

## COMMISSIONER'S DECISION

### Aggregation, Obviousness: Shear Pin Release System

The shear pin and plug components of the rejected claims were held to have an acceptable cooperative relationship, but that it was not properly defined. Applicant submitted amended claims after the Hearing which overcame the rejection on aggregation and prior art. Rejection modified.

\*\*\*\*

This decision deals with Applicant's request for review by the Commissioner of Patents of the Examiner's Final Action on application 286,272 (Class 74-294) entitled SHEAR PIN RELEASE SYSTEM. The inventors are Donald L. Smith and Michael N. Clark. The Examiner in charge issued a Final Action on November 28, 1980 refusing to allow the application to proceed to patent. A Hearing was held on October 7, 1981 at which the Applicant was represented by his Patent Agent, Mr. M. Thrift.

The application relates to a rocket retention and release assembly wherein first and second members are connected together by a shear pin and plug assembly. The hollow shank of a headed shear pin is inserted into aligned holes in the two members and expanded so that the shank fits within the hole of the second member. The plug is inserted into the hollow shank of the pin so that its upper surface 50 is located substantially in the shear plane 42 between the members to act as an anvil. Figure 3 below shows the arrangement.

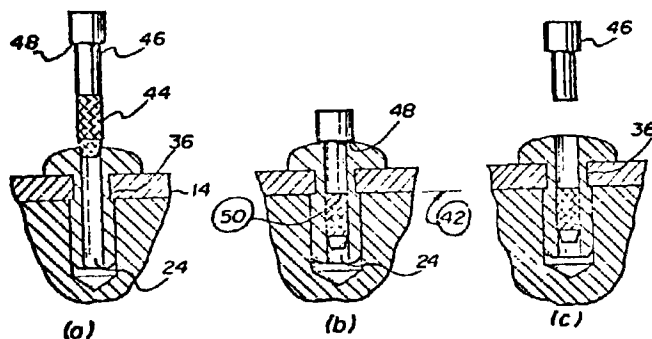


FIG. 3

In the Final Action the Examiner refused claims 1 to 10 inclusive, firstly as being directed to an aggregation of elements which are old and well known in the art, and secondly, as failing to define a patentable improvement over the following Canadian patents:

949,785	June 15, 1974	Brown
433,738	Mar. 19, 1946	Cherry
410,803	Mar. 2, 1943	Waite
386,569	Jan. 30, 1940	Bettington
287,163	Feb. 12, 1929	Iseman

The Examiner also indicated that the subject matter of the remaining claims, 11 to 16, appeared to be allowable except for the need of positive claiming in claim 11.

The Bettington patent shows a headed rivet, while the other patents describe various sleeve and pin rivet arrangements for forming headed fasteners to hold two members together.

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

. . .

Applicants alleged invention relates to a shear pin holding two members together and a plug within said pin acting as an anvil at a shear plane at the adjacent faces of the two members.

It is agreed that this application contains patentable subject matter. However, claims 1-10 inclusive as recited herein do not set forth the limits of the invention in an acceptable manner.

Claim 1 is rejected as aggregative as claimed. Applicant has recited only a shear pin for connecting first and second members and a plug for insertion into said shear pin when it is used. This is not representative of a combination which applicant alludes to in the preamble.

A combination is a union of elements that will produce a unitary result that is not the sum of the known characteristics of the parts. The pin is old and well known in the art, the plug is old and has well known characteristics and a multitude of uses. These two elements are not presented as a collocation of intercommunicating parts so that one may contribute to the action of the other. Since one can contribute to the other only when installed the claim can also be considered as conditional or futuristic, and therefore indefinite.

Claim 1 is further rejected for failing to describe a device that would carry out the object of the invention. If the plug was very short and placed at the extreme lower end of the shank applicant would not have the desired anvil effect.

Claim 1 is further rejected as too broad in scope in view of the patents to Cherry, Waite, Brown and Iseman. The patent to Lettington[sic] teaches the prior art as shown by applicant. These prior art patents which with the exception of Lettington [sic] teach a shear pin and a plug.

. . .

Claims 11-16 appear allowable with the exception of the plug being positively reintroduced in line 3 of claim 11.

Applicant has in his comments indicated that the prior art does not teach his combination of elements. Such prior art is considered to meet the claimed subject matter when set forth in the form of claims 1-10. Adapted to be used for, or intended use, cannot be considered as limiting the elements to that specific use.

. . .

The Applicant did not agree with the Examiner, and argued (in part):

. . .

The applicant's invention solves the problems of the hollow shear pin by providing a plug for insertion in the passageway through the pin after it has been expanded by the mandrel. In use, the plug is inserted to a depth in the shear pin just below the shear plane between the two elements joined. When so installed, the plug acts to prevent the collapse of the surrounding portion of the shear pin shank and acts as an anvil promoting the clean shearing of the pin rather than its collapse upon application of the design load. It is agreed between the Examiner and the applicant, as noted in the penultimate paragraph on page 1 of the Official Action of November 28, 1980, that this involves invention.

. . .

It is respectfully submitted that the claims under rejection precisely define what may be considered a group or "kit" of inter-related parts. These inter-related parts may or may not be later assembled to form a completed shear pin, but what may or may not happen in the future is not a part of the claimed invention. The claimed invention includes present structural limitations on each part. These are defined in terms of both the relative dimensions of the parts and how the parts are to be inter-connected in the final assembly, if assembled. However, this is not to say that there is anything futuristic or conditional in the definition of the claim. For example, claim 1 calls for a plug having a length such that "the plug may in use be located entirely within a shank end portion of the pin spaced from the head and located in the hole in that one of the members to be located furthest from the head when said members are connected". Rather than being a mere direction of activities to take place in the future, this language imparts a structural limitation to the plug.

. . .

With respect to the prior art objection, it is believed that none of the applied references is pertinent to the applicant's claimed invention. None discloses or even suggests the applicant's shear pin combination. Each of the cited patents deals with rivets, the sole function of which is to fasten two or more items rigidly together. On the contrary, the present application deals with a shear pin which is to retain two items together up to a specified load and then to release them when the specified load is exceeded. None of the patents cited disclosed the applicant's combination of pin and plug with the specified relationship between the plug and the pin.

. . .

In researching the law relating to the Examiner's objection, one decision of particular interest was located. That is In re Venezia 189 U.S.P.Q. 149, a decision of the United States Court of Customs and Patent Appeals. The situation before the Court was, in the applicant's view, directly analogous to that before the Appeal Board in this case. The relevant aspects of the United States Patent Law are very similar to the Canadian Patent Law and the Court's rationale in upholding the claims in that case appears equally applicable to the Canadian situation. For the convenience of the Patent Appeal Board a copy of the In re Venezia decision is appended hereto. The situation would appear to be the same in Great Britain, although no precedents on this point have been located, presumably because no analogous objections have been raised.

. . .

The issues before the Board are whether claims 1 to 10 inclusive present a proper combination of elements, and if they do, whether the combination claimed therein is patentable over the applied patents.

We have reviewed the application, bearing in mind the arguments with respect to the kit type of claims that Applicant believes are represented by claims 1 to 10, and the rejection of these claims by the Examiner as being directed to an aggregation. Of these claims, we find that independent claims 1, 5 and 8, which call for a combination or an assembly, contain the same elements that are incorporated in claims 11 to 16 which have been indicated by the examiner to be allowable. These allowable claims define the subject matter found in the disclosure, e.g. on page 6, where the specific relationship of the upper surface of the inserted plug with respect to the shear plane formed by the members, has been clearly described.

We find that while claim 1 recites a combination, and claims 5 and 8 each recite an assembly, all of these fail to define the allowable matter found in claim 11 which we note is also a claim to an assembly since it is dependent on claim 8. We are led, by the similarity of the claimed structures found in all these claims, to the conclusion that if properly claimed, the elements would be so interrelated in their intended arrangement one with another, that therefore the inventive features of the invention would be considered as defining over the art of record.

With respect to whether a proper combination is presented by claims 1, 5 and 8, we are of the opinion that there is an underlying cooperative relationship of the various components, albeit improperly defined, and that due to their arrangement they should not be considered as parts of an aggregation, whether the parts be together either as a connection or as a kit of interrelated parts. In his response, Applicant has referred to a decision in the United States Court of Customs and Patent Appeals, In re Venezia 189 U.S.P.Q 149 (1976), which held that a group of interrelated parts in a kit form was a manufacture as that term is used in the United States. Section 2 of the Canadian Patent Act also recognizes a manufacture as an article or thing that is permitted patent protection, provided that it is new and useful and falls into a category of product associated with trade and commerce.

Similarly a process, to be patentable, must relate in some way to the production of an article associated with trade and commerce. Concerning the term manufacture, it was stated by Cattach, J. in Lawson v. Commissioner of Patents, 2 C.P.R. 101 at 111:

"Manufacture" connotes the making of something. Thus it is seldom that there can be a process of manufacture unless there is a vendible product of the process. It must accomplish some change in the character or condition of material objects.

We are persuaded that the rejected claims should be considered in this application as being directed to a manufacture which exhibits a sufficiently acceptable combination of interrelated parts, but we are not satisfied that the rejected claims properly define the combination or assembly as described in the disclosure.

Therefore, after the Hearing we contacted Mr. Thrift, who had indicated at the Hearing that amendments to the claims would be considered by his client, and we suggested that claims 1 to 10 inclusive be amended to include terms defining the specific relationship found on page 6.

On November 12, 1981, Mr. Thrift submitted a set of revised claims specifically reciting the relationship of the plug in the shear pin, and also to the shear plane formed by the members. Minor amendments to the disclosure were made at the same time to bring the disclosure and claim terminology into conformity with each other. Amended claim 1 is representative of the amendments made to identify clearly the features of Applicant's invention, and reads:

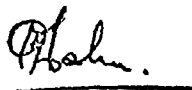
A shear pin assembly for forming a connection between a first member having a first hole completely therethrough and a second member contacting the first member and having a second hole therein aligned with the first hole, wherein the connection is shearable along a shear plane between the first and second members, said assembly comprising:

a shear pin having a head, a shank and a passageway extending axially along the length of the pin such that when the shank of the pin is inserted through the first hole and into the second hole, the pin is expandable by a mandrel to engage the first and second holes; and

a plug with a length less than that of the shank and a diameter not substantially less than that of the passageway after expansion of the pin such that on assembly the plug is inserted in the passageway and located entirely within the second hole of the second member with one end of the plug adjacent the shear plane.

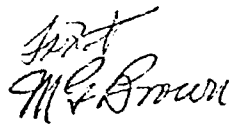
We are satisfied that the amended claims clearly define the invention in the application over the prior art of record.

We recommend that the amended claims be accepted.



G. Asher  
Chairman,  
Patent Appeal Board, Canada

S. Kot  
M. Brown  
Members



I concur with the reasoning and the recommendations of the Board. I am returning the application for further prosecution.



G.R. McLinton  
Acting Commissioner of Patents

Agent for Applicant

Smart & Biggar  
Box 2999, Station D  
Ottawa, Ontario

Dated at Hull, Quebec

this 12th. day of February, 1982