File your own Provisional Patent Toolkit

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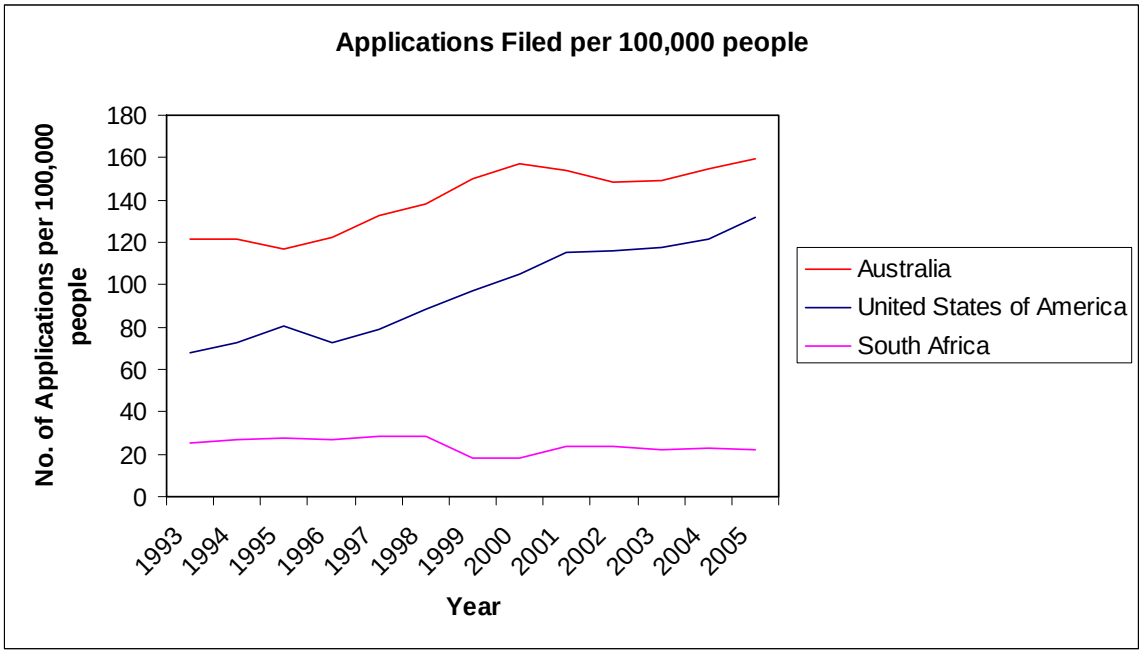
Opening the door to Intellectual Property

Kreepy Krauly, Pratley's Putty, the Cat Scan, the first successful heart transplant, the Rooivalk attack helicopter and Sasol's leading coal and gas-to-liquid technology are just a few of many inventions born and developed in South Africa. If these inventions are proof of South Africa's ability to innovate, why is it that the South African wheel of innovation is gradually losing momentum?

If we compare the patent records of Australia, the US and South Africa it is clear that patent filings internationally follow an increasing trend, whereas South African patent filings are on the decline, with filings reducing by 24% from a recorded high in '98 and low in 2000.

Some may argue that this is due to stagnation of our creativity and skills. However, the number and quality of inventions receiving SABS design awards appears to contradict this. Could it not be that our patenting costs are too high and that the average inventor lacks access to our patenting system?



Graph 1: Patent applications filed per 100,000 people in Australia, United States and South Africa during the period 1993 to 2005.

We believe so, and if correct, a reduction in patenting costs should increase the number of South African patent filings, resulting in a higher number of commercially successful products, which in turn would increase our competitiveness and stimulate our economy.

www.ideanav.co.za (an affiliate of Sibanda & Zantwijk Patent Attorneys) aims to empower inventors by providing tools that navigate ideas to successful products.

Slashing your patenting costs

Due to the prohibitively high cost of filing patents, a large number of South African inventions are never protected.

The patenting process in South Africa generally comprises three steps: conducting a novelty search; filing a provisional patent application; and filing a complete patent application (claiming as a priority date the date on which the provisional application was filed). Patent attorneys' fees for carrying out the above steps are between R12,200 and R50,000, depending on the firm selected and complexity of the invention.

A novelty search identifies pre-existing disclosures and is crucial to determining the patentability of inventions. This is a critical step. Many patentees spend vast amounts on patents and setting up manufacturing facilities only to find out much later that their inventions are not novel and their patents worthless.

A provisional patent application sets a date (the priority date) on which the novelty of a subsequently filed complete patent application is determined. The provisional patent application affords the inventor a year: to develop the invention; disclose the invention freely to investors; conduct market and manufacturing research; and ultimately incorporate resultant modifications / additions into the subsequently filed complete patent application. It also provides the inventor with time to decide whether the expense of filing a complete patent application is commercially viable.

Once granted, a complete patent gives the patentee a 20 year monopoly in South Africa - no one else may make, use, exercise, dispose of, advertise or import the patented goods. If a complete patent application is not filed within a year from the priority date, the provisional patent application lapses.

Although patent attorneys are the only persons authorised by law to file complete patent applications, anyone can conduct novelty searches and file provisional patent applications. Inventors with internet access are able to conduct novelty searches through the freely accessible electronic databases of the US, UK, European and Canadian Patent Offices, to name but a few. The Search Tool available at www.ideanav.co.za searches five of the main patent databases simultaneously.

Inventors may also file provisional patent applications directly at the South African Patent Office at a cost of R60. However, this option comes with its own risks: the use of incorrect terminology when conducting novelty searches may fail to uncover important pre-existing disclosures; and a poorly self-drafted provisional patent application may not provide sufficient information to support a subsequent complete patent application, resulting in a patent of limited scope.

The good news is that these risks can be managed, as discussed below.

Drafting and filing a provisional patent application for R60

Now that you have decided to file a provisional patent application, can you really do so without the assistance of a patent attorney? On average, more than 50% of South African provisional patent applications, representing approximately 2,500 applications per year, are filed directly by inventors. But, before joining this group of practical inventors you need to understand a few basic concepts.

It is true that a patent specification is a technical document, but the legal requirements for a valid provisional patent are few. Basically, it need only describe comprehensively the features ultimately claimed in the subsequently filed complete specification. The format of the provisional specification is also not dictated by the Patents' Act. However, since the goal is ultimately to file a complete application, it makes sense to adopt a similar format when drafting the provisional, such that large sections can be copied into the complete specification, thereby reducing the time, effort and cost to draft and file that application.

In practice, a provisional specification includes the following sections: Title; Background of the Invention; Summary of the Invention; Brief Description of the Drawings; Detailed Description of the Drawings; and a set of drawings. Our guide aims to assist in preparing the specification, providing a skeleton to which you merely add the flesh. The guide also provides an example of a patent specification and a glossary of technical terms.

It may be comforting to note that when drafting the corresponding complete specification, you may substitute drawings and revise the wording of the Claims / Summary. As long as the invention has been described comprehensively in the Detailed Description of the Drawings, most defects in the provisional specification (excluding insufficient disclosure) can be remedied in the complete specification.

Although a provisional specification does not require a set of claims, preparing this section assists in focusing the mind on the new, essential features of the invention, which must be described in detail. A search should assist in identifying / confirming these features. As a preliminary step, we suggest that you list the novel features of the invention and rank them according to essentiality. Thereafter, you can draft a set of claims that introduce these features one at a time. When introducing features, start by referring to the broadest possible category (e.g. fastener means), then reduce the scope of the categories (e.g. screws, nails, rivets, etc) until you finally arrive at the preferred feature (e.g. a flat-top screw).

Our Patents Act does not prescribe a format for drawings accompanying a provisional patent specification. Rough sketches or CAD drawings (on A4 pages) are sufficient, provided that they illustrate all features (including practical alternatives) described in the Detailed Description of the Drawings.

Once you have completed drafting the provisional specification, you must: sign the specification at the end of the Description; complete (in black ink and block letters) and attach forms P1 (in duplicate), P2 (in duplicate), P3 and P6 (copies available at www.ideanav.co.za); go to the South African Patent Office (DTI campus, Block F, 77 Meintjies Street, Sunnyside, Pretoria), pay the cashier R60 in cash to stamp the document and submit the application.

Now that your provisional patent application has been filed, you have 12 months to conduct market surveys and set up manufacturing facilities or to sell the concept to potential licensees. In 12 months' time, you must file either a complete patent application in South Africa only at a cost of between R6,950 and R25,000 (depending on the firm selected and complexity of the invention), or an international patent application (PCT application) at a

cost of between R8,250 and R60,000 (depending on the nature of the applicant, firm selected, and complexity of the invention). A PCT cost calculator is available at www.ideanav.co.za.

PATENT DRAFTING GUIDE

CLAIMS

This section should appear at the end of a patent specification, before the drawings. However, since you should draft this section first, we discuss it upfront.

Furthermore, it is not necessary to include this section in a provisional patent specification, but we suggest that you include it as it focuses the mind on the rest of the specification and forms the basis for the "Summary of the Invention".

"The Claims" is the most important section of a complete patent as it defines the scope of protection afforded by your complete patent. The claims include:

- **independent claims** (i.e. claims that stand on their own and do not incorporate features in other claims), which must include one new feature that is considered the most essential and captures the essence of the invention.
- **dependent claims**, which must introduce one new feature per dependent claim, in decreasing "order of essentiality".

Notes:

- The independent claims do not need to include all the components necessary for the invention to work.
- When introducing a term, refer to "*a* ...". Only when referring back to a previously defined term, use "*the* …". Example:

  1.A writing instrument comprising / including / having: (select one, but do not use consisting / constituting)*:*
  an elongate body defining a central bore;
  a writing element sized to fit within the central bore;
  an eraser; and
  a coupling for connecting the eraser to the elongate body.

- Each new feature introduced should first be introduced in broad terms that cover all the possible variants, and thereafter be narrowed down to a specific preferred embodiment in subsequent dependent claims. Example:

  2.A writing instrument according to claim 1, further including means for securing the eraser to the coupling and the coupling to the elongate body.
  3.A writing instrument according to claim 2, wherein the securing means comprises at least one nail, at least one screw, adhesive or formations to create an interference fit between the parts secured.

- When claiming a **method**, use the following wording:

  A method of…, the method comprising the steps of:
  (a) …;
  (b) …

- Ensure all words used in the claims have been used and described in the "Description".
- Never refer to trademarks in claims – The specification is not a marketing document!
- Draft the claim with the potential infringer in mind. There is no use "catching" users instead of the manufacturer / seller. For example, where a product may be sold in kit form, describe the components and not necessarily the assembled article. Use: "*attachable*" instead of "*attached*", etc.; "*an inlet for permitting fluid communication*"
- At the end, consider inserting an "omnibus claim"

  A (writing instrument) substantially as herein described and illustrated with reference to the accompanying drawings. [But do not refer to drawings of "known solutions"]

Tips:

- Create a list of new features and rank them according to essentiality. This list will form the basis of and dictate the order of the claims.
- Always introduce "means" (a general term) as "*means for* (what it does)". Thereafter, refer to that feature as "(what it does) *means*".
- When referring to more than one, use "*a plurality of*".
- When referring to one, consider using "*at least one*".
- Do not claim a negative, such as "*a hole*", use "*a …. defining an aperture*".

Checks:

1. Have you included only one new, essential feature in the independent claim and only one additional new feature into each dependent claim?
2. Does the independent claim "read onto" "known solutions"?
3. Does the claim cover all of your embodiments (including kits)?
4. Does the article need to be used for the claim to be infringed?
5. Can the claim be designed around using a known alternative?

BACKGROUND

The present invention relates to a (use broad terms, e.g. *writing instrument*). *More particularly, the invention relates to a* (describe in more specific terms, e.g. *a pencil and eraser combination connected by way of a coupling*).

Also:

- Describe "known solutions":

  Conventionally, the … (describe known solutions)

- Possibly, also discuss "problems" associated with "known solutions":

  A drawback of the above invention is that ..

Note: Do not claim that your invention "solves" problems. Rather use loose terms, such as "addresses".

DICTIONARY

If you need to define terms, do so as follows:

For the purposes of this specification, the term ... shall be taken to include / mean ...

SUMMARY OF THE INVENTION

This section should mirror the claims, albeit in language that flows more easily.

According to the present invention there is provided a (writing instrument) comprising:
….; and
…

***Preferably / typically**, the … (feature previously introduced) is a …*

*The … **may comprise** / also include …*

If there is more than one unique embodiment:

According to a second aspect / embodiment of the invention, there is provided …

At the end include: "*These and other features, aspects and advantages of the invention will become better understood with reference to the following description and drawings.*"

BRIEF DESCRIPTION OF THE DRAWINGS

The invention will now be described in more detail, by way of example only, with reference to the accompanying drawings in which:

Figure 1 *shows / is / depicts* a (*type*) view of the invention;

Drawing types:
Plan (top & bottom)
End / side
Perspective
Cross-sectional (along lines 1-1 of Figure X)
Schematic
Exploded (perspective)

DESCRIPTION OF PREFERRED EMBODIMENT

Describe the preferred embodiment of the invention in full. Alternatives can be described in less detail. Do not compare against "known solutions".

Tip:
(a) Introduce the main elements of the invention and how they generally co-operate
(b) One by one, describe the main elements in detail
  (1) shape, size, configuration
  (2) material
  (3) substitutes / alternatives
  (4) function
  (5) how to make
(c) Only describe how the parts interact and how the invention works / is used after the description in (b).

Example:

With reference to figures 2 and 3 of the drawings, the writing instrument *10 includes a pencil 20 and eraser 60 combination, secured together by a coupling 80.*

The pencil 20 comprises an elongate body 22 defining a central bore 24. The elongate body 22 … (describe the body in detail, followed by the central bore)*. The pencil further includes a writing element 40 sized to fit within the central bore 24. The writing element …* (describe in detail).

The eraser 60 … (describe the eraser in detail)

The coupling 80 … (describe the coupling in detail)

(Only after each feature has been described in full, do you describe how the components interact)

Additional tips:
- When referring to reference numerals, use even numbers so that features you forgot to include can later be added using odd numbers.
- A second embodiment should start with reference numeral **1**10, a third with **2**10, etc.
- To briefly describe variants that you do not wish to illustrate or describe in detail, add the following to the end of the description: "*it will be appreciated by persons skilled in the art that the … can be ….*"

EXAMPLE: PENCIL-RUBBER

Background

The present invention relates to a writing instrument. More particularly, the invention relates to a pencil-eraser combination, secured together by a coupling.

Known pencil-eraser combinations comprise a pencil having a pin at the non-writing end on which an eraser is secured. A drawback of this arrangement is that the eraser is easily dislodged from the pin and lost.

Summary of the invention

According to the present invention there is provided a writing instrument including:

an elongate body defining a central bore;
a writing element sized to fit within the central bore;
an eraser; and
a coupling for connecting the eraser to the elongate body.

Preferably, the coupling is cylindrical and sized to receive the elongate body and the eraser at opposite ends.

The writing instrument may further include means for securing the eraser to the coupling and the coupling to the elongate body.

The securing means may comprise at least one nail or screw, adhesive, or formations that create an interference fit between the parts secured.

These and other features, aspects and advantages of the invention will become better understood with reference to the following description and drawings.

Brief description of the drawings

The invention will now be described in more detail, by way of example only, with reference to the accompanying drawings in which:

Figure 1 shows a pencil-eraser combination according to the prior art;
Figure 2 shows a front view of the invention; and
Figure 3 shows a top view of the invention.

Description of the preferred embodiment

With reference to figures 2 and 3 of the drawings, the writing instrument 10 includes a pencil 20 and eraser 60 combination, secured to each other by a coupling 80.

The pencil 20 comprises an elongate body 22 defining a central axial bore 24 that communicates between both ends of the elongate body. The elongate body 22 is cylindrical in cross-section and made from wood.

The pencil further includes a writing element 40 sized to fit within the central bore 24. The writing element 40 is cylindrical and made from graphite.

The eraser 60 is cylindrical, having substantially the same diameter as the elongate body 22.

The coupling 80 is cylindrical having a central axial bore 82 that communicates between both ends of the coupling. The central bore 82 is sized to receive the elongate body 22 at one end and the eraser 60 at the other end and is sized to create an interference fit between the coupling 80 and the eraser 60 and the coupling 80 and the elongate body 22. The coupling 80 is made from tin.

The coupling 80 includes formations 84 extending radially into the central bore 82 for engaging the eraser 60 and elongate body 22 and securing them within its central bore 82.

it will be appreciated by persons skilled in the art that: the elongate body can be polygonal in cross section and can be made from any material, including an elastomeric material; the central bore of the elongate body need not necessarily extend to the non-writing end of the elongate body; the coupling can be made from any material including an elastomeric material; the central bore of the coupling need not necessarily communicate between both ends of the coupling; and the eraser and elongate body may be secured within the coupling using other securing means, including at least one nail or screw or an adhesive.

Claims

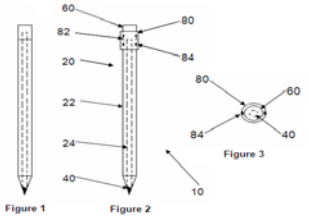
1. A writing instrument including:
an elongate body defining a central bore;
a writing element sized to fit within the central bore;
an eraser; and
a coupling for connecting the eraser to the elongate body.

2. A writing instrument according to any one of the preceding claims wherein the coupling is cylindrical and sized to receive the elongate body and the eraser at opposite ends.

3. A writing instrument according to either of the above claims, further including means for securing the eraser to the coupling and the coupling to the elongate body.

4. A writing instrument according to claim 3, wherein the securing means comprises at least one nail, at least one screw, adhesive or formations to create an interference fit between the parts secured.

Drawings



GLOSSARY OF TERMS

RELATIVE POSITION
proximate / distal
proximal
adjacent to
contiguous
adjoining
overlapping
near
radially outwardly / inward
juxtaposed
aligned with
coterminous
superjacent
subjacent
extends transversely
interposed
divergent / convergent
abuts
co-axial
co-planar

CONNECTIONS
connected to
secured to
mounted
attached
engaging
electrically connected
enmeshed (gears)
mated
rotatably fits within

MATERIAL DESCRIPTIONS:
resilient
pliant
flexible
supple
rigid
elastically deformable

PHRASES
sized to fit within …
at least one …
a plurality of ..
formed integrally with …
adjustably secured
releasably attached
pivotally attached
slideably interacting
in fluid communication with
arranged to move

PREFERRED TERMS
to move – actuate
flat – planar
blocking – obturating
move axially back and forth – nutating / reciprocating
receiving means – receptacle
correspondingly shaped – complementally shaped
separated – displaced
rod – elongate member
lever – actuating means
formed with – integral
spring – biasing means
interacts – co-operates
close to – proximate
motor – drive means
casing – housing
screwed – threadably engaged
filling – charging

POSITIONS
operating / resting
locked / unlocked

Movable between a first position in which (*describe*) and a second position in which (*describe*)

METHOD
steps in a method:
providing …
supporting …
Installing …
inserting …
removing …
charging …
delivering …
controlling …
maintaining …
applying …
varying …
positioning …
allowing / permitting …
forcing …
exposing …
forming …
bracing …
securing …
moving …

Conducting your own patent search

Many inventors, believing that their inventions are new, spend vast amounts filing patents and setting up expensive manufacturing facilities only to discover later that their inventions were previously disclosed, and their patents are invalid and worthless.

To avoid disappointment, conduct a novelty search before incurring patent costs. Searches assist you to: evaluate the novelty of your invention; focus your time, efforts and resources on patentable aspects of your invention; expose you to alternatives not previously considered; and identify existing patents that may present a hurdle to commercialisation of your invention.

To obtain patent rights, your invention must not have been disclosed to the public anywhere in the world in writing, orally, by use or in any other way. It is preferable to conduct novelty searches through international internet databases than through the records of our Patent Office. That is, unless the invention relates to a field in which South Africa is considered a "world-leader", e.g. fields of mining and pool cleaning.

Internet patent databases contain millions of patents that can easily be searched free of charge. For example, the US Patent Office (USPTO) database includes more than 7 million US patents (divided into 31 searchable sections); and the *esp@cenet* database includes more than 59 million patents in 72 countries (with 10 searchable sections). The Search Tool available at www.ideanav.co.za searches five of the main patent databases simultaneously.

To illustrate the power of these internet databases, let's consider a couple of examples: (1) aeroplane tyres or wheels with fins to pre-rotate the wheels prior to landing; and (2) cars with brake lights on their grills that confirm to oncoming traffic the drivers' intention to turn.

Due to the fact that these products are not generally available in the market, one's gut feel is that they must be new inventions and therefore capable of being patented. However, the results from the following simple search queries in the USPTO database quickly dispel any belief that the inventions are patentable.

(1) Aeroplane fins:
ttl/(airplane or aeroplane or aircraft or airborne) and abst/((tyre or tire or wheel) and (rotat$ or spin$ or turn$) and wind) and landing

(2) Brake light:
ttl/(brake and (indicator or light or signal)) and abst/(automotive or automobile or vehicle or car or motorcar or motorvehicle) and (front or grill or bonnet)

Start by selecting words that would be expected to appear in: the title (ttl/); the abstract (abst/); and the body of the patent specification (without any prefix). By using Boolean terms (i.e. and, or, andnot, etc) and wildcards (i.e. rotat$ - which includes rotate, rotates, rotator, rotators, rotating, rotation, rotations, etc.) you are able accurately to filter relevant patents. Alternative spelling of words should also be kept in mind (e.g. "tyre" in South Africa and "tire" in the US).

Once a "ballpark" patent is found, see the patents that it refers to (i.e. related earlier patents) in the "*references cited*" section of the patent specification; and the patents that refer to it (i.e. related subsequent patents) by either clicking on the "*referenced by*" link or inputting ref/(*patent number)* in the search query field.

This exercise should take a few hours and yield a volume of documents that should keep you entertained for days. Alternatively, you could instruct your patent firm to conduct the search at a cost of anywhere between R2,750 (IdeaNav minimum charge) and R25,000, depending on the depth and complexity of the search and the firm selected.

The patent clock is ticking

By now, you have confirmed the patentability of your invention by conducting a search using the databases freely available on the internet, and drafted and filed your own provisional patent application at the South African Patent Office – at a cost of only R60.

The patent clock has started to run and you have 12 months to raise between R6,950 and R25,000 to file a complete application in South Africa only, or between R8,250 and R60,000 to file a PCT application if you intend to obtain patents in foreign territories. Whether your patenting strategy succeeds depends largely on your actions during this period.

Use the time to gauge the commercial value of your invention. And, if you intend to file a PCT application, focus on funding. Beware incurring costs to secure patent rights that are easily designed around or adopting a patenting strategy that exceeds your funding capacity. Unless you are a large company, the costs of an international patenting program (detailed below) will most probably force you to consider alternative funding options:

- day 1 – file a provisional: R60
- 12 months – file a PCT application: R8,250 to R60,000 (see the cost calculator available at www.ideanav.co.za)
- 16-25 months – amend PCT specification: R3,000 to R15,000
- 30 months – file patent applications in select territories: R3,500 to R30,000 per country
- 30-66 months – prosecute foreign patent applications to grant: R20,000 to R90,000 per country
- annual renewal fees – R380 to R2,500 per country

At this stage, do not: focus on "perfecting" the product (the product does not need to be perfect to attract investors); focus solely on obtaining government grants or VC funding; or duplicate manufacturing and marketing facilities that are expensive and time-consuming to set up and that are otherwise relatively easily accessible by licensing the technology. We strongly suggest that inventors apply to SPII to fund prototype development.

A source of funding too often ignored by inventors is licensing. A licensee that assumes the costs of patenting in his licensed territory in consideration for a discounted royalty-rate is a "gift-horse". Second and third prizes are licences that provide for either an upfront licence fee with discounted running royalties or a royalty pre-payment. As a last resort, provide for guaranteed minimum royalty payments, which can be discounted to a financier.

Simultaneous with a licensing program, attempt to access as many of the following sources of funding, but remember that the probability of securing finance from these sources seldom exceeds 20%:

- Technology Innovation Agency (various funds)
- NRF (Thrip)
- IDC / SPII
- VC (HBD and various others)
- Incubators
- Angel Finance

(See www.ideanav.co.za for links to the above funds and application forms)

Only after overcoming the funding obstacle, should your focus revert to perfecting and marketing the product … and, of course, remember to consult your patent attorney at least 4 weeks before expiry of the 12 month period.