PATENT CLAIM WRITING

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United States Patents serve the important national goal of encouraging developments in the useful arts and sciences by granting inventors and their assignees patents that afford a limited time monopoly in their inventions in exchange for their disclosing the invention and how to practice it to the public. In the patent document, patent practitioners and patent owners' attorneys try to adequately disclose the invention and at least the best mode of practicing the invention sufficiently to enable persons skilled in the art to themselves practice the invention without undue experimentation. 35 U.S.C. § 112, para. 1. That is the minimal disclosure that must be provided.

The description of the invention in the patent specification and drawings does not define the scope of the patent monopoly. That is defined by a patent claim or claims appended to the specification, which in words establishes the limits, metes and bounds of the patent monopoly. 35 U.S.C. § 112, para. 2. The claims restate the essential points of the invention, and are typically prepared according to a format and style dictated by rules and practices concretely embodied in a Manual of Patent Examining Procedure, which is a government publication that provides guidance to Examiners and establishes some uniformity in procedure. These rules and practices are based on statutes, Rules of Practice and Court precedents which have interpreted patent claim language and therefore gradually dictated how a claim should be written and are based upon customs and practices among patent practitioners. This paper will attempt to give you insight into the patent claim drafting process, using a simple example.
The scope of a patent claim is governed by several considerations. The patent practitioner must learn the invention and a practical or preferred embodiment or way of practicing the invention, which is typically supplied by or elicited from the inventors. Nearly every invention is an improvement upon pre-existing technology in the relevant art, not a wholly new product or process without any precedent. Consequently, the patent practitioner preparing the patent application and particularly the patent claims must understand the context of the invention and particularly understand what improvement in the art is afforded by the invention. The patent claims are directed toward that improvement. One learns the nature of the improvement in the art from one or more of several possible sources, including: (1) the inventor’s description of the state of the current art and of the improvement in that art afforded by the invention; (2) the practitioner’s personal knowledge of the art; (3) others in the same business concern or the same industry who have knowledge as to the state of the art and the improvement; (4) the published “prior art”, including previous United States and non-U.S. patents and other publications in the art, (5) actual products in use or on sale, and (6) whatever makes up pre-existing knowledge in the art at the time the invention was made. A new device or process may operate better, more efficiently, etc., and it is only through the just discussed sources that one can perhaps determine not only why this occurs but what aspect of the disclosed invention causes the improvement.

One might be tempted to simply claim the improvement in terms of the result achieved, e.g., “I claim an automobile which includes an engine that accelerates rapidly and operates efficiently, burning fuel at the rate of one hundred miles per gallon.” But patent practitioners have never been free to claim an invention merely by stating the goal, objective or result. Rather, the practitioner claims the invention in terms of the elements of the invention, namely the cooperating
elements of the operating product, the components of the article of manufacture, the constituents of the chemical or substance or the steps in the process. It is the art of the patent claim drafter to recite a complete device, product, composition of matter or process which fully covers the invention as broadly as the disclosure of the invention in the specification permits and as the prior art permits, without unduly limiting the scope of the claims, either accidentally or through lack of skill or lack of understanding of the invention or the prior art.

The practitioner who prepares the patent application protects the inventor's or assignee's interest. A very detailed patent claim, including all of the elements of the product, process, etc., that are described in the specification, would protect the invention described by the inventor and would be narrow enough to avoid the prior art. However, such a claim would likely be useless practically, because a later developer of a product or process in the same art could too easily avoid the limited scope patent claim. The purpose of the limited scope, limited duration monopoly awarded the inventor or his assignee is to give them the exclusive right to make, use and sell products, processes, etc., covered by the claimed invention. 35 U.S.C. § 271. A claim too detailed or narrow in scope would unduly restrict the monopoly and not afford the inventor or assignee the competitive advantage to which they would be entitled based on the quality of the inventive improvement.

Further, the monopoly of the patent is useful because it empowers the inventor or assignee to enter the Courts of the United States and halt others from making, using or selling the invention, or collect tribute, e.g., royalties, for such protected activities. One who makes, uses or sells the subject matter of the claim of the invention is an infringer whose infringement can be
halted or, in the alternative, can be permitted or licensed by the patent owner, and for whose infringement the patent owner can obtain compensation in the Court. Clearly, the broader scope that the patent claims have, the broader is the range of competitive products or processes which the inventor or his assignee are able to block or for which they are able to obtain damages or license fees.

Claim scope is governed by two requirements. First, is the requirement of proper claim language, proper in form, so that the claim particularly points out and distinctly claims the invention, and the second, of course, is the state of the prior art, which limits the claim scope. The claim writer must be aware of the formal requirements set forth not only in the Rules and in the above-mentioned Manual, but in precedents and customs of patent claim drafters and must also be aware of the state of the art. The inventor and the patent claim writer can learn the state of the art from their own knowledge, from third parties, from issued patents and other publications, from products on sale or in use, and then after a patent application is filed, as a result of a search as to the state of the art conducted by an Examiner at the U.S. Patent and Trademark Office or at a Patent Office elsewhere with expertise in examining applications in the relevant field of technology. A poorly drafted patent claim or one that is so broad as to encompass the prior art may be held invalid and unenforceable causing a valuable invention, which might have been protected against infringement through well drafted proper scope patent claims, to instead be either held invalid or not infringed by the competitive product or process, which would be found to be outside the scope of the patent claims.
Through the example herein discussed, the basics of claim drafting can be understood. The example is of a manually operable citrus fruit juicer. As shown in the drawing Figure 1 below, the fully disclosed juicer 10 illustrated in Fig. 1 includes a cup 12 for holding half of a piece of citrus fruit that is to be pressed to extract juice. The cup has openings 14 permitting exit of juice into a collecting bowl 15. A cooperating presser 16 is shaped to be pressed into a section of citrus fruit placed in the cup 12. There are a support arm 18 for the cup 12 and a support arm 20 for the presser 16. Apparatus for moving the presser 16 in and out of the cup 12 includes the support 20, a support arm 22 which connects to a gear toothed rack 24 on the arm 22 by which that arm is moved up and down, the support arm 18 for the cup, a toothed wheel or gear 28 on the arm 18, wherein the teeth of the wheel 28 mesh with the teeth of the rack 24 and a handle 32 for rotating the wheel 28 to move the rack 24 and the arm 22, 20 for moving the presser 16 toward and away from the cup 12 for squeezing the fruit and for permitting the juice to exit through the openings 14.

It is the rare invention, indeed, which is so totally new and pioneering that there is no prior art over which the invention is an improvement. For purposes of writing claims of appropriate scope on the example invention, we will assume there are two examples of prior art. The first prior art is a juicer 40 shown in Figure 2 consisting of a stationary base 42, a removable collecting bowl 44 that is temporarily seated on the base, and a citrus fruit shaped pulp presser 46 in the bowl 44. A section of a citrus fruit is placed on the pulp presser and is pressed manually by the user and perhaps rotated over the presser. Juice is released from the citrus fruit and collects in the bowl.
The second prior art is a garlic press 50 shown in Figure 3 which includes one arm 52 on which there is a box 54 with an open front end 56 and a closed rear end 58 with openings 62 through which crushed garlic is pressed or extruded, a second arm 64 which is connected at a pivot hinge 66 to the first arm 52, a solid head 68 on the arm 64, which is shaped and positioned to enter the open end 56 of the box 54 when the arms 64 and 52 are moved together, to squeeze a garlic clove in the box 54 and extrude crushed garlic through the openings 62 at the rear 58 of the box 54.
The client has visited you with a sample or a drawing of the juicer shown in schematic form in Fig. 1. When you discussed the prior art with him and/or had your own search conducted through prior art references, primarily patents and publications at the U.S. Patent and Trademark Office, you found the prior art shown in Figs. 2 and 3.

With an understanding of the invention and the prior art, you have written a description that discloses the invention and provided sufficient drawings that show the invention so that a person of ordinary skill in the relevant art would be able to understand the invention and how to make it and how to use it. Since you knew about prior art before preparing the application and its claims, you have also included a brief description of the prior art in the specification. This description need not have included the drawings of Figs. 2 and 3, but may include a description of the relevant portions of the prior art and perhaps also describe how the structure and/or operation of the invention differs from the prior art that you describe in the specification or the prior art of which you have knowledge. Not only did you describe the invention, you also disclosed the best mode of practicing the invention, which is the version of it brought to you by the inventor and shown in drawing Fig. 1.

Now you will prepare claims that provide adequate patent protection for the invention. A typical client/inventor thinks of the invention as the concrete embodiment that is presented, e.g., the precise embodiment of a juicer shown in drawing Fig. 1. But a patent practitioner should consider the invention not merely as the precise embodiment, but rather conceptually, to determine what is the inventor's contribution to the art and how to protect that contribution as broadly as possible to encompass competitive products which may differ in their structure,
appearance and/or operation but which nonetheless embody the concept of the invention. The mental thought process of the patent practitioner includes several considerations:

What is the goal or objective of the invention and/or the inventor? There may be several and each should be articulated. The inventor wants his eventual patent to cover all possible ways of achieving that objective or goal, and a well written patent claim will accomplish that, limited by the scope of the pre-existing prior art.

What has the inventor contributed conceptually toward achieving that goal? This is not a mere listing of the elements of the concrete embodiment. Rather, it is an articulation of the inventor's contribution. The inventor's contribution to the art is as broad in scope as possible, limited by the state of the prior art.

The apparatus, article of manufacture, or composition, or method, which are various classes of invention 35 U.S.C. § 101, that is, the particular embodiment of the invention presented to you, is analyzed to select, from the elements that are or might be named in the specification, those elements illustrated in the specification which perform the invention and achieve the objective, governed by the state of the prior art. The patent practitioner's art is in selecting elements to be included in claims and, quite important, selecting elements to be excluded from the claims, as being unduly limiting in view of the objective of the invention and the state of the art, and instead perhaps including those elements that were excluded from the broader scope claims in other, e.g., dependent claims.
The practitioner should provide at least one claim of broad scope that protects the invention conceptually and broadly, another claim that is of limited enough scope to be valid over prior art known and not yet discovered, and perhaps another claim of narrow scope to protect the inventor's precise commercial embodiment, and also claims of intermediate scope, so that all important features of the invention are claimed. Typically, a series of claims are written, of gradually decreasing breadth or increasing specificity.

Each patent claim stands on its own, as though it were the only claim in its own patent. For simplicity in claim drafting and claim comprehension, it has become conventional to write claims of greater specificity in dependent claim form, referring back to a preceding claim which incorporates by reference all of the elements of the preceding claim, wherein the dependent claim either adds a new element or modifies or limits a previously named element of a preceding claim. The dependent claim text therefore includes the entire preceding claim from which it depends.

We apply the foregoing analysis to the juicer shown in drawing Fig. 1, which exists in the state of prior art shown in Figs. 2 and 3. The broadest objective of the invention is to apply pressure to a piece of citrus fruit to squeeze juice from it. Perhaps other objectives can be envisioned, such as squeezing by application of pressure and simplifying the application of pressure.

The manner in which the objective is achieved, i.e., the invention itself, should be articulated before the claim is written. This is done not in the vacuum of merely considering the
invention shown in Fig. 1, but also in consideration of the prior art which would limit the scope of
the invention.

What is the scope of the prior art? The garlic press 50 in Fig. 3 is a garlic press, not a fruit
juicer. The claim writer must decide whether one of ordinary skill in the relevant art would look
to a garlic press as a relevant prior art teaching against a juicer. Structural and functional
similarities and differences are considered. A juicer applies pressure to squeeze juice and pulp
from the fruit. A garlic press applies pressure to a clove of garlic to crush it and extrude the garlic
pulp through a grate. They both have pressure applying structures. They both crush a food item
to extract its contents. But garlic pulp is not juice. I make the initial decision that it is prior art,
but a reasonable patent application writer might reach a contrary conclusion. The other prior art
juicer 40 in Fig. 2 is clearly relevant. That is a conventional juicer which has a fruit shaped part
on which the fruit is positioned for being pressed.

Comparing the juice extractor 10 of Fig. 1 with the prior art, the application of pressure to
a section of fruit to extract juice is known in Fig. 2. Applying pressure to the fruit with a shaped
pressure application device is known again in Fig. 2. Moving a pressure applying device to a
receptacle in which fruit is located is shown in prior art Fig. 3. None of these can be the goal or
the concept of the invention. The concept that remains to distinguish over the two prior art
devices 40 and 50 in Figs. 2 and 3 appear to be the manner in which the one pressing element is
moved into the other and out again. A separate concept may lie in the shape of the presser
element 16 on the one hand and of the fruit receptacle 12 on the other hand as related to the shape
of the piece of fruit being pressed, since the garlic press box 54 and presser 68 are not shaped like a garlic clove. Do you see other conceptual differences over the prior art?

Now that we have considered the inventor’s objective(s) and determined the concept(s) of the invention to achieve the objective(s), as restricted in view of the prior art, claims can be written. Claim form is highly stylized, evolved over many years of practice.

A claim is a series of elements and limitations on the claimed elements. A claim is not a statement of ultimate objective or result without recitation of structure or process steps. One must recite the structure. Hence, a claim consisting of “A device for squeezing fruit between a pressing element and a support for the fruit in order to extract juice from the fruit” is not a proper claim. It states the objective and result. It does not state the structure by which that objective is achieved, nor does it describe the invention that achieves that result. Structure is recited.

A patent claim is the object of a sentence that begins with “I claim” or “What is claimed is” and the claim is a continuation of that single sentence. The claim has no periods or sentence ending punctuation within it.

A claim is introduced with a preamble which typically with a few words describes the field of the invention and sometimes describes the objective of the invention. Examples here might be “A device for squeezing fruit” or a “A juicer” or perhaps “A device for squeezing a piece of fruit
between two elements”. In this author’s opinion, a shorter but descriptive preamble is preferred, but practices vary.

Following the preamble, there is what is called a transition word that tells the reader that what follows is a recitation of a combination of the elements of whatever is named in the preamble. There are essentially two types of transitions, open ended, which is usually preferred and which is interpreted to mean that the following recited elements are not all of the possible elements, but rather elements not named may still be part of the claimed combination. Examples of open ended transition words are “comprising”, “including” and often “having”. The other type of transition is closed ended. Examples of closed ended transitions are “consisting of” or “composed of”, in that the combination following the closed end transition is complete and excludes other elements. If a product or process which is intended to be covered by that claim with a closed end transition includes another element besides those listed following the closed end transition, the complete combination including that other element is outside the claim. The practitioner uses closed ended transitions typically in chemical claims, where the addition of another element might change the significant characteristics of the claimed combination. In mechanical and electrical arts, the practitioner typically uses open ended transitions.

A claim on an apparatus, product, composition or process recites a series of elements in a logical sequence with all of the elements positioned or interconnected physically and/or functionally to produce the complete apparatus. A claim element is typically recited by giving the element a name, which is typically the name that it has in the specification or description, by saying where the element is or with what other element the named element cooperates and/or by
saying how the element functions with reference to other claim elements in the final product. It is important that the claim elements selected for mention be related to each other so that no element is unrelated and off in some unspecified, unconnected space.

Elements of the combination are selected for inclusion in the claim to achieve the inventor's objective by practicing what the practitioner has decided is the invention. The writer does not select every element of the disclosed product or process, but only those elements and those features of the selected elements that contribute to the invention which was earlier defined. In selecting elements, the practitioner moves through the apparatus in a logical sequence, e.g., from the beginning operating element to the final operating element, or from the final operating element back to the beginning operating element, possibly branching off from one element and later returning to it, as required for a logical sequential recital. Where possible, the writer completely describes all aspects of one element before moving to the next element.

One practitioner creates a list of those elements of the disclosed apparatus that might be included in the claim following the transition. He understands that list includes more elements than should be recited. By creating such a list, he assures that he has not omitted a necessary element. Another practitioner prepares the claim by moving through the disclosed apparatus and including each element that he observes to be necessary to achieve the inventor's objective and that embodies the concept of the invention. Both practitioners should end up with the same claim. The first one will select from his list only those elements that are needed, and the other one will select from the disclosed apparatus those elements that are needed. Both should end at the same elements and their description.
Claim writing is an art. No two claims on the same invention written by two practitioners are likely to be identical. Different practitioners will decide that certain elements are or are not essential for inclusion, that the same elements can be described in slightly different words or that the sequence of elements described within a claim can differ, etc.

Claim elements may appear several times in a claim and over a series of claims. The second appearance of the same element should not be mistaken for the first appearance of a different element. To assure this, the first time that an element is named in a claim, it takes the indefinite article “a” or “an” or “a plurality of” or, less preferred, some other word that does not suggest it has been named previously. Plural nouns often take no article at all, e.g., “supports”. But for each subsequent appearance of the same element, a definite article is used, i.e., “the” or else “said”. “Said” is a gradually less favored reference back word used by patent practitioners. Premature use of “the” or “said” fails to provide an antecedent for the named element.

In normal prose, elements are often identified later in a sentence by a reference back pronoun, like “which” or “it”. Use of these can be imprecise in a claim, since it must be undoubted as to which element is being indicated. Hence, practitioners avoid pronouns, and rather reuse the same noun for the same claim element throughout the claim to avoid ambiguity.

Further, a new element (introduced by an indefinite article) should be first introduced in a clause of the claim where the new element is the subject (in a prose writing sense) of the clause or a previously described element is said to have or include or comprise the new element. Operating
on a new element without having earlier correctly introduced it is improper inferential claiming of that element.

Let's write a claim on the juicer 10 of Figure 1.

The preamble may be "A device for squeezing fruit" or "A juicer" or even (although I feel less preferred) "A device for applying pressure to citrus fruit to extract juice". Then the transition is written. Here it is easily "comprising".

We must decide which elements to recite. Most simply, for describing those elements which perform the invention:

"a presser element for applying pressure to a piece of fruit and a support for the presser element for moving the element to apply pressure to the fruit for squeezing it."

While those elements describe the juicer invention shown in Fig. 1, they also describe a garlic press as shown in Fig. 3. We have not described either enough elements to avoid the prior art or limitations of the named elements to avoid the prior art. Note that the element which applies pressure to the fruit and the support for that element which is movable are described in terms of their cooperative functioning, so that they are not disconnected elements.

Consider adding a claim limitation in one claim element:
"the presser element for applying pressure being shaped generally in the shape of a piece of fruit."

Now the claim is distinguishable from the garlic press. But the other prior art juicer in Fig. 2 has a squeezing element in the shape of the piece of fruit. The teachings of these two prior art references might be combined by a person of ordinary skill in the art (and by a Patent Office Examiner) who might say that it would have been obvious to an ordinary person skilled in the art at the time the invention was made (test of 35 U.S.C. § 103(a)) to replace the box shaped piece 68 in Fig. 3 with a piece like piece 46 in Fig. 2 that is shaped like a piece of fruit, and that combination would be prior art as to the more detailed claim just written.

Perhaps the objective of the invention is too encompassing and the invention is too broadly stated. We should more narrowly define the concept of the invention, to relative motion of the two elements. Perhaps other claim elements should be added:

"a second support for supporting the piece of fruit, and the presser element being movable toward the second support for squeezing the piece of fruit between the presser element and the second support."

These elements also are suggested by the prior art in the box 54 on the arm 52. Consequently, we have not yet avoided the prior art.
It appears that the distinguishing feature between the invention in Fig. 1 and the prior art in Figs. 2 and 3 lies in the manner in which the support for the pressing element is moved with respect to the second support for the piece of fruit. The inventive concept changes accordingly. We might add another element to the broad claim:

“and a rack and pinion connection between the support for the presser element and the second support for the piece of fruit.”

We have enough elements in the claim to distinguish the claim from the prior art. However, perhaps we have not described the elements sufficiently, because we do not know from the claim how the rack and pinion operates the elements. Where mere recitation of an element, without describing how the element operates, does not make the claim clear, further description is usually included in the claim, describing the mode of operation of the element, for example:

“wherein the rack and pinion are operable to move the first support for the element and the second support for the fruit together to press the presser element against the fruit.”

Here is a clear distinction not shown or suggested in the prior art. The prior art in Fig. 3 shows a pivot connection between the arms 52 and 64, not a rack and pinion connection. The rack and pinion connection for moving the first and second supports is not shown or suggested in the prior art and therefore that claim is distinguishable from the prior art. Based on the prior art, what
causes the two supports to move toward each other appears to be the only distinguishing feature over the prior art. While the inventor thought he had invented the concept of squeezing a piece of fruit, the prior art shows that his invention really was limited to the manner in which the supports move together to press the fruit, and that is the invention now claimed.

Analyzing the foregoing in terms of the various elements that are to be claimed, the elements are claimed in a logical way. There are the pressing element 16, the first fruit support 12 and the supports 20, 22 for the presser 16 and 18 for the fruit support 12 and the rack and pinion connection 24, 28. These elements should be described in a logical sequence. Most logical would be to start with the support for the fruit, move next to the presser and finally to the rack and pinion connection. Hence, the elements described above would be recited in a logical sequence moving through the apparatus in a logical way. One perhaps could recite the presser first and the fruit support later, or the support first and the presser later. The rack and pinion connection would logically be described last. Important in the foregoing is that all of the relevant elements are connected together, either physically, or functionally or both.

Note elements that were not specifically claimed in that broad claim, yet are present: the rounded or fruit shape of the presser 16, the rounded cup shape of the support 12, the liquid exit openings 14 in the cup 12, the rack 24 being on the presser support 20, 22 while the pinion or gear 38 is on the fruit support 18, a handle 32 which is operable for rotating the pinion 28. Some of these features merit coverage in a claim. Although these features are not needed to distinguish from the prior art of which we have knowledge, we want to cover these features. That is one purpose of dependent claims. A dependent claim adds a new element or modifies an existing
element. It is possible to add more than one element and/or a limitation on a previously named element in a single dependent claim. But each new element or limitation on an existing element, where appropriate, can be in its own respective dependent claim.

In the transitions following the preamble, where a new element is being added in the dependent claim, the transition words might be “further comprising” or the like words showing that a new element is being added. Where an existing element is being modified or further defined, the limitation to the existing element may be introduced by the transition “wherein” or the like words.

Claim 2 might be:

“The juicer of Claim 1, wherein the presser element has a rounded shape to fit into the fruit being squeezed.”

Claim 3 might be:

“The juicer of Claim 2, wherein the support for the fruit is generally bowl shaped, cooperatively shaped to the shape of the presser.”

Claim 4 might be:
"The juicer of Claim 3, further comprising openings in the fruit support for exit of liquid."

Finally, Claim 5 might be:

"The juicer of Claim 1, wherein the rack and pinion comprises a rack on the second support and a pinion on the presser element, the pinion being in mesh with the rack, such that rotation of the pinion moves the pinion along the rack to move the presser toward the second support."

Note that Claim 5 refers not back to the preceding Claim 4, but back to Claim 1, since the features of and operation of the rack and pinion are not limitations or restrictions on the shape of the presser or the holes in the presser, and there is no reason to burden dependent Claim 5 which describes the rack and pinion system, with other elements of other claims to other features. Were Claim 5 dependent upon Claim 4, it would include the elements and limits of Claims 2-4, making Claim 5 needlessly narrow in scope, when the purpose of that claim is to define the rack and pinion.

The practitioner reviews the completed claims to see whether any claim has unnecessary limitations not needed to achieve the inventor's objective, whether some limitations in a broader claim can be removed from the broader claim and placed in a narrower scope dependent claim, which may add yet another claim, but reduces the elements in the broader claim. The practitioner reviews the disclosure to make sure that all of the important features of the invention for
achieving the objective have been included in at least some claim and, if a catalog of claimable elements had been prepared, reviews that catalog to ensure that claims include all of the important elements from the catalog.

Where there is more than one objective or more than one inventive concept, more than one independent claim is used, each possibly followed by respective dependent claims, reciting those elements that cooperate in achieving the particular objective of that invention, without including the other elements which are particular to other inventive concepts embodied in the same invention.

As shown by the claims above, one can recite the results achieved by the entire claimed combination or by one element thereof. We had described the result achieved by operating the rack and pinion to move the presser toward the fruit support. But there is structure to support that result. Sometimes a "whereby" or "thereby" clause is used either at the end of the claim or after a claim element or limitation describing how a particular objective or result is achieved. So long as the structure previously claimed causes the result to be achieved, the "whereby" or "thereby" clause is correct. But the practitioner cannot rely upon the "whereby" clause in lieu of a recitation of structure.

The foregoing example was as to a product claim. As previously noted, there are other types of claims. There are method claims, that is, a series of steps that are performed to achieve a particular objective. There are also articles of manufacture claims, that is something that has been produced, rather than a structure that does something, e.g., an electric storage battery, which is an
article of manufacture, chemical compositions, etc. All may be claimed in the same way, that is, the various elements or components or constituents that are present and, where appropriate, how they are related to each other.

A method claim is appropriate for the device shown in drawing Figure 1. A method claim has a preamble that states the objective of the method or what the method accomplishes, has the same type of transition, but the elements of the method claim are the various steps in performing the method. A method claim on the apparatus one sees in Fig. 1 would have the preamble and transition: “A method of squeezing juice from a piece of fruit, comprising” followed by several method steps. Again, the claim elements must be distinguished from method steps performed in the prior art. The method steps claimed therefore could be:

“supporting a piece of fruit to be squeezed,

moving a press element in straight line motion toward the piece of fruit

being supported to squeeze the fruit.”

The method claim is not restricted to particular apparatus elements, except as is necessary to describe the method in the claim. Note the fruit supporting is not limited by apparatus. An apparatus limitation is, where possible, avoided in a method claim, although one is not improper. The above method is not dictated by the shape of the presser element or the shape of the cup or the holes in the cup or the shape of the support. However, the shape of the support cooperates with the rack and pinion to cause the presser element to move in a straight line, rather than pivoting as in prior art Figure 3, so that direction of motion is new in view of the prior art.
Perhaps there are other distinguishing method features of this invention, and those method features may be covered in method claims.

There are some issues in claim writing and claim interpretation. One of these is the claim element that is governed by 35 U.S.C. § 112, paragraph 6, the means or step plus a function claim element. An element can be described as I have done previously, by giving the element a name, saying where it is and saying what it does. But the element can also be described as a means for accomplishing a particular function without reciting the operating structure. Claim 1 might have been recited as:

“A device for squeezing fruit comprising:

means for supporting fruit to be squeezed;

means for pressing the fruit supported for extracting liquid from the fruit;

and

means for moving the means for pressing to press the fruit on the means for supporting fruit.”; or

“... means for moving the means for pressing along a straight line to press the fruit on the means for supporting the fruit.”

It might appear that this claim is of comparable scope to Claim 1 above. But 35 U.S.C. § 112, paragraph 6, mandates the claim be interpreted differently. Any “means” recited only in terms of the function it performs, rather than by its structure, appears to cover almost any device or apparatus that accomplishes that same function. But under § 112, paragraph 6, a means
element is read as covering what is specifically shown in the specification of the patent, and
equivalents. Hence, a claim element reciting “means for supporting fruit” would not include any
type of support, e.g., a flat plate, but rather would require one look to the specification for
defining the means. In the specification, one sees an arm supporting a bowl with holes in it. That
“means for supporting fruit” may be read as restricted to a particular bowl shape. Similarly, the
“means for pressing” the fruit on the support would not be construed as any kind of presser, e.g.,
a flat plate. Rather, it would be construed as the dome shaped or bowl shaped pressing piece
supported on an arm. The means for moving the presser toward the fruit would not be construed
as any means for doing so, such as a swinging arm, or another type of lever, or a piston
arrangement, but rather would be construed only as the rack and pinion shown in Fig. 1. Of
course, Section 112, paragraph 6, also encompasses equivalents of what is disclosed in the
specification. But one cannot predict what would be deemed equivalent and not equivalent and
that may require research into the state of the art. “Means” claims have usefulness. But their
effect on claim scope must be appreciated.

A step for performing a function claim element, without reciting the component steps or
manipulations to achieve that function, is subject to the same scope limit as the “means” element.