Patent families at the EPO

AUTHOR: European Patent Office
DATE: July 2017
WHAT IS A PATENT FAMILY?

A patent family is a collection of related patent applications that is covering the same or similar technical content. The applications in a family are related to each other through priority claims.

The applicant of a patent application has the so-called “right of priority”. The “right of priority” is a time-limited right triggered by the first filing of an application for a patent. To make use of the right of priority the applicant can “claim the priority” of the first application when filing a subsequent application.

When the applicant is filing a subsequent application on the same invention within a twelve-month period starting from the filing date of the first application, the applicant can “claim priority” from the first application. If the priority claim is valid, the date of filing of the first application is considered to be the effective date of filing for the subsequent applications.

The EPO is supporting two patent family concepts in EPO products and services:

- **DOCDB simple patent family**
  a collection of related patent applications that is covering the same technical content

- **INPADOC extended patent family**
  a collection of related patent applications that is covering similar technical content
PATENT FAMILIES AT THE EPO

Patent families at the EPO are constructed by automated process based on the priorities claimed. Once in the database, the patent families are improved and refined by intellectual intervention in a joint effort by examiners and editorial teams, based on technical content.

DOCDB Simple Patent Family

A simple patent family is a collection of patent documents that are considered to be covering one single invention. The technical content covered by the applications in one simple patent family is considered to be identical.

Patent applications that are members of one simple patent family will have all priorities in common with all of the other members.

When building the simple patent family, not all the priorities that are listed in the Espacenet bibliographic data are taken into account.

The priorities that will be taken into account when building a simple patent family are:

- **first filings**
  a “first filing” is a foreign application claimed under the Paris Convention

- **provisional first filings**
  a “provisional first filing” is a US provisional application

- **equivalents to first filings**
  an “equivalent to a first filing” is a US continuation in part

There is a special rule for

- applications that are a [continuation of an existing “parent” application](#)
- applications that are a [division of an existing “parent” application](#)

Continuations and divisions are considered to be covering the same technical content as the “parent” application. Continuations and divisions will always be in ONE patent family with the “parent” application, regardless of the priorities that they are claiming.

In Espacenet the DOCDB simple patent family is represented under the heading “Also published as” as a list of equivalents.
INPADOC Extended Patent Family

An extended patent family is a collection of patent documents that cover a technology. The technical content covered by the applications in one extended patent family is similar but not necessarily the same.

Patent applications that are members of an extended patent family will have at least one priority in common with at least one of the other members – either directly or indirectly.

When building the extended patent family, ALL priorities that have been listed in the Espacenet bibliography are taken into account.

The priorities that will be taken into account when building the extended patent family are:

1. first filings, provisional first filings or equivalents to a first filing:
   • a first filing – a foreign application under the Paris Convention
   • a provisional first filing – a US provisional application
   • an equivalent to a first filing – a US continuation in part

2. Priorities that refer to an earlier related application:
   • an earlier related domestic application
   • an earlier related PCT filing

In Espacenet the INPADOC extended patent family is displayed by clicking the button “INPADOC patent family”.

FREQUENTLY ASKED QUESTIONS

Why do application-numbers not always match the numbers as printed on the first page?

Building patent families based on priorities claimed requires a degree of normalisation in the numbers.

Applications that are members in one patent family may claim one and the same application in different representations. In order to be able to build families based on the priorities claimed, applications that are members in one patent family have to claim one and the same application in one and the same representation.

That is why application-numbers in Espacenet do not always match the application-numbers as printed on the first page. In order to be able to build patent families based on the priorities claimed, the application-numbers as originally printed on the first page have been normalised into a standard format.

Why is the application itself sometimes repeated in the list of priorities?

Building patent families based on priorities claimed may require the addition of a copy of the application itself to the list of priorities.

A copy of the application is added to the list of priorities when:
- the application is a “first filing”
- the application is claiming a domestic application

Application is a “first filing”

When the application is a “first filing”, the application is not claiming any priority under INID (30). All other applications that are covering the same technical content will be claiming the first filing for priority under INID (30).

Without adding a copy of the application itself to the list of priorities, other applications that cover the same technical content would not be in the same family – they would not claim the same priorities.

Application is claiming a domestic application

When the application is claiming a domestic application for continuation, for division or for continuation in part, the application is a partner in an “application-to-application” relationship. Any application that will be added to the “application-to-application” relationship refers to the applications that have preceded it.

Without adding a copy of the application itself to the list of priorities, the application that is added to the relationship would not be able to connect to the applications that are already in the relationship.
What is a “provisional application”?

A “provisional” application provides the means to establish an early effective filing date in a later filed “non-provisional” application. The later filed “non-provisional” application is the genuine first filing. The “provisional” application will only be a “provisional” first filing for as long as the “genuine” first filing has not been filed.

The “non-provisional” application claiming the benefit of the provisional application needs to be filed within 12 months after the “provisional” application has been filed.

“Provisional application” is a concept that is specific to US Patent Law.

What is a “continuation in part”?

A “continuation in part” is an application where subject matter has been added that has not been disclosed in the “parent” application:

- a substantial portion of the specification is repeated
- subject matter that is repeated is entitled to claim the filing date of the “parent” application
- subject matter that is added is only entitled to claim the filing date of the “continuation in part”

The “continuation in part” will introduce new technical content. This makes the “continuation in part” an application that is “equivalent to a first filing”. The “continuation in part” will not feature in the same simple patent family as the “parent” application, but in a new family.

“Continuation in part” is a concept that is specific to US Patent Law.

What is a “continuation”?

A “continuation” is an application where claims have been added to an invention that has been disclosed in the “parent” application:

- the subject matter in the patent application is identical to that of the “parent” application
- the priority is claimed based on the filing date of the “parent” application

The “continuation” will not introduce new technical content. The “continuation” will feature in the same simple patent family as the “parent” application.

What is a “division”?

A “division” or “divisional” is an application that is covering a distinct invention which however has already been disclosed in the “parent” application:

- the distinct invention is “carved out” of the “parent” application
- the priority is based on the filing date of the “parent” application

One patent can only claim one single invention. When for instance the examiner has detected “non-unity of invention”, the applicant will be requested to file a “division” to include only the claims that relate to the distinct invention.

The “division” will not introduce new technical content. The “division” will feature in the same simple patent family as the parent application.
EXAMPLES

What is a Patent Family?

Patent family

A patent family is a collection of related patent applications covering the same or similar technical content. The applications in this family are all covering the same technical content. The applicant has filed for protection in the United States and in Canada.

The technical content covered in all of the patent applications in this family is:

*The object of the invention concerns a coffee capsule (1), in particular a Nespresso tm; compatible capsule that improves the yield of the product obtained through the use of a depression or concavity (6) on the side where the water and/or steam enters the capsule, using a radial variation of the flow of the water and/or steam entering along an axis parallel to the axis of the capsule.*
Right of priority

The applicant has first filed the application for his patent in Italy – in his country of residence. The applicant has then filed a subsequent application in the United States within the time-limit of twelve months set by the Paris Convention – INID-codes (21) and (22).

When filing the subsequent application in the United States, the applicant is claiming the first filing in Italy for right of priority – INID-code (30).

His invention will be protected in the United States from the priority-date of the first filing onwards.
The simple patent family is particularly suited for the purpose of prior art search. Every document in a simple patent family is considered to be covering exactly the same technical content:

- the simple patent family will help reduce the work-load: look at one document and you have seen them all

- the simple patent family will help overcome language barriers: look at the document in the language that suits you best.
All priorities in common with all other members

The Danish application is the first filing. It is claiming a copy of the application itself for priority. See also Why is the application itself sometimes repeated in the list of priorities?.

The Canadian application is a subsequent filing. It is claiming the Danish application as a first filing and an earlier PCT filing for reference.

Looking at the bibliographic data in Espacenet, the two applications are NOT claiming identical priorities. From the point of view of the simple patent family, these two applications ARE claiming identical priorities.

In the DOCDB simple patent family, the only priorities that count are priorities that claim an application that is a first filing, a provisional first filing or an equivalent to a first filing.
Claiming a “First Filing”

An application that is claiming a “first filing” is claiming a foreign application under the Paris Convention. Under the Paris Convention, the priority must be claimed within 12 months after the first filing has been applied for.

An application claimed for priority under the Paris Convention is represented in INID (30).

---

Claimed within 12 months after the first filing has been filed

Foreign application claimed under the Paris Convention

---
Claiming a “Provisional First Filing”

An application that is claiming a “provisional first filing” is claiming a US provisional application under the Paris Convention.

A provisional application claimed under the Paris Convention is represented in INID (30) on the first page. In the case of US publications the provisional application is found on the first page under the heading “Related US application data”.

When is the US provisional application NOT a provisional first filing

The US provisional application is NOT a “provisional” first filing when it is being claimed next to a foreign application that has been claimed under the Paris Convention.

In that case the foreign application is the genuine first filing and the US provisional application has lost its purpose as a “provisional” first filing.
When the US provisional application is NOT a “provisional” first filing, the priority is NOT being taken into account, when building the DOCDB simple patent family.
Claiming an “Equivalent to a First Filing”

An application that is claiming an “equivalent to a first filing” is claiming a US application that is a "continuation in part". The "continuation in part" is “equivalent” to a first filing because it is adding new technical detail.

This is an example of four related applications – one “first filing” and three “continuation in part”:
- the first filing – US 11/182970 – discloses “wraparound lacing”
- the continuation in part of the first filing – US 11/195219 – adds “raised ridge members”
- the continuation in part of the continuation in part of the first filing – US 11/328593 – adds “recessed cavities”
- the continuation in part of the continuation in part of the continuation in part of the first filing – US 11/448967 – adds a “floating anatomical protector”.

The four applications individually are disclosing new technical detail with every filing. The four applications feature in four DOCDB simple patent families.

The four applications together are a collection of related applications that cover similar technical content. The four applications are members of one INPADOC extended patent family.
Continuation of an existing “parent” application

This is an example of a “continuation” that is claiming a “parent” application. The continuation is adding detail to the claims without extending the technical coverage.

Application US 14/274083 is a continuation of “parent” application US 14/353105
Adding detail to the claims without adding technical content

This example is comparing the claims of parent application US 14/353105 against the claims of application US 14/274083 that is a continuation of the parent application. The objective of this example is to illustrate the concept of adding details to the claims without extending the technical coverage.

The parent application in this example is US 14/353105.

The snapshot below is listing claims 1 to 10 of the parent application – there are 17 claims in total. The application that is a continuation of this parent application will add new detail between claims 1 and 8 without extending the technical coverage.

1. A drive system for rotating a wheel of an aircraft landing gear, the drive system including a motor operable to rotate a first drive pinion via a first drive path, and a drive gear adapted to be fixed to the wheel, wherein the drive system has a first configuration in which the first drive pinion is capable of meshing with the driven gear to permit the motor to drive the driven gear via the first drive path, and wherein one of the first drive pinion and the driven gear comprises a first sprocket and the other of the first drive pinion and the driven gear comprises a series of rollers arranged to form a ring, each roller being rotatable about a roller axis at a fixed distance from an axis of rotation of the first drive pinion or driven gear, respectively.

2. A drive system according to claim 1, wherein each of the series of rollers is rotatable about a pin, the pins each being fixed at at least one end to an annular support member.

3. A drive system according to claim 1, wherein the first drive pinion comprises the first sprocket and the driven gear comprises the series of rollers.

4. A drive system according to claim 1, wherein the drive system is switchable between the first configuration and a third configuration in which the first drive pinion is not capable of meshing with the driven gear.

5. A drive system according to claim 1, including a second drive pinion, the motor being operable to rotate the second drive pinion via a second drive path, wherein the drive system is switchable between the first configuration and a second configuration in which the second drive pinion is capable of meshing with the driven gear to permit the motor to drive the driven gear via the second drive path, wherein one of the second drive pinion and the driven gear comprises a second sprocket and the other of the second drive pinion and the driven gear comprises the series of rollers, and wherein the first drive path has a lower gearing ratio than the second drive path.

6. A drive system according to claim 5, wherein the second drive pinion comprises the second sprocket and the driven gear comprises the series of rollers.

7. A drive system according to claim 1, wherein the drive system is switchable between the first and second configurations and a third configuration in which neither the first nor second drive pinions are capable of meshing with the driven gear.

8. An aircraft landing gear having a wheel and a drive system according to claim 1, wherein the drive pinion of the drive system is fixed to the wheel.

9. A drive system for rotating a wheel of an aircraft landing gear, including a motor, a first drive pinion rotatable by the motor via a first drive path, a second drive pinion rotatable by the motor via a second drive path, and a drive gear adapted to be fixed to the wheel, wherein the drive system is switchable between a first configuration in which the first drive pinion is capable of meshing with the driven gear to permit the motor to drive the driven gear via the first drive path, and a second configuration in which the second drive pinion is capable of meshing with the driven gear to permit the motor to drive the driven gear via the second drive path, and wherein the first drive path has a higher gearing ratio than the second drive path.

10. A drive system according to claim 9, wherein the drive system is switchable between the first and second configurations and a third configuration in which neither the first drive pinion nor the second drive pinion is capable of meshing with the driven gear.
The continuation of the parent application in this example is US 14/274083.
The snapshot below is listing claims 1 to 9 of the continuation – there are 9 claims in total.

Claim number 9 in the continuation is claim number 8 of the parent application. Claim numbers 1 to 7 are adding new detail without extending the technical coverage:

- claim 2 is new
- claim 4 is new – referring to new claim 2
- claim 6 is new – adding to existing claim 1
- claim 7 is new – referring to new claim 6
- claim 8 is new – referring to new claim 7
- claim 9 is claim 8 of the parent application

Link to original document:
Division of an existing “parent” application

This is an example of a “division” that is claiming a “parent” application. The division is “carving out” detail from the claims without extending the technical coverage.

Application EP 14172713 is a division of “parent” application EP 13194416
“Carving out” detail from the claims without adding technical content

This example is comparing the claims of parent application EP 13194416 against the claims of application EP 14172713 that is a division of the parent application. The objective of this example is to illustrate the concept of “carving out” detail from the claims without extending the technical coverage.

The parent application in this example is EP 13194416. The snapshot below is listing claims 1 to 15 of the parent application – there are 15 claims in total. The claims of the parent application refer to a phone holder and to aspects like charger and antennas. In the application that is a division of this parent application the details that refer to the distinct invention of the “phone holder” have been “carved out”.

Claims 4, 5, 10 and 11 – for instance – are referring to aspects like charger and antennas. The application that is a division of this parent application will not support those claims any more.

1. A phone holder for holding a mobile phone, the holder including: lateral support means; and insert means for locating between the lateral support means and the phone.
2. A phone holder as claimed in claim 1, wherein the insert means is replaceable.
3. A phone holder as claimed in claim 1 or claim 2, wherein the lateral support means is manufactured separately and fastenable to a common body used with holders for multiple phone types.
4. A phone holder as claimed in any one of claims 1 to 3, including a location means by which the phone can detect that it is located in or near the holder to facilitate the phone enabling Applications (Apps) or functions.
5. A phone holder as claimed in claim 4, wherein the location means includes a near field communication (NFC) integrated circuit (IC).
6. A phone holder as claimed in any one of claims 1 to 5, wherein the insert means is located between said lateral support means and at least one lateral edge of the phone.
7. A phone holder as claimed in any one of claims 1 to 6, wherein the lateral support means includes a pair of molded jaws between which a display of the held phone can be located.
8. A phone holder as claimed in any one of claims 1 to 7, wherein the insert means includes a pair of resilient inserts.
9. A phone holder as claimed in claim 8, wherein each insert defines inwardly extending ribs.
10. A phone holder as claimed in any one of claims 1 to 9, including a phone charger for charging the held phone.
11. A phone holder as claimed in any one of claims 1 to 10, including an auxiliary antenna arrangement for coupling to an antenna of the held phone to boost reception.
12. A phone holder as claimed in any one of claims 1 to 11, further including a pair of rails, a phone connector able to move along the rails, and at least one spacer for spacing the connector along the rails.
13. A phone holder as claimed in any one of claims 1 to 12, further including a phone base support, the support including a pair of positioning members defining a channel for receiving and positioning a phone connector, and at least one insert for positioning the connector relative to an upper surface of the support.
14. A phone holder as claimed in any one of claims 1 to 13, further including an upper member and a lower member, between which a phone connector can be secured.
15. A phone holder for holding a mobile phone, the holder including: a support for supporting a phone and including a connector for connecting to the phone.

Link to original document:
The division of the parent application in this example is EP 14172713.

The snapshot below is listing claims 1 to 15 of the division – there are 15 claims in total.

The claims that have been “carved out” into the division only refer to the actual phone holder.

1. A phone holder for holding a mobile phone, the holder including: a support for supporting a phone and including a connector for connecting to the phone.
2. A phone holder as claimed in claim 1, wherein the support is reconfigurable to reposition the connector to suit the phone.
3. A phone holder as claimed in any one of claims 1 or claim 2, wherein the connector includes one or more engagement ribs.
4. A phone holder as claimed in claim 3, wherein the support includes one or more rails with which the ribs engage.
5. A phone holder as claimed in claim 3, wherein the support includes one or more plates with which the ribs engage.
6. A phone holder as claimed in claim 2, wherein the connector can be reconfigured axially.
7. A phone holder as claimed in claim 6, wherein the support includes: a spacer including separable parts for spacing the connector at a desired location, or a spacing arrangement for increasing the protrusion of the connector from a phone engagement surface to accommodate for a phone cover.
8. A phone holder as claimed in claim 1, wherein the support includes a pair of male and female locating portions for locating the connector.
9. A phone holder as claimed in claim 8, wherein each portion includes a flat plate, and a receptacle for receiving the connector.
10. A phone holder as claimed in claim 1, wherein the support includes an upper portion and lower portion for locating the connector.
11. A phone holder as claimed in claim 10, wherein the upper portion defines a space for receiving the connector.
12. A phone holder as claimed in claim 10 or claim 11, wherein the lower portion defines a space for receiving the connector.
13. A phone holder as claimed in any one of claims 10 to 12, further including snap fittings for snap fitting the upper and lower portions together whilst retaining the connector.
14. A phone holder as claimed in any one of the preceding claims, wherein the support includes a peripheral lip to facilitate sitting engagement with a base of the holder.
15. A phone holder for holding mobile phones, the holder including: supports for fitting to the holder to support different phones, the supports including connectors in different positions to facilitate connecting to respective phones.

Link to original document:
INPADOC Extended Patent Family

Similar technical content

Applications that are members of an extended patent family cover technical content that is similar but not necessarily the same. The INPADOC extended patent family is covering a technology rather than one single invention and will generally contain more than one invention.

The example below shows three applications out of an extended patent family with 227 members. These three applications are covering three different inventions:

- the one with the most recent priority-date is covering the “control of a personal transporter”
- the one with the earliest priority-date is covering a “human transporter”
- the one somewhere between the two is covering a “motion control for a transporter”
At least one priority in common with at least one other member

Applications that are members of an extended patent family will have to have at least one priority in common with at least one of the other members – directly or indirectly. That means that it may happen that members at either end of the family tree will not have one single priority in common with each other.

The picture below serves the purpose of illustrating the principle of two family members not having one single priority in common. It is not an actual reflection of the corresponding extended patent family. The shapes at the top of the picture represent the priorities that are being claimed in this extended family. The images represent the applications that are members in this INPADOC extended patent family.

The two applications at either end of the tree do not have one single priority in common – directly. They are members in ONE extended patent family, because they have priorities in common – indirectly.

The application that covers “human transporter”
- is claiming the priority that covers “wheelchair technology”
- is claiming the priority that covers “stair walking device”

The application that covers “control based on user position”
- is claiming the priority that covers “pitch control device”
- is claiming the priority that covers “transporter technology”

The application that covers “mode of operation” has one priority in common with each of the applications:
- it is claiming “stair walking device” also claimed by “human transporter”
- it is claiming “pitch control device” also claimed by “control based on user position”
Why is the application itself sometimes repeated in the list of priorities

Application is a “first filing”

Priority is a copy of the application itself

Without adding a copy of the application itself, applications that cover the same content would not be in the same family
Application is claiming a domestic application

<table>
<thead>
<tr>
<th>Page bookmark</th>
<th>US 2007011910 (A1) - Shoe with lacing</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Application number:</strong></td>
<td>US20050182970 20050715</td>
</tr>
<tr>
<td><strong>Priority number(s):</strong></td>
<td>US20050182970 20050715</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Page bookmark</th>
<th>US 2007011911 (A1) - Shoe with lacing</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Application number:</strong></td>
<td>US20050195214 20050802</td>
</tr>
<tr>
<td><strong>Priority number(s):</strong></td>
<td>US20050195214 20050802; US20050182970 20050715</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Page bookmark</th>
<th>US 2007011912 (A1) - Shoe with lacing</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Application number:</strong></td>
<td>US20060328593 20060110</td>
</tr>
<tr>
<td><strong>Priority number(s):</strong></td>
<td>US20060328593 20060110; US20050195214 20050802; US20050182970 20050715</td>
</tr>
</tbody>
</table>

**Priority is a copy of the application itself**

Without adding a copy of the application itself, new applications added to the application-to-application relationship would not be able to connect to the applications that have preceded it.