfied the court that they are persons aggrieved by it, they are entitled to the relief claimed unless the defendants prove that the acts in respect of which proceedings were threatened constitute or if done would contribute an infringement of a patent. In this regard s 77(2) makes it clear that the burden is on the defendants to prove the act of infringement of the patent.

The infringement issue

The next issue to be addressed is whether the plaintiffs have infringed the said patent.

This issue largely plays itself around claim 1 of the patent. It was common ground between the parties that if the features of Claim 1 were not present in the plaintiffs` design, the other claims would not matter. The defendants` counsel was forthright when he accepted the position that there had been no literal infringement of the language of claim 1 or for that matter others. He, however submitted that the absence of literal infringement does not put paid to their clients` patent rights and contended for the view that the court should adopt a purposive approach which in his submission would lead to the conclusion that the patent had been infringed. Before I deal with the arguments, it is necessary to focus on claim 1 and see the essential integers therein as pointed to the court by defendants` counsel.

A key part of defence submission (paras 60 to 82) reads thus:

> *60 The broadest claim, which is Claim 1, claims:*
>
> *`An apparatus for preventing unauthorized access of the postman`s trap door, said apparatus comprising:*
>
> *a a trap door stopper along the lower edge of each postman`s trap door for minimizing the gap between the trap door stopper and lower edge of said postman`s trap door, said trap door stopper further having a stopper portion for wedging the lower and outer edge of said trap door;*
>
> *b a matrix of orthogonal bars being placed in the interior of said mailbox and directly behind the postman`s trap door for wedging the lower and inner edge of said postman`s trap door against the inner surface of said stopper portion;*
>
> *c when said matrix of orthogonal bars is lowered;*
>
> *d said matrix of orthogonal bars having as its top member at least one universal biasing bar running along the width of said multiple slot mailbox;*
>
> *e said matrix of orthogonal bars further having as its horizontal members a plurality of parallel anti-junk mail bars;*
>
> *f said matrix of orthogonal bars having at its vertical members a plurality of parallel bars, said vertical bars having its upper end coupled to said universal biasing bar; and*
>
> *g at least one master lock being disposed on the upper front panel and below said universal biasing bar for raising and lowering said matrix of orthogonal bars;*
>
> *h whereby the postman`s trap doors can be released or closed simultaneously.*
>
> *61* ***The defendants submit that the essential integers of the invention are set out in (b), (d), (e), (f), (g) and (h) above*** *. [Emphasis added.]*
>
> *62 The following issues therefore arise for consideration when constructing Claim 1:*

a Whether the term `a matrix of orthogonal bars` in fact requires that the horizontal extend fully from one vertical element to the next;

b If no, whether the horizontal bars which do not extend from one vertical element to the next can be described `a plurality of parallel anti-junk mail bars`.

c Whether the combination of trap door stopper and matrix of orthogonal bars as defined above can be said to wedge the lower and inner edge of the postman`s trap door to prevent it from being opened by unauthorized persons.

d If, despite it being stated in the claim that `wedging` occurs when the array is lowered, does the Claim cover this effect when the array is raised.

e If, despite it being stated in the claim that the master lock must be below the universal biasing bar, the claims covers an arrangement where the lock is not below the bar.

63 Applying the analysis to the plaintiffs` infringing system, it is submitted that it can be very easily and clearly demonstrated that the essential integers of the Patent`s Claim are present in the plaintiffs` infringing design.

64 Firstly, the stopper screws, which are connected perpendicularly into the vertical members of the array to form, together with the vertical members, the horizontal members `a matrix of orthogonal bars`.

65 As Dr Khong has testified under cross-examination, there is no requirement in the Claim that the horizontal members of the array extend from one vertical member to the next.

66 The Claim does not limit or specify how the horizontal and vertical members are to be joined - it only requires that their orientation one to the other be orthogonal - ie perpendicular.

67 The entire basis of the invention - ie the array of horizontal `anti-junk mail bars` which may be raised or lowered by the master lock, and which block the mail delivery flaps when the array is in the `locked` position, are provided by the stopper screws in the infringing design.

68 Secondly, it is clear that the word `wedge`, when used in the context of the Claim, refers to the action of blocking or jamming (to borrow Dr Khong`s words) the postman`s trap door from being opened by unauthorized persons, rather than wedging in the dictionary sense of the word.

69 Again, this is precisely the function performed by the stopper screws in the infringing design. The primary function of the `anti junk mail bars` (or in the case of the infringing design, the stopper screws) are to block the unauthorized inward swing of the postman`s trap door when an unauthorized person tries to insert unauthorized mail into a particular mailbox through the postman`s trap door.

70 There is no necessity for the `anti junk mail bars` to exert force from and against the inside of the postman`s trap door when no one is trying to insert unauthorized mail. There is in fact no force acting in any direction when the system is at rest. The system in fact needs to act, and acts only to prevent movement.

71 There is some evidence from the plaintiff that the rollers perform the wedging function. However, this is clearly incorrect. This can in fact be seen from exh P2. There is in fact no contact between the roller and the inner surface of the postman`s trap door, contrary to the assertion of the plaintiffs` witnesses. Hence, there is no wedging action in actual practice. There is no need for a wedging action and it is submitted that the use of the word `wedge` in the specification and claims is nothing more than idiosyncratic and inexact use of language by the patent draughtsman.

72 The further fact is, the rollers are there only to facilitate the return of the postman`s trap door to the closed position. This can be seen from the description of the patent, wherein the rollers are described as being `optional` (p 7 of the patent, at lines 7 to 9). For the invention to work, there is no need for rollers to be present and as such, there is need to mention and there is in fact no mention of rollers in the Claim.

73 In respect of the universal biasing bar (which is the topmost bar in the array), its function is to raise and lower the array (which includes the horizontal anti-junk mail bars which are comprised by the stopper screws in the infringing design) when the master key is turned.

74 It is submitted that the plaintiffs` description of the topmost bar in the array in the infringing design as a `lever` or as a `bar linkage` arrangement is only a matter of semantics and does not change its function. The turning of the cam lock moves this topmost bar up and down and hence moves the entire array. Indeed, that there is a similarity of function has been confirmed by the plaintiffs` expert Dr Khong under cross examination.

75 It is submitted that the fact that the infringing design allows for the array to be raised and lowered in two stages - one side first when the key is turned 90 degrees and then the second side when the key is turned a further 90 degrees is not material.

76 First and foremost, it remains that one set of postman`s flaps are released simultaneously, and then the second set.

77 Secondly, the key may be turned 180 degrees in single movement, thereby moving the entire array so that all the flaps are released simultaneously. There is in any event, simultaneous opening and closing of at least some of the postman`s delivery flaps and this brings the infringing design within the language of the claim.

78 As for the array being raised rather than lowered, it is submitted that the crucial consideration is that there must be relative vertical movement between two positions: `locked` and `unlocked` or `closed` and `open`.

79 It is submitted that whether the `locking` and `unlocking` or `opening` and `closing` effect is achieved by raising or lowering the array is not material.

80 This is a simple matter of relative positioning of the anti-junk mail bars in relation to the postman`s flap. This can be demonstrated easily by the defendants` physical exhibit tendered in court. Therefore, it is submitted that the second defendant did not intend strict compliance by the use of the word `lowered` when describing the locking effect.

81 Similarly, it is respectfully submitted that the second defendant did not intend strict compliance when describing the location of the locking mechanism as being below the universal biasing bar. This can be demonstrated, in this case, if one is to imagine that the lower portion of the infringing design`s biasing bar (below the cam lock) is removed. That portion is not necessary as all the force in fact rests on the top part of the bar. Therefore, even if the portion of the bar below the cam lock is removed - there is no impairment or change at all as to how the mechanism works.

82 In short, it is submitted that all the essential integers of the invention are present [in the plaintiffs` embodiment] and that they work on each other in the way described in the claim ... In consequence, there has been infringement of the patent by the plaintiff.

The manner in which the courts do construe patent documents is compendiously set out in 35 ***Halsbury`s Laws of England*** (4th Ed) paras 327 and 331 as follows:

327 Contents of specification. The specification of an application for a patent must contain a description of the invention, a claim or claims, and any drawing referred to in the description or any claim. The specification must disclose the invention in a manner which is clear enough and complete enough for the invention to be performed by a person skilled in the art.

The description contained in the specification has to fulfil two main conditions:

(1) to state in clear and intelligible language what the invention is, so that others may know what the monopoly is that is granted to the proprietor of the patent; and

(2) to state in clear and intelligible language in what manner the patented invention is to be performed, so that others may learn from the specification how practically to avail themselves of the patented invention when the patent has expired.

The claim or claims contained in the specifications must:

(a) define the matter for which the applicant seeks protection;

(b) be clear and concise;

(c) be supported by the description; and

(d) relate to one invention or to a group of inventions which are so linked as to form a single inventive concept.

Any drawings which are contained in a specification must satisfy certain requirements in respect of their presentation and execution.

331 Body and claims. A specification customarily begins, after the title, with a general preamble stating, usually in more detail than in the title, the subject to which the invention relates, indicating upon what old arrangements the invention is an improvement and the respects in which they needed improvement, and otherwise stating the objects of the invention, possibly summarising other proposals for solving the same problems, and setting out the nature of the invention in general terms. This statement usually includes a clause (`the consistory clause`), in substantially the same terms as the main claim. Then follows a detailed description of one or more embodiments of the invention, often with a suggestion of alternatives. The whole of this is known as `the body of the specification`. The specification ends with the claims, delimiting the monopoly granted by the patent. There may be included in the body, usually immediately before the claims, disclaimers of part of the matter covered by the language of the claims.

The preamble to the body and the claims, on the one hand, and the remainder of the body, on the other, have quite different functions. The body, apart from the preamble, is there to instruct those skilled in the art concerned in the carrying out of the invention; provided that it is comprehensible to and does not mislead a skilled reader, the language used is seldom of importance. The claims, on the other hand, since they define the monopoly, will in the event of legal proceedings be scrutinised with as much care as any other document defining a legal right, and require to be as carefully drawn. The preamble, which may determine the manner in which a reader approaches the claims, should be drawn with almost equal care.

Furthermore, Lord Russell`s observations in ***Electric and Musical Industries Ld v Lissen Ltd & Anor*** 56 RPC 23 at 39 which had been followed in many subsequent cases read as follows:

The function of the claims is to define clearly and with precision the monopoly claimed, so that others may know the exact boundaries of the area within which they will be trespassers. Their primary object is to limit and not to extend the monopoly. What is not claimed is disclaimed. The claims must undoubtedly be read as part of the entire document and not as a separate document; but the forbidden field must be found in the language of the claims and not elsewhere. It is not permissible, in my opinion, by reference to some language used in the earlier part of the specification to change a claim which by its own language is a claim for one subject-matter into a claim for another and a different subject-matter, which is what you do when you alter the boundaries of the forbidden territory. A patentee who describes an invention in the body of a specification obtains no monopoly unless it is claimed in the claims. ...

In **Rosedale Associated Manufacturers Ltd v Carlton Tyre Saving Co Ltd** [1960] RPC 59 (CA) at p 67, Lord Evershed MR observed:

> *It is no doubt true and has been well established (see for example the speech of Lord Russell of Killowen in the EMI case (**Electric & Musical Industries v Lissen** [1939] 56 RPC 41) that you must construe the claims according to their terms upon ordinary principles, and that it is not legitimate to confine the scope of the claims by reference to some limitation which may be found in the body of the specification but is not expressly or by proper inference reproduced in the claims themselves. On the other hand, it is clearly no less legitimate and appropriate in approaching the construction of the claims to read the specification as a whole. Thereby the necessary background is obtained and in some cases the meaning of the words used in the claims may be affected or defined by what is said in the body of the specification.*

In **Brugger v Medic-Aid Ltd (No 2)** [1996] RPC 635 at 642, Laddie J observed:

> *[The] claims and the specification are to be read together. It is to be expected that they will be consistent with each other (ie claims to specification and the claims to each other).*

Further, in **Catnic Components Ltd & Anor v Hill & Smith Ltd** [1982] RPC 183, the House of Lords held that a patent specification should be given a purposive rather than a purely literal construction. Lord Diplock in his speech at pp 243 to 244 said:

> *My Lords, a patent specification is a unilateral statement by the patentee, in words of his own choosing, addressed to those likely to have a practical interest in the subject matter of his invention (ie `skilled in the art`), by which he informs them what he claims to be the essential features of the new product or process for which the letters patent grant him a monopoly. It is those novel features only that he claims to be essential that constitute the so-called `pith and marrow` of the claim. A patent specification should be given a purposive construction rather than a purely literal one derived from applying to it the kind of meticulous verbal analysis in which lawyers are too often tempted by their training to indulge. ...*

Before I proceed to deal with the differing features in the plaintiffs` device as compared with that of the defendants, it is useful to recall the facts in ***Catnic*** . In that case, the plaintiff was a proprietor of a patent for steel lintels which had a rear support member which was vertical. The defendant manufactured a similar lintel but with the rear support member inclined between 6 and 8 degrees - depending on the size of the lintel from the vertical. The following diagrams depict an approximate representation of one typical plaintiff`s lintel and one defendant`s lintel.

The strength of a steel lintel in this form of construction is derived to some extent from the verticality of the rear member and the defendants` lintel had a reduced load bearing capacity compared to the plaintiffs` lintel but owing to the small inclination from the vertical, this reduction was small. The defendant contended that the verticality of the plaintiffs` lintel was essential to its function. In rejecting the defendants` contention, Lord Diplock observed at p 243 (supra) that `[a] patent

specification should be given a purposive construction rather than a purely literal one derived from applying to it the kind of meticulous verbal analysis in which lawyers are too often tempted by their training to indulge.`

Lord Diplock then proceeded to identify the nub of the matter being whether practical persons skilled in the art would understand that strict compliance with a particular word or phrase was intended by the patentee to be an essential requirement of the invention. Lord Diplock then applied a three-phase test which has become the litmus test for deciding whether variants do or do not infringe. The test comprises three questions: the first two are questions of fact and the third is one of construction. They are:

(a) Does the variant have, in fact, a material effect on the way the invention worked? If the answer is `yes`, the variant falls outside the claim and does not infringe. If the answer is `no`, the second question is asked.

(b) Would it have been obvious, at the date of publication of the patent specification, to the informed reader (a person skilled in the art?) that the variant had no material effect? If the answer to this is `no` then the variant falls outside the claim but if the answer is `yes` the final question must be asked.

(c) Is it apparent to any reader skilled in the art that a particular descriptive word or phrase used in a claim cannot have been intended to exclude minor variants which would have no material effect upon the way in which the invention worked? If the answer to this is `no` then the variant lies outside the claim but if `yes` the variant infringes the patents.

The Court of Appeal in Hong Kong applied the ***Catnic*** test in **Improver Corp v Raymond Industrial** [1991] FSR 233. This case involved two rival devices. The plaintiffs` patent was for a device called the `Epilady` for removing hair from arms and legs. The defendant imported and distributed a device which operated in a similar way called `Smooth & Silky`. The background to these two devices as set out in the judgment of the court is as follows:

> *For many years there has been a search for a satisfactory depilatory device or process that combined the factors which were considered desirable. Chief amongst those was that it should be as painless as possible, that the effect would last for a reasonably long time and that it was cheap. Various methods were tried and most of them are still in widespread use. These include a razor, the spreading of wax on the hairs which is then pulled off when it solidifies taking the hair with it, the use of creams which destroy the hair roots but which are considered possibly dangerous and, more recently, the electric shaver. There were seen to be advantages in plucking the hair rather than cutting it because the effects last longer. Because the hair is removed from the hair root itself the hair sometimes does not grow again and that is considered desirable. Mechanisms for plucking hair from the skin have been the subject of patents and these are referred to in some of the judgments in the parallel proceedings to this action which have been commenced in England. Two of those patented mechanisms involve the use of a spring. The inventor of the appellants` product (the `Epilady`), Mr Daar, himself patented a method whereby a rotating spring was made to expand and contract on the skin with a system of cams driven by an electric motor. The principle was that the hairs passed between the windings of the spring when it was expanded and were caught when the spring contracted. They were then pulled away by the spring`s rotation. It was a complicated device and understandably was never produced. The other one was patented by a Mr Fischer and this consisted of two helical springs which were bent in an arcuate form so that on the convex side of each spring there were openings but on the concave side these openings*

closed. The helical springs had a roughened surface and they were to be pushed across the skin. As they did so hairs were picked up in the open parts of the helical spring and when a hair reached the closed part it was entrapped. The forwards motion combined with rapid jerks of the helical spring then pulled it from the skin. This device was not motor-driven but it does form the basis of the respondents` claim that the appellants` patent is not valid. The Fischer patent was filed in 1948 and granted in 1950.

...

`Epilady` filled a very long-felt want and has enjoyed quite phenomenal commercial success. We understand that in the first six months after it came on the market and without any great advertising campaign, sales worldwide were about US$340 million.

The invention which is alleged to infringe the `Epilady` patent was developed by a fellow Israeli, Mr Joseph Gross, who gave evidence in which he quite frankly admitted that he had obtained the basic idea for his invention (`Smooth and Silky`) from `Epilady.` He said that his wife had bought an `Epilady` but found it rather painful to use. He decided that this was due to two reasons. Firstly he thought that a whole bunch of hair may be gripped together and pulled out and also that hair could become entangled between the coils of the spring. There were other disadvantages but they were relatively minor. He then started to think how to pluck hairs in a better way that would eliminate these disadvantages and came up with the idea of an elastomeric rod. This would be made of a flexible material but it would be arcuate and would have slits cut in it. The hair would be caught between the slits on the convex side of the rod and caught on the concave side where the rotating nature of the rod would pluck them from the skin. This, he thought, would overcome the problem of entanglement of the hair. He was, however, by no means certain that a suitable flexible rod could be produced and he then spent some considerable time with the manufacturers of such articles to see if it was actually possible. Eventually after about a year`s research a suitable rod was produced and a device incorporating it was put on the market. ...

The conclusion reached by the court is well summarised by David Bainbridge in his book ***Intellectual Property*** . I intend to adopt it and it reads thus:

... It was held, as regards the Catnic principles, that the first and second questions are questions of fact and the answers to them are not conclusive to the third question which was one of construction. Even a purposive construction might produce the conclusion that the patentee was confining his claim to the primary meaning and excluding the variant even though the variant might make no material difference and this would have been obvious at the time. On the evidence, there was no material difference, both devices trapped and plucked hair from the skin, and it was obvious that both worked in the same way. The answer to the first two questions ... were therefore `no` and `yes` respectively and the third question fell to be determined. It was held that it was essential to look at all the essential integers in the patent specification and claim and see if all those essential integers were present in the alleged infringement. The alleged infringing device could perform the same task as long as it did so differently as regards at least one essential integer and this is so even if the difference had no material effect upon the way the invention worked.

The specification and claim must therefore be construed to determine what the essential integers are and these compared to the alleged infringing product or process. In the above case, the specification and claim referred to a helical spring which was rotated to pluck hairs. It was held that this was an essential integer and the fact the defendant used an elastomeric rod instead, even though this had no material effect on how the invention worked, indicated that the defendant`s device did not infringe the patent. The skilled man, reading the patent specification and claim, would have considered that the patentee had not intended to include such a variant. In a claim in the Patents Court involving the same devices, Hoffman J applied the Catnic test and his answers were `no`, `yes` and `yes` and therefore, in his opinion, the `Smooth & Silky` hair remover did not infringe.

It should be recalled that plaintiffs` counsel in his submission lists the following as the essential integers of the claim (see pp 60, 61, 62 and 63 of the NE):

(i) a matrix of orthogonal bars;

(ii) the said matrix of orthogonal bars having as its top member at least one universal biasing bar running along the width of the said multiple slot mailbox;

(iii) having as its horizontal members a plurality of parallel anti-junk mail bars;

(iv) [the] said vertical bars having its upper end completed to the said universal biasing bar;

(v) at least one master lock; and

(vi) for raising and loweing said matrix of orthogonal bars.

Reverting to the facts of the case, it could be gathered from the defendants` expert`s conclusions (see DBA-54 to 55) that the following features are not present in the plaintiffs` Flexon system:

(i) The fact that there is no `wedging` action between the trap door stopper and the screw stopper in the plaintiffs` Flexon device;

(ii) The claim states that the `wedging` occurs when the orthogonal bars matrix is lowered whereas in the plaintiffs` Flexon device stopper screws block the postman`s trap doors when they are raised;

(iii) There are no horizontal bars extending across the whole width of the mailboxes in the plaintiffs` Flexon device; and

(iv) The master lock is below the universal biasing bar in the claim whereas the plaintiffs` Flexon device has its master lock level with the universal biasing bar.

The defendants` expert further conceded that in the claim the phrase `wedge` was not properly chosen (p 292 of the NE).

In my evaluation, there was much validity in the plaintiffs` experts` views that:

(i) The plaintiffs` Flexon system does not have a trap door stopper. The trap door rests on the mailbox door on one side and is blocked from swinging inwards on the other side by stopper screws.

There is no wedging action.

(ii) Matrix of orthogonal bars (which is one of the essential integers according to the defendants` counsel) does not appear in the plaintiffs` Flexon device. Flexon system uses stopper screws and not orthogonal bars (`orthogonal` means `lying or intersecting at right angles`). There is no intersection of vertical and horizontal bars as in the defendants` patent. The mechanism employed and the mode of actions in the plaintiffs` Flexon system are also different from that of the defendants` system. In the plaintiffs` Flexon system, the stopper screws block the corner of the trap door upon the raising of the bar-linkage.

(iii) In the plaintiffs` Flexon system, there is no universal biasing bar running along the whole width of the multiple slot mailbox (which is another essential integer in the defendant`s claim as stated by defendants` counsel). The plaintiffs` Flexon system does not require the presence of anti-junk mail bar (which is yet another essential integer according to the defendants` counsel). The anti-junk mail bars are not found in the plaintiffs` Flexon system.

(iv) The plaintiffs` lever-cum-bar linkage system does not have the raising and lowering actions being generated below any universal biasing bar. In order for the plaintiffs` Flexon system to function properly, the lock cam has to be placed within a slot in the body of the horizontal biasing bar. Furthermore, not all postman`s trap doors can be released or closed simultaneously in a one-key turning operation. Only some trap doors are released or closed with each 90-degree turn of the key.

Counsel for the defendants in his submission claimed that it can be very easily and clearly demonstrated that the essential integers of the patents` claim are present in the plaintiffs` infringing design. He said (para 64 of his submission) that the stopper screws which are connected perpendicularly into the vertical members of the array to form together with the horizontal members `a matrix of orthogonal bars`.

In my determination, the foregoing submission, to say the least, is outlandish. The explanation attempted can neither be regarded as purposive nor sensible for if the draftsman of claim 1 indeed wanted to embrace `stopper screws` placed along the vertical members to be `orthogonal bars` he should have phrased the claim unequivocally. As regards the use of the term `wedge` in claim 1 counsel for the defendants urged the court not to use the dictionary sense of the word but to refer to the action of blocking or jamming (para 68 of counsel`s submission). The defendants` expert Dr Khong himself in his evidence opined that the choice of the phrase `to wedge` in the claim is inapt. It is instructive at this juncture to recall what Lord Russell of Killowen observed in **Electric & Musical Industries, Ltd v Lissen Ltd** [1938] 4 All ER 221 at 227:

> *... The **prima facie** meaning of words used in a claim may not be their true meaning when read in the light of such a dictionary, or of such technical knowledge, and, in those circumstances, a claim, when so construed, may bear a meaning different from that which it would have borne had no such assisting light been available. That is construing a document in accordance with the recognised canons of construction. However, I know of no canon or principle which will justify one in departing from the unambiguous and grammatical meaning of a claim and narrowing or extending its scope by reading into it words which are not in it, or which will justify one in using stray phrases in the body of the specification for the purpose of narrowing or widening the boundaries of the monopoly fixed by the plain words of a claim.*

Lord Russell then made reference to the principles enunciated in previous authorities and said:

A claim is a portion of the specification which fulfils a separate and distinct function. It, and it alone, defines the monopoly, and the patentee is under a statutory obligation to state in the claims clearly and distinctly what is the invention which he desires to protect. As Lord Chelmsford said in this House many years ago in Harrison v Anderston Foundry Co (1876) 1 App Cas 574 at p. 581:

`The office of a claim is to define and limit with precision what it is which is claimed to have been invented and therefore patented.`

If the patentee has done this in a claim the language of which is plain and unambiguous, it is not open to your Lordships to restrict or expand or qualify its scope by reference to the body of the specification. Lord Loreburn LC, emphasised this when he said in ***Ingersoll Sergeant Drill Co v Consolidated Pneumatic Tool Co Ltd*** *[1907] 25 RPC 61 at p 83:*

`The idea of allowing a patentee to use perfectly general language in the claim, and subsequently to restrict, or expand, or qualify what is therein expressed by borrowing this or that gloss from other parts of the specification, is wholly inadmissible.`

The same view was expressed by Romer LJ in the following felicitous language in ***British Hartford-Fairmont Syndicate, Ltd v Jackson Bros (Knottingley) Ltd*** *[1932] 49 RPC 495 at p. 556:*

`One may, and one ought to, refer to the body of the specification for the purpose of ascertaining the meaning of words and phrases used in the claims or for the purpose of resolving difficulties of construction occasioned by the claims when read by themselves. But where the construction of a claim when read by itself is plain, it is not in my opinion legitimate to diminish the ambit of the monopoly claimed merely because in the body of the specification the patentee has described his invention in more restricted terms than in the claim itself.`

I have read the defendants` claim many times with particular reference to those essential integers highlighted by counsel for the defendants and I confess that the argument advanced by counsel that orthogonal bars must be equated with stopper screws and the phrase `to wedge` should not be given its natural meaning is somewhat effete and does not lend itself to any persuasion.

In my determination, the phrase `to wedge` must be given its natural meaning `to force` or `to push` (p 292 of the Notes of Evidence; see also p 374 of the ***Chambers Twentieth Century Dictionary***). The remainder of the submission by defendants` counsel (paras 64 to 85) need not be adumberated here. Suffice it if I said that having considered them I found them generally to be no more than an exercise in nebulousness.

In patent law, a claim is an assertion of what the invention purports to accomplish and claims of a patent define the invention and the extent of the grant; any feature of an invention not stated in the claim is beyond the scope of patent protection (***Black`s Law Dictionary*** (6th Ed) p 247).

In my finding, reviewing all the evidence, it is just not one feature but a series of essential integers that are notably absent in the plaintiffs` Flexon device. The learning and authorities referred to the

court by both counsel further reinforce the view that even if one essential integer is absent from the plaintiffs` Flexon device, the defendants` claim ought to fail (see the judgment of Hoffman J (as he then was) in **Improver Corp v Remington Consumer Products Ltd** [1990] FSR 181 (**`*Improver* (England)`**) where the court had to deal with a point of construction whether a rubber rod is a `helical spring` as that expression was used in the claims of the patent).

In my determination, I do not think that a matrix of orthogonal bars can reasonably be given a wide generic construction which the defendants demand and in this regard I accept the plaintiffs` expert`s evidence as well as the argument by plaintiffs` counsel that a skilled man would not understand it in this sense. As observed by Hoffman J in ***Improver*** (England) (p 197, supra), this is not a case like ***Catnic*** in which the angle of the support member can be regarded as an approximation to the vertical. The stopper screws are not an approximation to a matrix of orthogonal bars. In my finding, the stopper screws in the plaintiffs` Flexon device when juxtaposed with the `matrix of orthogonal bars` cannot, by any measure, be regarded as a variant simpliciter. In my view, the Flexon mechanism is vastly different from that of the matrix of orthogonal bars.

In ***Improver*** (England), in dismissing both the actions by the plaintiffs as well as the cross claims by the defendants, Hoffman J held (at p 182, supra):

> *(1) That, if the issue was whether a feature embodied in the alleged infringement which fell outside the primary, literal or acontextual meaning of a descriptive word or phrase in the claim (`a variant`) was nevertheless within its language as properly interpreted, the court should ask itself the following questions (`Lord Diplock`s three questions`):*
>
> *(i) Does the variant have a material effect upon the way the invention works? If yes, the variant is outside the claim. If no:*
>
> *(ii) Would this (ie that the variant had no material effect) have been obvious at the date of publication of the patent to a reader skilled in the art? If no, the variant is outside the claim. If yes:*
>
> *(iii) Would the reader skilled in the art nevertheless have understood from the language of the claim that the patentee intended that strict compliance with the primary meaning was an essential requirement of the invention? If yes, the variant is outside the claim.*
>
> *...*
>
> *(2) That Lord Diplock`s speech in **Catnic** indicated the same approach to construction as that laid down by the Protocol on the Interpretation of Article 69 of the European Patent Convention.*
>
> *...*
>
> *(3) That in this case, Lord Diplock`s three questions were to be answered `no`, `yes`, `yes` respectively. Accordingly the `Smooth and Silky` device did not infringe the plaintiffs` patent.*

Later at p 189 (supra), Hoffman J said that in the end the question is always whether the alleged infringement is covered by the language of the claim.

Having considered all the arguments and after reviewing all the evidence adduced, I am in agreement with plaintiffs` counsel that the differences in the essential integers or component of both apparatus as well as the manner of the arrangement of the key components are significant. In my finding, the plaintiffs have established to my satisfaction the following:

(i) There is no matrix of orthogonal bars in the plaintiffs` device (this in my view is an important aspect).

(ii) The plaintiffs` device has no trap door stoppers.

(iii) There is no wedging action between the trap door stopper and the screw stoppers in the plaintiffs` device.

(iv) The horizontal biasing bars do not extend across the width of the plaintiffs` device.

(v) The master lock is not below the `universal biasing bar` in the plaintiffs` device.

(vi) The trap doors are not locked or unlocked simultaneously in the plaintiffs` device; and

(vii) Locking action does not occur when the locking apparatus is lowered in the plaintiffs` device.

In my opinion, the defendants` case on infringement falls outside the ambit of ***Catnic*** questions. Even if the substantial differences in the plaintiffs` Flexon device can be regarded as variants, in my finding the first of these questions as suggested in ***Catnic*** , ie does the variant in fact have a material effect upon the way the invention worked, has to be answered in the affirmative. In the premises, I hold that there is no infringement as such by the plaintiffs of the defendant`s patent.

In view of my finding that the plaintiffs had not infringed the defendants` patent, the next question whether the plaintiffs are entitled to the defence of innocence under s 69 of the Act is unnecessary. At any rate, in view of the withdrawal of the second defendant`s affidavit from the proceedings, there is no evidence at all from the defendants as regards the issue of the plaintiffs` knowledge of the existence of the patent.

It must also be presently mentioned that the inspection of the models of the patent as well as the plaintiffs` Flexon device produced to the court, reinforced my conclusion that the central features in both devices are substantially and vastly different. It is also ironic that the latest devices marketed by the defendants bear no resemblance to the patent but on the contrary seem to be modelled after the plaintiffs` devices which I held do not infringe the defendants` patent.

Consequently, I allowed the plaintiffs` claim, dismissed the defendants` counterclaim and ordered that:

(1) a declaration to the effect that the defendants` threats of proceedings for infringement of patent No. 52288 are unjustifiable;

(2) an injunction be issued to restrain the defendants, by their directors, officers, servants or agents,

from threatening by letters, circulars, advertisements or otherwise the plaintiffs or any other person dealing with the plaintiffs with any legal proceedings in respect of any proceedings in respect of any alleged infringement of patent No 52288;

(3) an inquiry as to damages and interest thereon; and costs.

Outcome:

Plaintiffs` claim allowed; defendants` counterclaim dismissed.