Mathematical Model for Determination of Lack of Unity of Invention

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ABSTRACT: The unity of invention is defined as the same and common technical feature which is present within the scope of the invention having the entire feature closely related to the scope of the main patent application so the invention comply the unity of the invention. Previously to determine unity of invention it was needed to identify the scope of the invention manually by reading the claim and study the invention. In this paper an equation is been formulated which is used to determine the lack of unity of invention, by applying the given equation it is not required to manually identify unity of invention or lack of unity of invention but through this equation it can be easily identified by putting the value in the equation to determine lack of unity of invention If the scope of the invention is different from the scope of the main invention it is need to file divisional application having different scope of the invention with respect to the parent patent application.so it is identify that By increasing the number of new features which is having different scope from with respect to the main application it substantially is proven that by increasing the number of new features is required to increase the number of new divisional applications.

KEYWORDS: Divisional Application, Feature, Scope Of The Invention, Unity Of Invention

I. INTRODUCTION

The present equation which is defined in the paper is related to the lack unity of the invention wherein the parent application includes the two or more inventions in the single patent application so it requires splitting the two or more inventions into the two or more divisional applications on the direction of the controller[1]. If the invention having the new concept which is different from the scope of the parent invention so for that new concept and feature it is required to file an additional divisional application in most of the case controller is determine the new concept if the new concept present in the one single application so examiner needs to search two inventions in the cost of one invention so it needs to divide that new concept or feature in the different application that occurs on the direction of the controller. an applicant itself can file for the divisional application but most of cases controller only give direction to break the application into two or more application because of it needs to examine the two or more invention in the single application or in cost of one application so it is not acceptable to examine the two or more invention in the coast of one invention so it is required to split the invention in the two or more different invention. There are the various type of the invention used to examine mentioned below[2].

Ordinary patent application: ordinary patent application is the type of national application which is directly filed to the national offices which may be a file with the provisional application or without the provisional application wherein the provisional application gives the one year grace period in which the inventor can do some development in the invention or if the concept of the invention is present even the prototype is not present so they can file a provisional application in the other side ordinary application can file without the provisional application wherein the provisional application is the rough draft of the complete specification so it is not mandatory to file the provisional application. The ordinary application directly files to the national office with the prescribed fees which are different for the individual, startup, small entity, and large entity. The provisional application is used to take the place of the priority date[3].

Patent of addition: patent of addition is the type of patent application in which the invention pertains to the improvement of the invention in which improvement pertains within the scope of the main invention wherein patent of addition should include the reference of the main patent application .patent of addition is the type of application in

which the subsequent application need to file for the improvement as well as the modification of the invention[4].in the patent, the main invention is protected and in the patent of addition improvement on the invention is protected which is disclosed in the main patent application. The patent of addition can file any time in the term of 20 years and life of patent of the addition is equal to the life of the main patent if someone files a patent of addition after the 10 years of the main patent so the life of patent of addition will be remaining 10 year which is equal to the remaining life of the main patent. Every patent of addition application claims the priority date of the main application and only the inventive step needs to examine within the scope of the invention for the examination of the invention[5][4].

Divisional application: Divisional application is the split type of application in which the patent application pertains to the more than one invention and the divisional application filed on the direction of the controller to split the main application into the two or more invention if the patented invention. Contains more than one invention so it needs to divide the main parent application into the two or more different divisional application for proceeding the different invention in the further stage. The main concept of the divisional application pertains to simply divide the invention, if the one parent invention or patent application comprises two or more invention in the single patent application so it is required to divide the invention into the two or more different invention by filling the two or more different patent application. a divisional application is not an ordinary type of the patent application so it cannot be file with using the provisional application and the priority date of the divisional application is the date of parent application which is filled at the office of the first filling[6].

Conventional application: convention application is the type of the application which is filled in the convention country within the duration of the one year from the basic filing in the main country .if the applicant is filing the patent application in the home country or the ordinary application in the home country then the applicant may file the further application in another country which is the signatory part of the Paris convention within the duration of the one year. A provisional application cannot be filed in the case of the conventional application. The priority date in the case of the convention application is the date of main application which is filled in the home country by means of if the applicant files the main application in his home country and within the duration of one-year applicant file the convention application in the different countries which is the signatory part of the Paris Convention or any group of the country then the priority date of filing the application in the all country is the date in which he files the application in his home country[7].

PCT Application: PCT application is an international application which is filed under the patent co-operation treaty it is an international type of application filed under the patent co-operation treaty to secure the application in the various different country in the procedure to file the patent application under the patent co-operation treaty is similar as the conventional application wherein the patent co-operation treaty provide the duration of 30-31 month to proceed the application in the national phase. Procedure for filing an international application is similar like the convention application wherein the applicant needs to file the complete specification in his home country and then within the duration of the one year applicant need to file the PCT international phase application directly to his national receiving office or to the receiving office to the international bureau (RO/IB) after filing the international application within the three month the PCT office generate the international search report on applying the criteria of novelty non-obviousness and industrial applicability after obtaining the search report by the applicant can take decision if the search report is in the favor of applicant or invention has novel so the applicant proceed further for the filling of national phase application or if the search report is not novel so the applicant need to correct the claims of the invention and then further proceed to file the national phase application wherein the national phase is the actual phase in which the patent application is really search and examine by the national offices where in actual the patent application getting grant[8][9].

II.   RESEARCH QUESTION

1) How the present technique identify the unity of invention to determine the scope of the invention.
2) Does the present technique helps to identify by lack of unity of invention by any person who is skilled in the art.

III. REVIEW OF LITERATURE

Takashi Miyazawa and Hiroshi Osada* in the year of 2010 in research paper on Quantitative indicators for evaluating the competitiveness of a patent identify that the unity of invention in which discussion on that unity of invention

where each plural independent claim partially overlap with another claim in order to satisfy requirement of unity of invention .assume there are n number of independent claim which are pertains to the common inventive step then each independent claim cover the same technology scope or and partially overlap the other independent claim of the same technology then it satisfy the unity of invention in another word if the n number of independent claim present in the given technology so the new claim if partially cover all the independent claim so it satisfy the unity of invention claim or if the new claim not partially cover the previous claim then it is not satisfied the unity of invention and for the claim which is not satisfied the unity of invention it is need to file divisional application. If the number of patents present in the previous the new claim require safe or not to infringe the previous claim but if the previous no patent is filed so new independent claim requires to cover the maximum scope of the invention and not required to safe from another invention. due to that invention having different scope which is different from the previous claim . is required to make plural independent claims to fully cover the maximal scope within the restriction of the unity of invention.

Various research has been done in the field of the unity of invention if the patent application includes two or more invention in the single specification so on the direction of controller require to split the invention into two or more different divisional application before the patent getting grant of the invention .the divisional application is the application filing for the different inventive concept or when the two or more invention present in single invention which need to split in two different inventions by filing the divisional application.

IV. METHODOLOGY

The present technique pertains to identifying the lack of unity of invention by applying the mathematical model in form of equation which is used to determine the condition for the unity of invention where if the invention comprises two or more invention in the single patent application so the invention required splitting in 2 or more invention on the direction of the controller before the grant of the main invention.

INSTRUMENT: The various terms include such as X ,Y ,Z consider as the independent feature for the one common invention in which no new inventive concept present in the equation, and another terms such as X' ,Y' ,Z' are the terms present for the different and new inventive concept over the existing concept by means of X' ,Y' ,Z' are the new feature over the existing invention which make a new divisional invention wherein if the new inventive concept present so that feature mark with the X' ,Y' ,Z' and if no new inventive concept present it is mark with simple X,Y,Z,. A defined as the new invention and A' is defined as the new divisional invention for the new inventive concept.

DATA ANALYSIS: The present equation relates to the mathematical model which is used to determine the number of divisional applications need to file for the maximum N different features.so it is identified that if the number of the new features present in the invention which is not satisfied the unity of invention so it is required to file the new divisional application for that N new features.

Assume the A=X+Y+Z for the one invention without having the another different invention related to divisional application

A=X+Y+Z

X= Inventive feature.

X' =inventive feature present for divisional application or X' not satisfied unity of invention.

Y= Inventive feature

Y'= inventive feature present for divisional application or Y' not satisfied unity of invention.

Z= Inventive feature

Z'= inventive feature present for divisional application or Z' not satisfied unity of invention

If the no new inventive feature present for divisional application

So A=X+Y+Z

The above equation define for the invention having 1 common inventive concept .where the invention a comprising the 3 feature related to one common inventive concept.

SO If the invention includes the different inventive concept for the divisional application the new feature mark with the X',Y',Z' and if no new feature present for divisional application feature mark with the X,Y,Z.

A=(X+X')+(Y+Y')+(Z+Z')……………………….   Equation 1

A=(X+X')+(Y+Y')+(Z+Z')…………(N+N')   ……………. Equation 1

The equation 1 may carry the N New feature for the N divisional equation.

If the new inventive concept not present so equation mark with the simple term of X,Y,Z but if the new concept present for the equation mark with the X',Y',Z'

Assume

New feature for divisional application for X and Y not present but for Z new feature is present which is marked as the new feature for Z as the Z'

$A=(X+X')+(Y+Y')+(Z+Z')$……………………   Equation 1

$A=(X+0) +(Y+0)+(0+Z')$

Due to the Z' it is require to file a new fresh divisional application which is marked as A'

$A+A'= (X+0)+(Y+0)+(0+Z')$

$A+A'=X+Y+Z'$

$A+A'=(X+Y)+Z'$

X+Y is the novel feature of the parent main patent

So   Assume

$A=X+Y$

The $A=X+Y$ is the main parent patent comprising the n features

And

$A'=Z'$

Consider if the Z' is having the one new feature so A' need to file one new divisional application if the Z' having the N new feature so the Z' having N new divisional application

Assume $Z'=1$

SO $A'=1$

IF $Z'=2$

SO $A'=2$

Assume $Z'=3$ having the 3 new feature so the it is need to file the 3 new different divisional application for the three new different feature and concept.

So

$Z'=3$

$Z'=A'$

SO $A'=3$ Number of the divisional application over the lack of unity of invention.

If $Z'=4$

SO $Z'=A'$

$A'=4$ Number of the divisional application over the lack of unity of invention.

IF $Z'=5$

So $Z'=A'$

$A'=5$ Number of the divisional application over the lack of unity of invention.

Assume the number of new feature is the 6 so from the above analysis the number of divisional application is also increase to number of 6
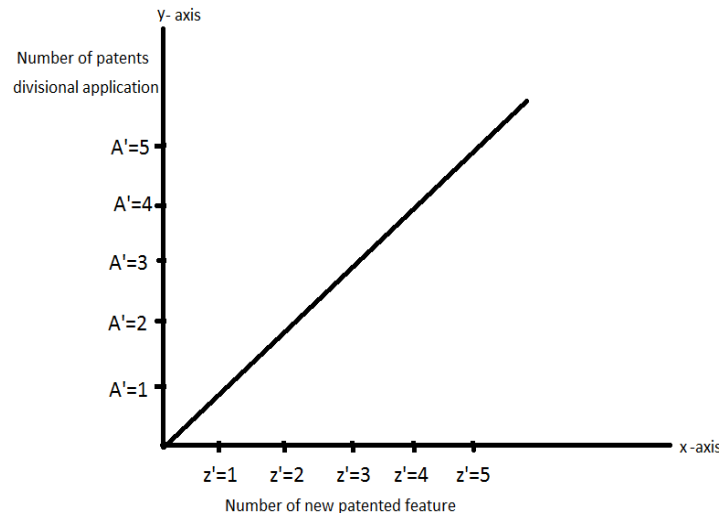
$Z'=6$

SO $Z'=A'$

$A'=6$

Figure 1: Graphical Representation of Unity of Invention

Fromthe above graph in Figure 1, it is indicated that by increasing the number of feature in the one patent application which not satisfying the criteria for the unity of invention so it needs to file the separate divisional application for each new feature so from the above graph it is proved that divisional application is proportional to the number of the new inventive feature present in the invention.

From the above graph, it is identified that by increasing the number of the patent in the different scope or the invention which are not satisfied the concept of the unity of the invention or in which the one parent patent application includes the two or more different invention so it is required to file the different patent application which is divided from the main patent application that split type patent applications are the divisional patent application. In the above graph, it is indicated that by increasing the number of the different feature due to which a new divisional application need to file that new feature indicated by the Z' and the new application which is needed to file due to the presence of the new feature that application is indicated by the A' so by increasing the number of the new feature of concept it needs to file a new divisional application. From the above-mentioned graph it is clearly defined the by increasing the feature Z' the divisional application A' also increasing wherein it is shown that by increasing Z'=2 so A' is also increasing by requiring to file one new divisional application for the feature Z'=2 so A'=2. Similarly, if the Z'=3 so A'=3 and so on the graph will be plot linearly.

V.   RESULT

The present equation pertains to identifying the lack of unity of invention criteria wherein the invention does not pertain to the single inventive concept idea due to which it needs to file different inventions for the newly identified feature on the direction of the controller. The present technique use to identifying the new feature and concept due to which it needs to apply for new divisional applications for each new identifying concept and wherein each new concept pertains to the new divisional application.

The present equation provides the proportionality between the number of new features which is not satisfying the unity of the invention and number of the new divisional applications wherein from the above analysis it is identifying that the by increasing number of new feature it is also required to file a new divisional application. Moreover from the above equation, it is mentioned that the parent application is considered as the "A" which is comprising the N feature within the scope of the invention such as the X,Y,Z wherein due to N feature present within the scope of the invention it is not required to file any divisional application but if the new feature present in the invention which is not present within the scope of the invention or not satisfying the unity of the invention criteria or pertains to lack of unity of invention so it is required to file a separate divisional application for a new inventive concept.

The present equation it is determined that by increasing the number of new feature which is present outside the scope of the invention it is need to file new divisional application for the each new feature from the above analysis it is identifying that the by increasing the number of feature which is not satisfying unity of invention it is need to file new

divisional application let consider the parent application is A and the number of feature present within the scope of parent application is X,Y,Z and the new concept which is not satisfying the unity of the invention that is mentioned by Z' and the new divisional application for the new feature is mentioned as the A' so from the above equation it is identifying that by increasing the value of Z' as a new feature outside the scope of the invention the number of divisional application is also increasing assume Z' =1 so the A' is also equal to the 1 if the consider the Z'=2 means number of new feature is 2 which is outside the scope of the parent invention so the number of new divisional application required to file is 2 because of Z'=A' similarly if the Z'=3 so the number of divisional application require to files is 3 similarly for the Z'=N new feature it is require to file N divisional application so it is prove that number of new feature outside the scope of the invention is proportional to number of new divisional application

N new feature $\propto$ N divisional application

By increasing the N new feature the requirement to file N new invention also increasing.

VI. CONCLUSION

The present equation pertains to unity of invention criteria wherein if the one parent invention include more than one invention which is having the different scope of the invention it needs to file the divisional application for the new invention and the new feature.so each new feature which is not satisfying unity of invention criteria it is required to file a new divisional application for that new feature on the direction of the controller before the patent grant. The divisional application can file any time before the patent grant and the term of a divisional application is equal to the main application.

In the present equation, it has been identifying that if the number of features increasing and falls outside the scope of the invention or not satisfying the criteria of the unity of the invention so it needs to file the divisional application for the new features present in the invention. Furthermore from the above equation, it is identifying that by increasing the number of the feature which is not satisfying the unity of invention so the number of divisional application will also increase for those features which are not satisfying unity of the invention. So by increasing the number of a new feature the number of divisional application also increasing which is shown in the graphical representation if the number of the feature is increasing indicated by the Z' so the number of a divisional application is also increasing indicating by the A' because of Z'=A' so by increasing Z' in form of new feature so A' also increasing.

The present equation subject to various changes and modification by the person skilled in the art wherein the present equation describe that by increasing the number of feature in the invention which is not satisfying the criteria of the unity of the invention than the number of divisional application also require to increase in another word due to increasing the number of features which is present outside the scope of the invention the number of divisional application also required to increase. Hence the given equation proves that by increasing new feature which are outside the scope of the invention the number of divisional application also increase and graph plot in a linear way.

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