Chapter 15

The Three Major Patent Types

(how Alex used the right mix to protect both "how it works" and "how it looks")

Alex decided that one fence wasn't enough. The light-control mechanism lived in code and circuits. The product also had a distinctive look customers noticed across the room. Protecting both meant understanding the **three** U.S. patent species—**utility**, **design**, and **plant**—and choosing the right combination for the business, not just the lab.

This chapter explains what each type protects, how they're examined and enforced, how they fit into a commercialization plan, and how Alex used utility and design patents together (plant patents are rare in electronics, but we'll cover them briefly so your toolkit is complete). We'll also thread in (A)Idea guidance where AI tools help—and where they can quietly undermine a filing.

Utility patents: protect function and operation

What they cover.

Utility patents protect **how something works or is made**—

methods, systems, articles of manufacture, compositions, and computer-readable media. For Alex, the target was the **cooperation** of (i) tap location for a line-derived signal, (ii) sampling cadence and **windowed** statistic, (iii) hysteresis thresholds and clamp rules in a bounded state machine, and (iv) thermal-interface placement/pressure that kept the loop stable on commodity parts.

How examiners evaluate.

- **Eligibility (§101):** Is this a concrete technological process or device, not just a result or abstract idea? Alex anchored everything to **device operations** and **measurable effects**.

- **Written description/enablement (§112):** Can a skilled person make and use it without undue experimentation, and did the inventor **really possess** the claimed cooperation at filing? Alex taught at least **two** embodiments for each functional element.

- **Novelty (§102)/Obviousness (§103):** Does prior art teach the same elements or make the combination obvious? Alex's search (Ch. 8) mapped clean distinctions and pre-wrote fallback claims.

Claiming strategy.

- **Independent claims** framed the operative steps/structures.

- **Dependent claims** captured likely design-arounds (alternate sampling regimes, threshold families, thermal

placements, QA steps).

- **Method + system + CRM/manufacture** coverage matched how the product is built, sold, and updated in software.

Where utility shines.

- When your advantage is **behavior** (control, signal processing, process steps).
- When copying is easy to hide but leaves **performance fingerprints** you can test.
- When you need leverage with suppliers (method-of-manufacture claims tied to torque/pressure windows).

(AI)deas — Action:
Write claims like a **machine doing work**: sample, compute, transition, clamp, place, compress. Cut "optimize/facilitate/manage" unless backed by structure and sequence.

Design patents: protect ornamental appearance

What they cover.
Design patents protect the **ornamental design** of an article of manufacture—the way it **looks**, not the way it works. In drawings, **solid lines** claim what's protected; **broken lines** show

environment/unchanged parts. For Alex, a design patent targeted the lamp's **distinctive lens pattern** and the **heat-sink bezel** silhouette customers recognized.

How examiners evaluate.

- **Novelty/obviousness (for designs):** Measured against prior designs from the perspective of an **ordinary observer** familiar with prior designs.

- **Functionality doctrine:** Purely **functional** features (shapes dictated by function alone) are not protectable by design patent. Alex's counsel used **broken lines** for functional areas and **solid lines** for ornamental choices.

Filing craft.

- Drawings are everything. Consistent shading, multiple views (front/rear/side/top/bottom/perspective), and careful **broken-line** strategy.

- Consider **partial claiming**: protect just the distinctive bezel or lens, leaving the rest in broken lines so future variants still fall within the claim.

- One design per application; related looks can be pursued in **continuation** designs to build a family.

Where design shines.

- Consumer products and components where the **look** drives recognition or premium pricing.
- Fast allowance timelines; useful stopgaps while utility is examined.
- **Customs/border** enforcement is often more straightforward on visible features.

(AI)deas — Avoidance:
If your marketing deck screams "our bezel shape signals quality," treat that bezel as a **design** asset. Photograph competitive shelves now; it helps show distinctiveness later.

Plant patents: protect asexually reproduced plant varieties

What they cover.
Plant patents protect new and distinct plant varieties that are **asexually reproduced** (e.g., cuttings, grafts). Examination focuses on distinctness, stability, and asexually reproduced propagation.

Why most tech founders skim this.
Unless you're in ag-tech, horticulture, or biotech breeding, plant patents won't apply. If you are, talk to counsel early—**timing** and **photographic evidence** matter.

Picking the right mix (Alex's decision)

Alex pursued **both** utility and design:

- **Utility** on the control/thermal mechanism (the moat nobody sees).
- **Design** on the lens/bezel family (the moat everyone sees).

Why both? Because a competitor could:

- Copy the **look** with a different driver → design patent stops them.
- Copy the **driver** with a different look → utility patent stops them.
- Copy both → you have **two** levers (and often a quicker path to early pressure via design).

(AI)deas — Advisory:
Treat utility and design as **complements**. The first deters "same guts, new face." The second deters "same face, new guts."

Evidence and enforcement: how they differ

Utility enforcement often requires **claim charts** (element-by-element) and **testing** to prove a product practices steps or structures—especially for control methods. Alex kept a bench

protocol tied to **claim elements** (sampling cadence, window lengths, threshold behavior, thermal placement).

Design enforcement relies on **side-by-side visuals** and the **ordinary observer** test. Alex built a "visual playbook" with annotated competitor photos and the issued design drawings.

Damages/marking.
Utility and design both benefit from **marking**. Alex used **virtual marking** (webpage listing issued numbers) and updated packaging. Mark correctly—**only** products covered by at least one issued claim.

Sequencing and timing

- **Design first or with utility?** You can file design **early**, even while utility is in the works. Alex filed a design case once the industrial design settled and kept related looks for continuation designs.

- **Continuations/Divisionals:**

    - Utility: file **continuations** to pursue alternate claim angles and **divisionals** if restriction required.

    - Design: file **continuation** designs to claim related variants (e.g., lens pattern only; bezel only; combined).

- **Publication:** Utility applications generally publish at ~18 months; design applications typically **publish at grant**. If secrecy matters for look, design can be quieter until allowance.

Costs and cadence (big-picture, not fee tables)

- **Utility** costs cluster in **drafting** and **prosecution** (office actions, interviews).

- **Design** costs are mostly in **drawing quality** and filing; prosecution is often lighter, and allowance tends to be faster.

- Alex used design as a **quick win** while utility worked through examination—useful with retailers and branding partners.

(AI)deas — Action:
If you sell on looks and function, budget for **one** core utility + **one to three** design filings. Add continuation designs when a new SKU's face lands.

Global view (without drowning in acronyms)

- **Utility abroad:** Consider **PCT** to keep options open; expect local standards (e.g., Europe's technical-effect focus). Draft your U.S. spec to **travel** (Ch. 11).

- **Design abroad:** Many countries offer **registered designs** (EU design, UK design, Chinese design). Filing windows are tight; some allow **grace periods** for your prior disclosure, many don't. Coordinate with counsel before showcasing at trade fairs.

Practical Alex move: a one-page **jurisdiction map**: where we sell, where we manufacture, where key competitors operate. That kept filings to **fewer, better** countries.

Doctrine pitfalls to avoid

- **Utility "results-only" claims.** Replace "configured to optimize" with **operative** steps and structures.

- **Design functionality trap.** If a shape is dictated by function, it's not design-patent territory; isolate the **ornamental** aspects with partial claiming.

- **Spec/claim mismatch.** Utility claims need **support** for every functional term; design drawings must **consistently** reflect the claimed look.

- **Term confusion.** Utility **term** ties to filing date; design **term** ties to **grant** (details on durations in Ch. 16). Keep calendars straight.

How AI fits (and where it breaks things)

Helpful:

- Generating **variant sketches** for **industrial designers** to explore **ornamental** families—good upstream of a design filing.

- Clustering competitor marketing images by **shape families** (bezel silhouettes, lens textures) to spot look-alike risks.

- Organizing **claim evidence**: extracting cadence, windows, thresholds from lab logs into a chart mapped to utility claims.

Risky:

- Letting AI draft **final** claim language or **design drawings**. Utility claims need human-anchored structure; design drawings must meet strict formal standards.

- Uploading confidential CAD or bench data to **public** tools (training leakage risk). Stick to **enterprise/local** models; keep a **redline** showing human edits.

(AI)deas — Avoidance:

If AI helps brainstorm a **look**, lock real-world authorship: time-stamped designer sketches, iteration notes, and selection rationale. It clarifies who created the ornamental design.

Alex's combined play

1. **Utility:** Filed a robust non-provisional on the control/thermal cooperation (system, method, CRM, and a factory **manufacture** claim).

2. **Design:** Filed an initial design on the **bezel + lens** look; queued a **continuation design** for the lens pattern alone to cover colorways and minor bezel tweaks.

3. **Sequencing:** Used the **design allowance** in partner decks while utility prosecution proceeded (Ch. 12).

4. **Enforcement posture:** Kept two binders ready—one **claim chart** for utility, one **visual comparison** for design—so any inquiry could turn into a professional first letter, not a rant.

Quick self-check before you pick your mix

- Is your advantage **mechanical/electrical/software behavior**? → **Utility** is primary.

- Will customers recognize you by **appearance**? → Add **Design**.

- Are you breeding a **new plant variety**? → Consider **Plant** (and call counsel early).

- Do you have **proof** of the ornamental choices (for design) and **alternative embodiments** (for utility)? If not, fix that before filing.

- Can you fund **one core utility + one design** this year? If yes, do it; add continuations as revenue or investment justifies.

Why this chapter mattered to Alex

The market doesn't attack in one dimension. By pairing **utility** and **design**, Alex made copying expensive whichever route a competitor chose—guts or face. Utility protected the invisible control coop—the reason the product worked on cheap parts. Design protected the visible signature—the reason customers picked it off the shelf. Together, they turned a single product into **two** enforceable stories, each fast to show and credible to enforce.

Next up: **Patent Expiration Dates**—how long each right lasts, what resets (and doesn't), and how Alex planned a portfolio where claims stayed alive when the product's profits needed them most.