

Chapter 14

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Chapter 14

Unity of invention

14.01 Unity of invention

Section 36 of the *Patent Act* states that a patent shall be granted for one invention only. The Commissioner shall not consider a patent application to claim more than one invention if the subject matters defined by the claims are so linked as to form a single general inventive concept (section 36 of the *Patent Rules*). Thus, there must be unity of invention within the claims of a patent application. Restriction is required whenever different subject matters unconnected in design or operation are claimed in one application. Further, where a group of inventions is claimed in the same application, the requirement of unity of invention referred to in section 36 of the *Patent Rules* is considered to be fulfilled only when there is a technical relationship among those inventions involving one or more of the same or corresponding special technical features. The expression "special technical features" refers to those technical features that define the contribution which each of the claimed inventions, considered as a whole, makes over the prior art.

14.02 Unity of invention; Division of applications

The requirement of unity of invention shall be considered to be complied with where the following combinations of claims of different categories are included in the same application:

- (a) a product and a process for making the product;
- (b) a product and a use of the product;
- (c) a product, a process for making the product and a use of the product;
- (d) a process and an apparatus specially adapted to carry out the process;
- (e) a product, a process for making the product and an apparatus specially adapted

to carry out the process; or

- (f) a product, a process for making the product, an apparatus specially adapted to carry out the process and a use of the product.

14.02.01 Order of claims

The order in which the claims appear in any of combinations (a) to (f) above may be different from the order set forth therein. What is decisive is that the combinations are the same.

14.02.02 Examples

- (A) Product and process

Claims to a product and claims to a process for making that product are allowable in the same application. Generally, there is no need for the process claims and the product claims to be of the same scope. Consequently, the process claims may be directed to a method of preparing a family of compounds while the product claims may be restricted to only one member, or a small number of members, of that family. Conversely, the product claims may be directed to a family of compounds and the process claims may prepare only a few members of the family.

The process and the product must be so related that the process produces the product. If, however, there is a generic product claim and a generic process claim which are merely linked together through a common species, Section 36 is applied.

The following example illustrates Section 36 practice:

Claim 1 - A process to prepare sulphate compounds.

Claim 2 - A process to prepare sulphate of A.

Claim 3 - A process to prepare sulphate of B.

Claim 4 - A process to prepare sulphate of C.

Claim 5 - Sulphate of C.

Claim 6 - Salts of C.

Claim 7 - Nitrate of C.

Claim 8 - Chloride of C.

In this example the Patent Office would not permit claims 1 and 6 in one application, even though they are linked with respect to sulphate C. There is no unity of invention between, the claim to the process to sulphate A and the claim to the nitrate of C. Furthermore, there is no unity between claims 7 and 8 and any of the process claims defined in claims 1 to 4.

(B) Product and a use of the product

Claims to the use of a product may be included in the same application with claims to the product itself. The use must be fully described in the disclosure and must be based on the utility upon which the patentability of the product is predicated. The use may be embodied in different types of claims. A use could be claimed in the form of,

- a) a composition in which the product is an ingredient (e.g. A herbicidal composition comprising the product X and an inert carrier),
- b) a method of use claim (e.g. The method of killing weeds comprising applying product X to the weeds),
- c) a use "per se" (e.g. The use of product X to kill weeds).

Claims in these formats may be claimed in the same application as claims to the product. There is no need for the product claim and the use claim to be of the same scope.

(C) Product, process and use

Under the provisions of paragraph 14.02 (c) above, an application may include claims to a product, claims to a process for preparing that product and claims to a use of the product.

(D) Process and apparatus

An application may contain claims to a process along with a claim to an apparatus or

means specially adapted to carry out the process. The apparatus claims may be more extensive in scope than the process claims, or the process claims may be more extensive in scope than the apparatus claims, e.g. the process could be carried out in an apparatus different from the apparatus claimed. However the two sets of claims must be directed to the same inventive concept.

In the following example, the execution of functions A to D inclusive is the inventive concept and is claimed in both apparatus and process forms. The additional means and apparatus of claim 1 would normally constitute the known immediate and cooperating environment of the invention.

Claim 1

An apparatus to manufacture lamps automatically, including lamp envelope selecting and positioning means, means for conveying lamp components to an assembling means, wherein said assembling means comprises means for executing function A, means for executing function B, means for executing function C and means for executing function D; and means for conveying assembled lamps from said assembling means.

Claim 2

A process of assembling lamps comprising the steps of executing function A, executing function B, executing function C and executing function D.

(E) Product, process and apparatus

An applicant is permitted to include independent claims to a product, independent claims to a process for preparing that product and independent claims to an apparatus specially adapted to carry out the process in an application (Refer to 14.02 (e) above).

(F) Product, process, apparatus and use

An applicant is permitted to include independent claims to a product, independent claims to a process for preparing that product and independent claims to an apparatus specially adapted to carry out the process and independent claims to the use of the

product (Refer to 14.02 (f) above).

14.03 Acceptable claim groupings

Applications may contain certain groups of subject matter including combinations and subcombinations, intermediates and final products and Markush claims. Each of these groups may contain claims or elements of claims which could be claimed in separate applications but because they incorporate a single general inventive concept they may be permitted in a single application. The following examples illustrate acceptable claim groupings.

14.03.01 Combination and subcombination claims

To be allowable in one application, a claim to a combination and one to a subcombination must be directed to the same inventive concept. It must be seen that the subcombination is truly the same invention as the combination.

Where the function or utility of the subcombination is essentially that of the combination, claims to the two may be allowed together. A viscosity-reducing oil additive and oil containing the additive would normally be allowed in one application. The purpose of the inventive additive is to improve the properties of the substance with which it is mixed.

On the other hand an anticorrosion agent per se and a composition containing the agent cannot be claimed in the same application if in the claimed composition, the agent has lost its original anticorrosion effect and, instead, acts as an insecticide.

A second invention may also be present when a subcombination is claimed together with one or more combinations containing it, and it is clear that the purpose, use or function of a combination differs from that of the subcombination. For example, in a process having a principal step A of heating composition X to produce composition Y, a claim to step A may not be allowable with a claim to step A followed by step B. For example, these two claims could not be allowed in the same application if step B comprised an ingenious transformation of Y to produce a newly invented composition Z that differed in function from its intermediate Y.

14.03.02 Markush claims

A Markush claim is a claim which covers selected members of a genus as contrasted to all the members of the genus, so as to exclude inoperative members of the group.

Markush groupings will be considered to be directed to one invention when all of the members of the group have a common basic structure and/or a common property or activity is present. In those cases where a common property or activity is present, all of the members are expected to behave in the same way in the context of the claimed invention.

14.03.03 Intermediates and final products

A final product and an intermediate product used in the preparation of the final product may be claimed independently in the same application only when there is sufficient structural similarity between the two such that it can reasonably be assumed that the intermediate was designed to prepare the final product. The intermediate may also have the same use as the final product, but it must not have any other use. Any other use of this intermediate may be considered a further invention. Furthermore, the final product should be manufactured directly from the intermediate or from the intermediate via a small number of other intermediates having similar structure.

14.04 Unacceptable claim grouping

There may be a variety of claims drafted which share one or more common features but which do not ensure that there is a single general inventive concept defined by each of the claims. The examples characterized in 14.04.01 show such unacceptable claims.

14.04.01 Linking claims

Applications may not contain separate claims linked together by the subject matter of a third claim.

For example:

- (a) Claim 1 to the substance A.
Claim 2 to the substance B.
Claim 3 to the combination of A and B.

- (b) Claim 1 to the combination of A, B and C.
Claim 2 to the combination of E, F and G.
Claim 3 to the combination of C, D and E.

In Example (a) Claims 1 and 2 are directed to different substances and in Example (b) Claims 1 and 2 are directed to different combinations.

The presence of linking Claims 3 in both examples does not justify the inclusion of unrelated subcombinations in one application and restriction is required under Section 36(1) of the *Patent Act* and Section 36 of the *Patent Rules*.

It should be noted that in the first example Claim 3 could be maintained in an application with either Claim 1 or Claim 2, but not both.

In example (b) none of claims 1, 2, or 3 could be allowed in the same application with any other of claims 1, 2, or 3 because they each define a distinct combination. Claims 1 and 3 could be allowed together if the application contained an allowable claim to subcombination C. Claims 2 and 3 could be allowed together if the application contained an allowable claim to subcombination E.

14.05 Divisional applications

When unity of invention does not exist, the applicant may voluntarily limit the claims to one invention only, and any other invention described may be made the subject of a divisional application (section 36(2) of the *Patent Act*). Such a divisional application must be filed before the issue of a patent on the original application.

Further, where an original application describes and claims more than one invention, the applicant must, on the direction of the Commissioner, limit the claims to one invention only and any other invention described may be made the subject of a divisional application, if the divisional application is filed before the issue of a patent on

the original application (section 36(2.1) of the *Patent Act*).

Under section 36 of the *Patent Act*, it is not required that an applicant claim the various inventions that may be described in the specification in order to file a divisional application; it is only required that the applicant describe the various inventions.

Divisional applications will retain the filing date of the original applications. Further, any priorities requested respecting the original applications will be automatically carried forward to divisional applications subsequently filed. If the applicant wishes to withdraw one or more priority requests he/she may so indicate in the petition of the divisional application.

It should be noted that when filing divisionals under subsection 36(2), of the *Patent Act*, the applicant may contravene subsection 36(2.1) of the *Patent Act* by inserting claims to more than one invention in a divisional application. This case could arise when an applicant describes three or more inventions in an original application.

When the examiner is reasonably certain that more than one invention is being claimed, the claims are grouped by invention and the applicant is requisitioned to limit the claims to one invention (subsection 36(2.1) of the *Patent Act*).

When two or more groups of claims are present in an application, only one of the groups of claims is examined. A requisition for restriction of the claims to one invention will usually be made in the examiner's first report along with any other objections to the group of claims under examination.

It is also possible that, during the examination process, the claims of an application may be amended in such a manner that two or more inventions are being claimed. The examiner will make a requisition for restriction to one invention at that time.

14.05.01 Time limits for divisional applications

Examination of divisional applications filed on the basis of an original application that was filed on or after October 1, 1996 must be requested before the expiry of the later of the five year period after the filing date of the original application and the six month period after the date on which the divisional application is actually filed (subsection

96(2) of the *Patent Rules*).

For divisional applications filed on the basis of an application that was filed between October 1, 1989 and October 1, 1996, the examination request must be made before the expiry of the later of the seven year period after the filing date of the original application and the six month period after the date on which the divisional application is actually filed (subsection 150(2) of the *Patent Rules*). Under subsections 36(2) and 36(2.1) of the *Patent Act*, a divisional must be filed "before the issue of a patent on the original application". Sections 2 and 6 of the Interpretations Act establish that a patent is granted and issued at the end of the day preceding the date of issue, since instruments issued on a particular day come into force upon the expiration of the previous day. Consequently a divisional application may not be filed on the day of issue of the patent on the original application.

The time for filing a divisional of an abandoned application terminates with the expiration of the time for reinstating the original application.

14.06 Examination for divisional status

An application for which the applicant has requested divisional status will be accorded the filing date of the parent application. The applicant may be required to withdraw his request for divisional status if it is subsequently determined that the application contains new matter not described in the parent application.

Any application that satisfies the requirements of subsections 36(2) and 36(2.1) of the *Patent Act* may be given the status of a divisional application at any time during its prosecution.

For divisional applications with an examination request, the question of divisional status will be settled as soon as possible after receipt of the request for examination and before any action on the merits of the application is issued. If divisional status is refused, the applicant will be informed.

14.06.01 Divisional applications open to inspection

A divisional application will be open to public inspection in accordance with Section 10 of the *Patent Act* if the parent application is already open to inspection. If the parent application is not open to public inspection, the divisional application and parent application will be opened to public inspection at the same time.

Any application filed as a divisional will be opened to public inspection 18 months from the filing date of the original application or the date of the earliest previously filed application on the basis of which a request for priority has been made (subsections 10(2) and 36(4) of the *Patent Act*). Should the application be refused divisional status because it contains new subject matter, the new subject matter may also be opened to public inspection and may constitute a bar to the issuance of a patent to the applicant for that subject matter.

Divisional applications based on original applications filed prior to October 1, 1989 will not be opened to public inspection.

14.06.02 No new matter in specification

A determination of the presence of new matter in the specification and drawings of a divisional application as outlined in the following paragraphs will be made only after a request for examination of the divisional is received.

The specification and drawings of a divisional application must be restricted to what has been described in the specification and drawings of the parent application. If new matter which was not part of the parent application as originally filed is included in the specification or drawings of a divisional application when it is filed, the applicant is advised by examiner's report that the new application is not entitled to divisional status.

Where both the petition and specification refer to divisional status, the examiner's report requisitions that the new matter be removed within a specified time or all references to divisional status be deleted. In those cases where only the petition refers to divisional status, the examiner's report requisitions the applicant to delete the new matter or to delete reference to divisional status from the petition within a specified time. Failure to comply with the examiner's report may result in the rejection of the application in a final

action. If the applicant retains new matter in the specification and drawings but removes all reference to divisional status, the application will be given the date it was received in the Patent Office as its filing date.

If during the prosecution of a divisional application an applicant amends to add new matter, an examiner's action is issued requisitioning deletion of the new matter. Any further examiner's action on the same ground may be made final.

14.06.03 Further divisional

A divisional application may itself be divided. The further divisionals may be filed after the original parent application has issued, as long as they are filed before the issue of their particular parent application. For example, an application describing three inventions A,B and C may be divided as follows: divisional 1 describing and claiming inventions B and C and divisional 2 describing and claiming invention C. If the original application has issued, divisional 1 must describe inventions B and C in order for divisional 2 to have a proper parent.

The effective filing date of each divisional application is the filing date of the original application.

If a divisional application is derived from a parent application which is itself a division of an earlier application, the front cover of the last divisional must clearly indicate the relationship between the various applications in the following form: Div. of 735xxx filed Sept.9, 1987 (Division of 619xxx filed Aug. 6, 1984).

14.06.04 The petition of a divisional

The petition of a divisional application must refer to its divisional status (section 77 of the *Patent Rules* and Item 2 of Form 3, Schedule I of the *Patent Rules*). If such a reference is missing from the petition at the time of filing, an Office letter is sent under paragraph 94(1)(a) of the *Patent Rules* requisitioning a new petition before the expiration of the time period specified in subsection 94(2) of the *Patent Rules*. If the applicant fails to comply, a Commissioner's notice is sent requisitioning the applicant to provide a petition in conformance with Form 3 of Schedule 1 of the *Patent Rules*. The notice will carry the time limit specified in subsection (94)(1) of the *Patent Rules* and

require payment of the fee specified in Item 2 of Schedule II of the *Patent Rules*.

If an application at filing is not entitled to divisional status, for example, if the examiner refuses divisional status upon receipt of the request for examination there should be no reference to division either in the petition or in the specification. It should be noted that an application not entitled to divisional status will be given as its filing date the actual day that it was received in the Patent Office. The applicant would be entitled to request priority based on any earlier regularly filed application which had been filed within the preceding 12 months.

In the above situations, an examiner's report is sent detailing the reasons for not recording the divisional status and giving the applicant the option of rectifying the cause for not recording divisional status or amending the application to remove any reference to divisional status from the petition and the specification (if present). The amendment must take the form of a replacement petition and any page of the specification affected.

If the applicant argues that divisional status should be retained the application may be rejected in a final action.

14.07 Divisional applications and fees

Divisional applications are considered to be separate and distinct applications. Therefore, any fee which is applicable to an ordinary application will be applicable to a divisional application. Since a properly filed divisional application will bear the filing date of the parent application, a divisional application is, at the time of filing, subject to fees to maintain the application in effect. Such fees will be calculated from the filing date of the parent application and are payable upon the filing of the divisional application (subsection 99(3) of the *Patent Rules*). Moreover, such a divisional application will be subject to the prescribed fee upon a request for examination pursuant to subsection 35(1) of the *Patent Act*. Finally, any patent resulting from the a divisional application is subject to the appropriate fees to maintain the patent. (section 46 of the *Patent Act* and subsection 100(1) of the *Patent Rules*).

14.08 Jurisprudence

The following decisions of the courts are of importance in considering the subject matter of this chapter:

Short Milling v George Weston	ExCR	69	1941
Rohm & Haas v Comm of Patents	30 CPR	113	1959
Lovell v Beatty	41 CPR	18	1962
Boehringer v Bell-Craig	39 CPR	201	1962
Comm of Pat v Farbwerke	41 CPR	9	1963
	SCR	49	1964
Xerox v IBM	33 CPR (2d)	24	1977
Consolboard v MacMillan	56 CPR (2d)	145	1981
	1 SCR	504	1981
Radio Corp v Hazeltine	56 CPR (3d)	170	1981
Re: Hedstrom	31 CPR (3d)	324	1989

Chapter 14

Appendix of

Examples relating to unity of invention

I. Claims in different categories

Example 1

Claim 1: A method of manufacturing chemical substance X.

Claim 2: Substance X.

Claim 3: The use of substance X as an insecticide.

Unity exists between claims 1, 2 and 3. The special technical feature common to all the claims is substance X.

Example 2

Claim 1: A process of manufacture comprising steps A and B.

Claim 2: Apparatus specifically designed for carrying out step A.

Claim 3: Apparatus specifically designed for carrying out Step B.

Unity exists between claims 1 and 2 or between claims 1 and 3. There is no unity between claims 2 and 3 since there exists no common special technical feature between the two claims.

Example 3

Claim 1: A process for painting an article in which the paint contains a new rust inhibiting substance X including the steps of atomizing the paint using compressed air, electrostatically charging the atomized paint using a novel electrode arrangement A and directing the paint to the article.

Claim 2: A paint containing substance X.

Claim 3: An apparatus including electrode arrangement A.

Unity exists between claims 1 and 2 where the common special technical feature is the paint containing substance X or between claims 1 and 3 where the common special technical feature is the electrode arrangement A.

However, unity is lacking between claims 2 and 3 since there exists no common special technical feature between them.

Example 4

Claim 1: Use of a family of compounds X as insecticides.

Claim 2: Compound X₁ belonging to family X.

Provided X₁ has the insecticidal activity and the special technical feature in claim 1 is the insecticidal use, unity is present.

Example 5

Claim 1: A process for treating textiles comprising spraying the material with a particular coating composition under special conditions (e.g. as to temperature, irradiation).

Claim 2: A textile material coated according to the process of claim 1.

Claim 3: A spraying machine for use in the process of claim 1 and characterized by a new nozzle arrangement providing a better distribution of the composition being sprayed.

The process according to claim 1 imparts unexpected properties to the product of claim 2.

The special technical feature in claim 1 is the use of special process conditions corresponding to what is made necessary by the choice of the particular coating. Unity exists between claims 1 and 2.

The spraying machine in claim 3 does not correspond to the above identified

special technical feature. Unity does not exist between claim 3 and claims 1 and 2.

Example 6

- Claim 1: A fuel burner with tangential fuel inlets into a mixing chamber.
- Claim 2: A process for making a fuel burner including the step of forming tangential fuel inlets into a mixing chamber.
- Claim 3: A process for making a fuel burner including casting step A.
- Claim 4: An apparatus for carrying out a process for making a fuel burner including feature X resulting in the formation of tangential fuel inlets.
- Claim 5: An apparatus for carrying out a process for making a fuel burner including a protective housing B.
- Claim 6: A process of manufacturing carbon black including the step of tangentially introducing fuel into a mixing chamber of a fuel burner.

Unity exists between claims 1, 2, 4 and 6. The special technical feature common to all the claims is the tangential fuel inlets. Claims 3 and 5 lack unity with claims 1, 2, 4 and 6 since claims 3 and 5 do not include the same or corresponding special technical feature as set forth in claims 1, 2, 4 and 6. Claims 3 and 5 would also lack unity with one another.

Example 7

- Claim 1: A high corrosion resistant and high strength ferritic stainless steel strip consisting essentially of, in percent by weight: Ni=2.0-5.0; Cr=15-19; Mo=1-2; and the balance Fe having thickness of between 0.5 and 2.0 mm and a 0.2% yield strength in excess of 50 kg/mm squared.

Claim 2: A method of producing a high corrosion resistant and high strength ferritic stainless steel strip consisting essentially of, in percent by weight: Ni=2.0-5.0; Cr=15-19; Mo=1-2; and the balance Fe comprising the steps of:

hot rolling to a thickness between 2.0 and 5.0 mm;

annealing the hot rolled strip at 800-1000 degrees C under substantially non-oxidizing conditions;

cold rolling the strip to a thickness of between 0.5 to 2.0 mm; and final annealing the cold rolled strip at between 1120 and 1200 degrees C for a period of 2-5 minutes.

Unity exists between product claim 1 and process claim 2. The special technical feature in the product claim is the 0.2% yield strength in excess of 50 kg/mm squared. The process steps in claim 2 inherently produce a ferritic stainless steel strip with a 0.2% yield strength in excess of 50 kg/mm squared. Even if this is not apparent from the wording of claim 2, it is clear from the description. These process steps are the special technical feature which correspond to the limitation in the product claim directed to the same ferritic stainless steel with the claimed strength characteristics.

II. Claims in the same category

Example 8

Claim 1: Plug characterized by feature A.

Claim 2: Socket characterized by corresponding feature A.

Feature A is a special technical feature which is included in both claims 1 and 2 and therefore unity is present.

Example 9

Claim 1: Transmitter provided with time axis expander for video signals.

Claim 2: Receiver provided with time axis compressor for video signals received.

Claim 3: Transmission equipment for video signals comprising a transmitter provided with time axis expander for video signals and a receiver provided with time axis compressor for video signals received.

The special technical features are in claim 1 the time axis expander, and in claim 2 the time axis compressor, which are corresponding technical features. Unity exists between claims 1 and 2. Claim 3 includes both special technical features and has unity with claims 1 and 2. The requirement for unity would still be met in the absence of the combination claim (claim 3).

Example 10

Claim 1: Conveyor belt with feature A.

Claim 2: Conveyor belt with feature B.

Claim 3: Conveyor belt with features A + B.

Feature A is a special technical and feature B is another unrelated special technical feature. Unity exists between claims 1 and 3 or between claims 2 and 3, but not between claims 1 and 2.

Example 11

Claim 1: Control circuit A for a d.c. motor.

Claim 2: Control circuit B for a d.c. motor.

Claim 3: An apparatus including a d.c. motor with control circuit A.

Claim 4: An apparatus including a d.c. motor with control circuit B.

Control circuit A is a special technical feature and control circuit B is another unrelated special technical feature. Unity exists between claims 1 and 3 or between claims 2 and 4, but not between claims 1 and 2 or 3 and 4.

Example 12

Claim 1: A display with features A + B.

Claim 2: A display according to claim 1 with additional feature C.

Claim 3: A display with features A + B with additional feature D.

Unity exists between claims 1, 2 and 3. The special technical feature common to all the claims is features A + B.

Example 13

Claim 1: Filament A for a lamp.

Claim 2: Lamp B having filament A.

Claim 3: Searchlight provided with lamp B having filament A and a swivel arrangement C.

Unity exists between claims 1, 2 and 3. The special technical feature common to all the claims is the filament A.

Example 14

Claim 1: A marking device for marking animals, comprising a disc-shaped element with a stem extending normally therefrom, the tip of which is designed to be driven through the skin of the animal to be marked, and a securing disk element to be fastened to the protruding tip of the stem on the other side of skin.

Claim 2: An apparatus for applying the marking device of claim 1, constructed as a pneumatically actuated gun for driving the stem of the disc-shaped element through the skin, and provided with a supporting surface adapted for taking up a securing disc element, to be placed at the other side of the body portion in question of the animal to be marked.

The special technical feature in claim 1 is the marking device having a disc-shaped element with a stem and a securing disc element to be fastened to the tip of the stem. The corresponding special technical feature in claim 2 is the pneumatically actuated gun for driving the marking device and having a supporting surface for the securing disc element. Unity exists between claims 1 and 2.

Example 15

Claim 1: Compound A.

Claim 2: An insecticide composition comprising compound A and a carrier.

Unity exists between claims 1 and 2. The special technical feature common to all the claims is compound A.

Example 16

Claim 1: An insecticide composition comprising compound A (consisting of $a_1, a_2 \dots$) and a carrier.

Claim 2: Compound a_1 .

All compounds A are not claimed in the product claim 2 for reasons of lack of novelty of some of them for instance. There is nevertheless still unity between the subject matter of claims 1 and 2 provided a_1 has the insecticidal activity which is also the special technical feature for compound A in claim 1.

Example 17

Claim 1: Protein X.

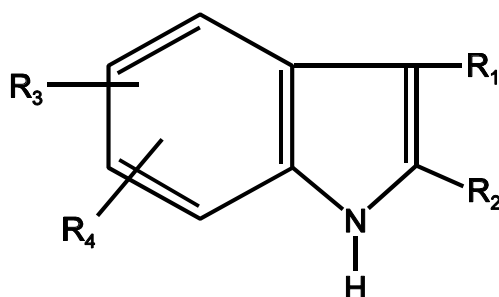
Claim 2: DNA sequence encoding protein X.

Expression of the DNA sequence in a host results in the production of a protein which is determined by the DNA sequence. The protein and the DNA sequence exhibit corresponding special technical features. Unity between claims 1 and 2 is accepted.

III. Markush practice

Example 18 - common structure:

Claim 1: A Compound of the formula:

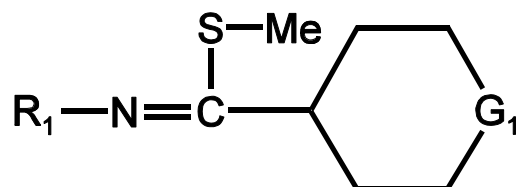


Wherein R_1 is selected from the group consisting of phenyl, pyridyl, thiazolyl, triazinyl, alkylthio, alkoxy and methyl; $R_2 - R_4$ are methyl, benzyl or phenyl. The compounds are useful as pharmaceuticals for the purpose of enhancing the capacity of the blood to absorb oxygen.

In this case the indolyl moiety is the significant structural element which is shared by all of the alternatives. Since all the claimed compounds are alleged to possess the same utility, unity is present.

Example 19 - common structure:

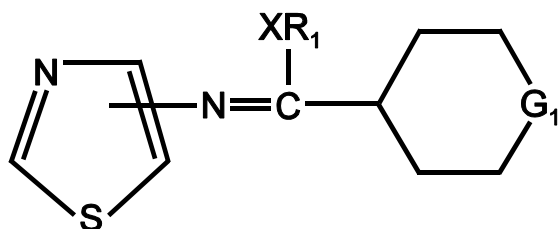
Claim 1: A compound of the formula:



Wherein R₁ is selected from the group consisting of phenyl, pyridyl, thiazolyl, triazinyl, alkylthio, alkoxy and methyl; G₁ is selected from the group consisting of oxygen (O), sulfur (S), imino (NH) and methylene (-CH₂-). The compounds are alleged to be useful as pharmaceuticals for relieving lower back pain. In this particular case the iminothioether group -N=C-Me linked to a six atom ring is the significant structural element which is shared by all the alternatives. Thus, since all the claimed compounds are alleged to possess the same use, unity would be present. A six membered heterocyclic ring would not have been of sufficient similarity to allow a Markush grouping exhibiting unity, absent some teaching of equivalence in the prior art.

Example 20 - common structure:

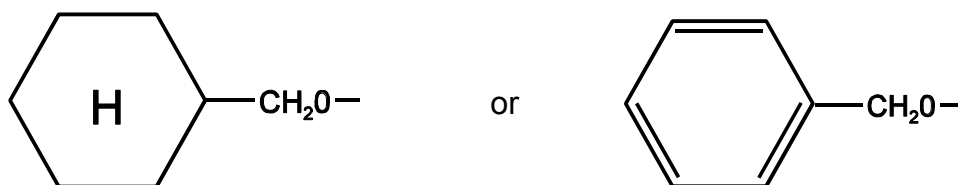
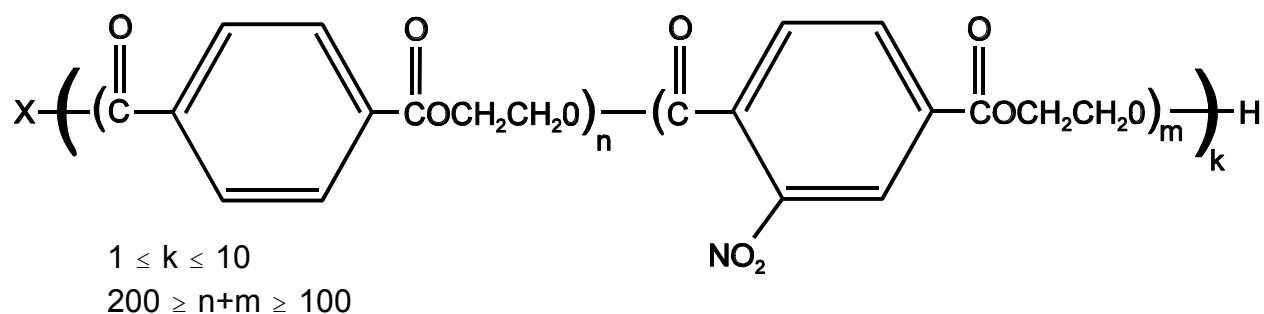
Claim 1: A compound of the formula:



Wherein R₁ is methyl or phenyl, X and G₁ are selected from oxygen (O) and sulfur (S). The compounds are useful as pharmaceuticals and contain the 1,3-thiazolyl substituent which provides greater penetrability of mammalian tissue which fact makes the compounds useful as relievers for headaches and as topical anti-inflammatory agents.

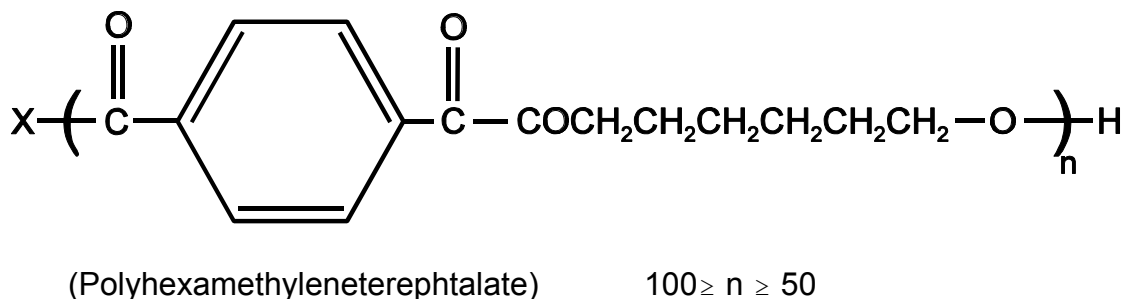
All compounds share a common chemical structure, the thiazole ring and the six atom heterocyclic compound bound to an imino group, which occupy a large portion of their structure. A six membered heterocyclic ring would not have been of sufficient similarity to allow a Markush grouping exhibiting unity, absent some teaching of equivalence in the prior art.

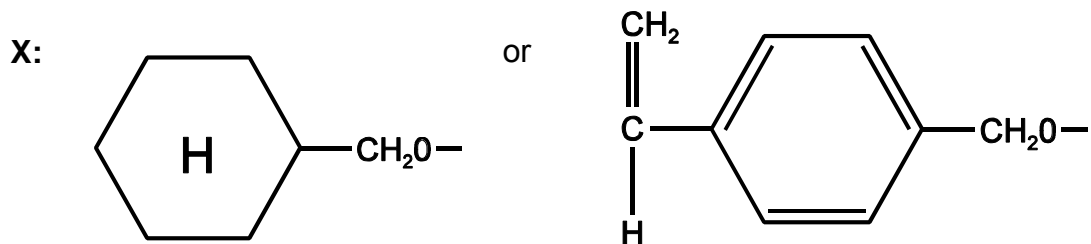
Example 21 - common structure:



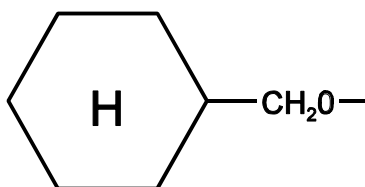
All of the above copolymers have in common a thermal degradation resistance property, due to the reduced number of free COOH radicals by esterification with X of the end COOH radicals which cause thermal degradation. The chemical structures of the alternatives are considered to be technically closely interrelated to one another. A grouping in one claim is therefore allowed.

Example 22 - common structure:

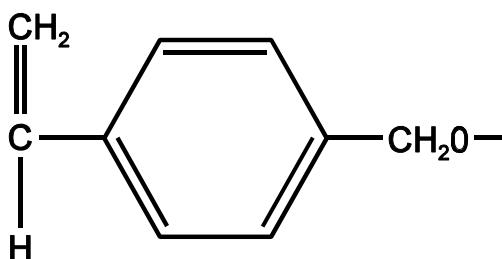




The compound obtained by esterifying the end COOH radical of known polyhexamethyleneterephthalate with



has a thermal degradation resistant property, due to the reduced number of free COOH radicals which cause thermal degradation. In contrast, the compound obtained by esterifying the end COOH radical of known polyhexamethyleneterephthalate with



serves as raw material for a setting resin when mixed with unsaturated monomer and cured (addition reaction).

All compounds covered by the claim do not have a property or activity in common. For example, the product obtained through esterification with the " $\text{CH}_2=\text{CH}$ " compound does not have a thermal degradation resistant property. The grouping in a single application is not allowed.

Example 23 - No common structure:

Claim 1: A herbicidal composition consisting essentially of an effective amount of the mixture of A 2,4-D (2,4-dichlorophenoxy acetic acid) and B a second herbicide selected from the group consisting of copper sulfate, sodium chlorate, ammonium sulfamate, sodium trichloroacetate, dichloropropionic acid, 3-amino-2,5-dichlorobenzoic acid, diphenamid (an amide), ioxynil (nitrile), dinoseb (phenol), trifluralin (dinitroaniline), EPTC (thiocarbamate) and simazine (triazine) along with an inert carrier or diluent.

The different compounds under B must be members of a recognized class of compounds. Consequently in the present case a unity objection would be raised because the members of B are not recognized as a class of compounds, but, in fact, represent a plurality of classes which may be identified as follows:

a) inorganic salts:

copper sulfate
sodium chlorate
ammonium sulfamate

b) organic salts and carboxylic acids:

sodium trichloroacetate
dichloropropionic acid
3-amino-2,5-dichlorobenzoic acid

c) amides:

diphenamid

d) nitriles:

ioxynil

e) phenols:

dinoseb

f) amines:

trifluralin

g) heterocyclic:

simazine

Example 24

Claim 1: Catalysts for vapor phase oxidation of hydrocarbons, which consists of (X) or (X+a)

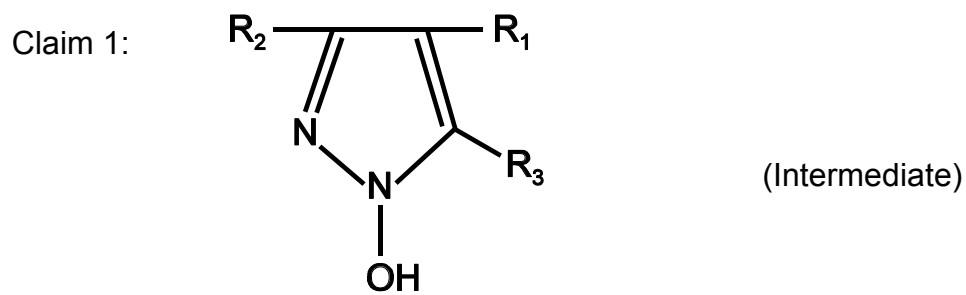
In this example (X) oxidizes RCH_3 into RCH_2OH and (X+a) oxidizes RCH_3 further into $RCOOH$.

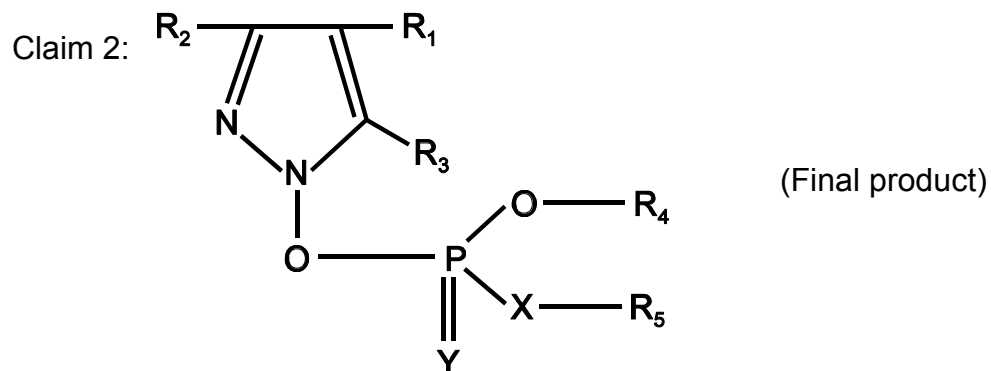
Both catalysts share a common component and a common activity as oxidation catalyst for RCH_3 . With (X+a) the oxidation is more complete and goes until the carboxylic acid is formed but the activity still remains the same.

A Markush grouping is acceptable.

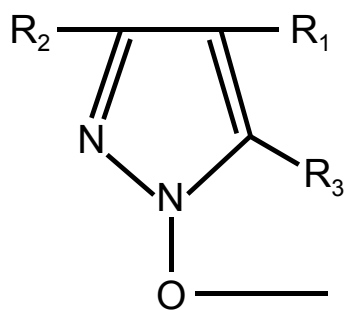
IV Intermediate/final products

Example 25





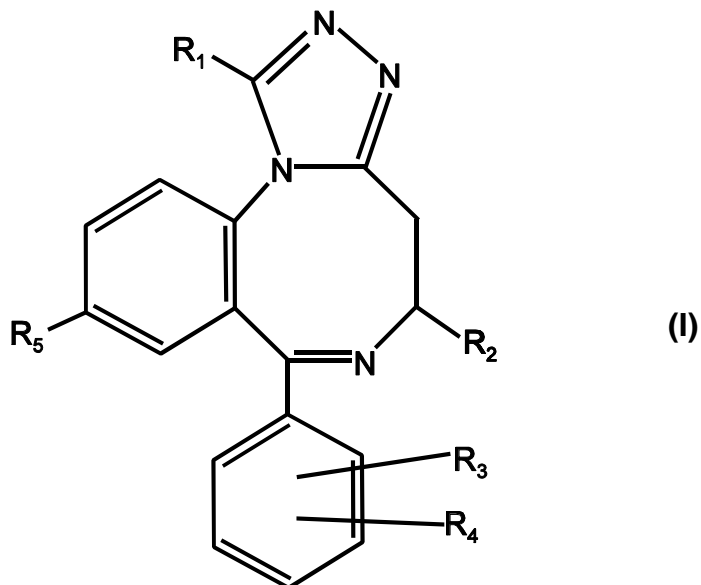
The chemical structures of the intermediate and final product are technically closely interrelated. The essential structural element incorporated into the final product is:



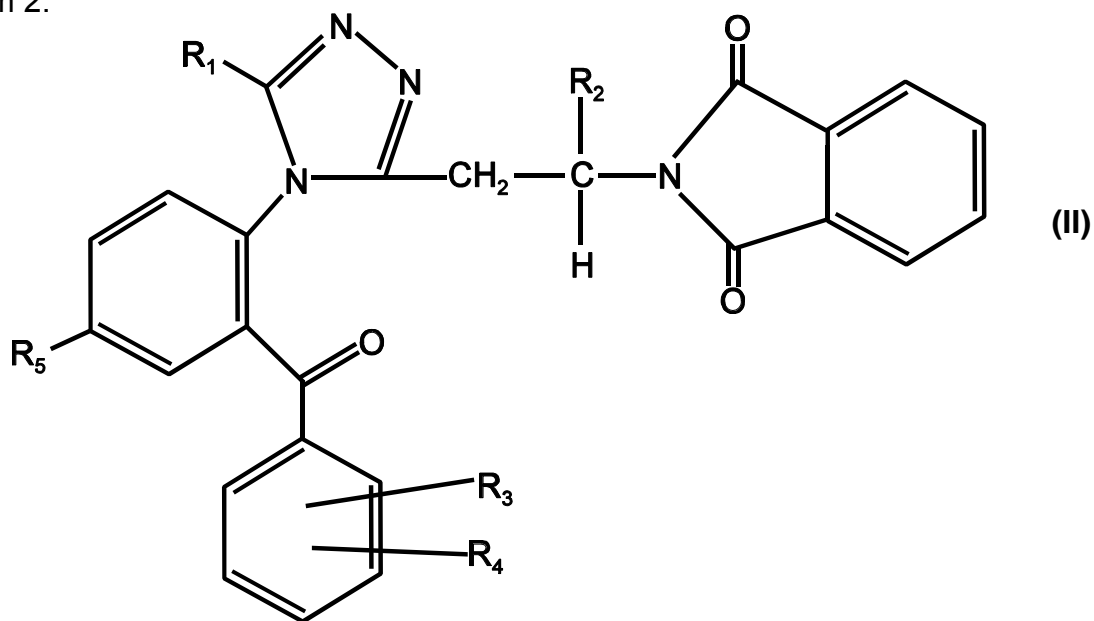
Therefore, unity exists between claims 1 and 2.

Example 26

Claim 1:



Claim 2:



(II) is described as an intermediate to make (I). The closure mechanism is one well known in the art. Though the basic structures of compound (I) (final product) and compound (II) (intermediate) differ considerably, compound (II) is an open ring precursor to compound (I). Both compounds share a common essential structural element which is the linkage comprising the two phenyl rings and the triazole ring. The chemical structures of the two compounds are therefore considered to be technically closely interrelated.

The example therefore satisfies the requirement for unity of invention.

Example 27

Claim 1: Amorphous polymer A (intermediate).

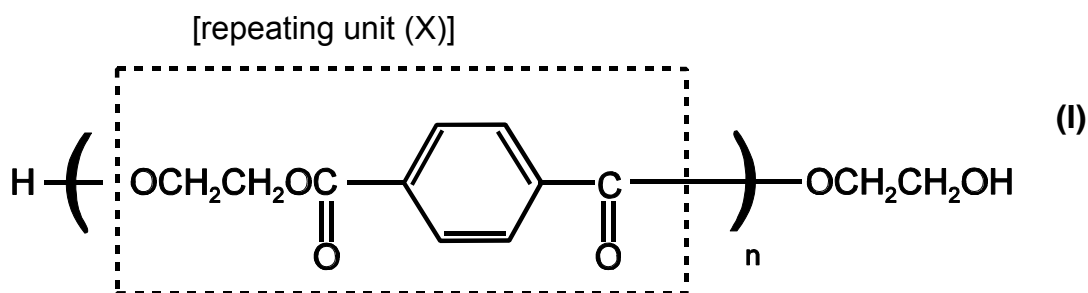
Claim 2: Crystalline polymer A (final product).

In this example a film of the amorphous polymer A is stretched to make it crystalline. Here unity exists because there is an intermediate final product relation in that amorphous polymer A is used as a starting product to prepare crystalline polymer A.

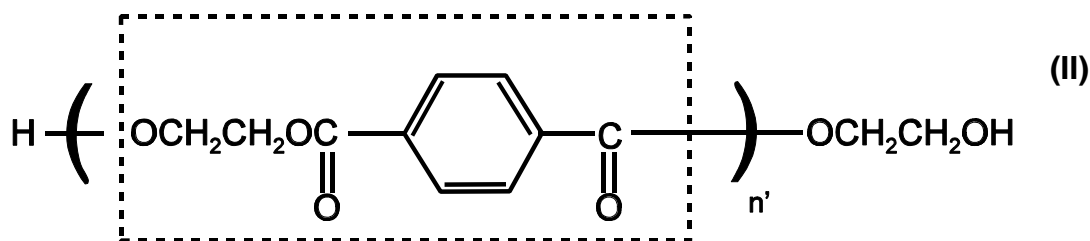
For purposes of further illustration, assume that the polymer A in this example is polyisoprene. Here the chemical structures of the intermediate, amorphous polyisoprene and the final product, crystalline polyisoprene have the same chemical structure.

Example 28

Claim 1: Polymeric compound useful as fiber material identified by the following general formula:



Claim 2: Compound identified by the following general formula: (useful as intermediate for polymeric compound I)



(primary condensation product)

The two inventions are in an intermediate and final product relationship.

Substance (II) is a raw material for substance (I).

Meanwhile, both compounds share an essential structural element (repeating unit (X)) and are technically closely interrelated. The intermediate and final products therefore satisfy the requirements for unity.

Example 29

Claim 1: Novel compound having structure A. (Intermediate).

Claim 2: Product prepared by reacting A with a substance X. (Final Product).

Example 30

Claim 1: Reaction product of A and B. (Intermediate).

Claim 2: Product prepared by reacting the reaction product of A and B with substances X and Y. (Final Product).

In examples 29 and 30 the chemical structure(s) of the intermediate and/or the final product is not known. In (29) the structure of the product of claim 2 (the final product) is not known. In (30) the structures of the products of claim 1 (the intermediate) and claim 2 (the final product) are unknown. Unity exists if there is evidence which would lead one to conclude that the characteristic of the final product which is the inventive feature in the case are due to the intermediate. For example, the purpose for using the intermediates in (29) or (30) is to modify certain properties of the final product. The evidence may be in the form of test data in the specification showing the effect of the intermediate on the final product. If no such evidence exists then there is no unity on the basis of an intermediate-final product relationship.