

# The Limited Monopoly

## 21<sup>st</sup> Century Patent Preparation: The Model for the Future

### What's New

Within the past few years, explosive advances in computer hardware and software have made it affordable for large and small businesses, and even solo practitioners, to use electronic modeling tools in R&D and product design. This has fundamentally changed the way that we engineers do our work. Electronic models of materials, articles, assemblies, and processes can now serve as the basis for a broad spectrum of product design and development activities including rapid prototyping, production tooling fabrication, and phenomenological analysis.

Pursuing patent protection of the inventions associated with new products is no exception. New software tools offer a great opportunity to integrate product engineering, design, and prototyping activities with patent application preparation. The results are better quality patent applications in less time at lower cost.

### Tools of the Trade

Virtually every product being developed can now be modeled, from molecules to monolithic slabs. Modeling of products from the miniscule to the massive – in the chemical, mechanical, electrical, and optical arts, to name a few – is done by a variety of software tools such as Hyperchem®, Pro/Engineer®, SolidWorks®, Catia®, and Inventor®<sup>1</sup>. Additionally, a second level of phenomenological modeling is also often performed using finite element analysis packages such as Multiphysics™, COSMOS®, or Maxwell 3D®<sup>2</sup>.

An electronic model of a product invention can provide a wealth of information to a patent practitioner who is skilled in navigating through the model file. For example, a 3D model of an electromechanical device typically contains a three-dimensional graphic rendering of the assembly, and an adjacent components listing. With a minimal written description of the invention, or in a

often much better than a hard prototype – it can be exploded, cross-sectioned, magnified, animated, and/or virtually disassembled and reassembled with a few mouse clicks instead of an arsenal of expensive hard tools.

This capability provides several key advantages in patent preparation. First, the learning curve for the patent practitioner is highly compressed. The practitioner attains a much more comprehensive understanding of the invention in a shorter time. This obviously saves money, since a significant cost in patent preparation occurs early in the process, where the practitioner is simply figuring out, “What is this thing?”

A second key advantage is that the practitioner is rendered much more capable of providing a patent application that meets the statutory requirement of enablement. In particular, federal statute 35 U.S.C. 112 requires that the application contains a clear written description that enables a

studying the model, the practitioner can effectively write an enabling description and set forth the best mode. Additionally, examination of the model stimulates further questioning of the inventor. This often uncovers additional critical information to be included in the application.

A third advantage is that for many models, suitable line art images for patent drawings can often be extracted directly from the model in a matter of minutes. This process greatly simplifies the preparation of patent drawings in the application, as the “old way” of patent drawing preparation often entails several revision cycles with numerous iterations of communication between practitioner and inventor, and practitioner and patent illustrator. Again, fewer errors, faster cycle time, and lower cost are the result.

### Don't leave the office without it.

Want to patent your next cutting edge product design or process? Preparing a detailed written description is a good start. But if you have an electronic model, you may well be further along than that. Don't hesitate to put it on a memory stick and bring it along to that first meeting with your patent practitioner. You will be on your way to learning what it takes to create a first-rate patent application in the 21<sup>st</sup> century.

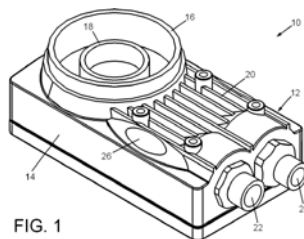
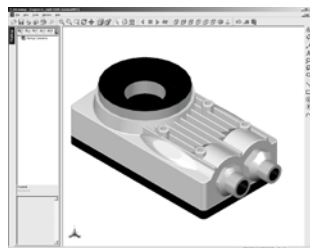


FIG. 1

person skilled in the art to make and use the invention, and that also sets forth the best mode that the inventor knows for carrying

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meeting with the inventor, the practitioner can quickly study the model of the invention and grasp its workings. In fact, the model is

out the invention. Armed with a high level understanding of the invention attained by

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3. Model image courtesy of Cognex Corp., rendered in eDrawings® by SolidWorks Corp. Non-confidential model file obtained from the 3D ContentCentral<sup>SM</sup> public web site, [www.3DContentCentral.com](http://www.3DContentCentral.com), © SolidWorks Corporation.

Authors John M. Hammond P.E. (Patent Innovations, LLC [www.patent-innovations.com](http://www.patent-innovations.com)) and Robert D. Gunderman P.E. (Patent Technologies, LLC [www.patenttechnologies.com](http://www.patenttechnologies.com)) are both registered patent agents and licensed professional engineers. They offer several courses that qualify for PDH credits. More information can be found at [www.patenteducation.com](http://www.patenteducation.com).

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