



INVALIDATION SEARCH ON ELECTRICAL TECHNOLOGY

CASE STUDY



Invalidation and Search Strategy

- ▶ **Purpose:** An invalidation search aims to find prior art or evidence that can challenge the validity of a granted (Both pre and post grant) patent. This is typically done to prevent or counter legal enforcement of the patent.
- ▶ **Scope:** The search identifies prior publications (Patent or NPL) that could invalidate claims of a subject patent.
- ▶ **Outcome:** If successful, the invalidation weakens or nullifies the enforceability of the patent.
- ▶ **Tools and Source:** It relies on an extensive examination of patent databases, academic publications, technical documentation, and even non-traditional sources such as public demonstrations.

Phase 1

We performed an invalidation search on the electrical patent. The patent described an LED bulb with a shell enclosing a thermally conductive liquid material, efficiently managing heat generated by the bulb. Inside the shell, at least one LED is present. A dispersion material is mixed throughout the liquid, serving two functions: it alters the color of the light emitted by the LED and helps to distribute the light more evenly.

This design ensures optimal light quality and heat dissipation. Lastly, the bulb includes a base compatible with standard sockets, making it easy to install in various lighting fixtures.

Search Summary

We thoroughly reviewed both the patent text and its prosecution history to understand its scope and claim in detail. With this knowledge, we initiated an extensive search using free and paid patent databases. We crafted a search strategy based on synonyms for key terms highlighted in the claim, alongside using the assignee's name and relevant classification codes to refine the search.

Our search began by focusing on patents related to LED bulb designs that utilize a liquid thermally conductive material inside the bulb's shell. This feature enhances heat dissipation, improving the bulb's performance and extending its lifespan. Additionally, the design incorporates a dispersion material within the liquid, which modifies the color of the emitted light and helps to distribute it more effectively, potentially enhancing light quality and distribution. This combination of elements creates a unique approach to LED bulb design, setting it apart from conventional solid or air-filled constructions.

- ▶ Consider expanding on the types of patents searched to provide a more complete overview.
- ▶ Consider elaborating on the limitations of traditional solid or air-filled LED constructions to highlight the advantages of liquid-based design.
- ▶ Consider adding more detail about the specific benefits of improved heat dissipation and light distribution to emphasize the value of the design.

Phase 2

Initially, we focused on patents related to thermally conductive liquid material, as it seemed to be a core feature of the claims. In this early phase of the search, we found several patents that were closely aligned with the claim in the patent in question. However, most of these patents are primarily related to thermally conductive liquid material and the process and elements defined were different. This was a crucial gap that needed to be explored in more detail.

Phase 3

To narrow down the search further, we refined our approach by targeting patents that specifically involved more precise designs, which lie primarily in the use of a liquid thermally conductive material within the shell. We refined our search strategy and leveraged more specific synonyms to filter out unrelated results and pinpoint highly relevant patents to the claim.

In addition to the paid databases, we expanded our search by reviewing non-patent literature (NPLs), such as technical articles and research papers of big companies like Philips, Osram, etc., which often contain valuable insights into state-of-the-art technology that might not yet be patented. This broader approach helped us uncover relevant information that strengthened our position.

Overall Summary

Ultimately, our search revealed existing systems that already tackled the challenge of LED bulb design, specifically through the use of a liquid thermally conductive material inside the bulb's shell. This design significantly improves heat dissipation, boosting the bulb's performance and lifespan. The inclusion of a dispersion material within this liquid also modifies the color of the light and disperses it more efficiently, which can enhance light quality and distribution.

This discovery proved that the patent's claimed invention lacked novelty and could be invalidated based on prior art. By showing the existence of similar systems addressing the patent's technical challenges, we established grounds for invalidation. The search strategy, combined with an in-depth review of both patent documents and non-patent literature (NPLs), offered a broad perspective on the available technology. This review confirmed that the patent's claims did not meet the criteria for novelty and inventive step, as similar solutions were already in use.