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IP PROTECTION FOR CLOUD-ENABLED CONSUMER PRODUCTS

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Presenters



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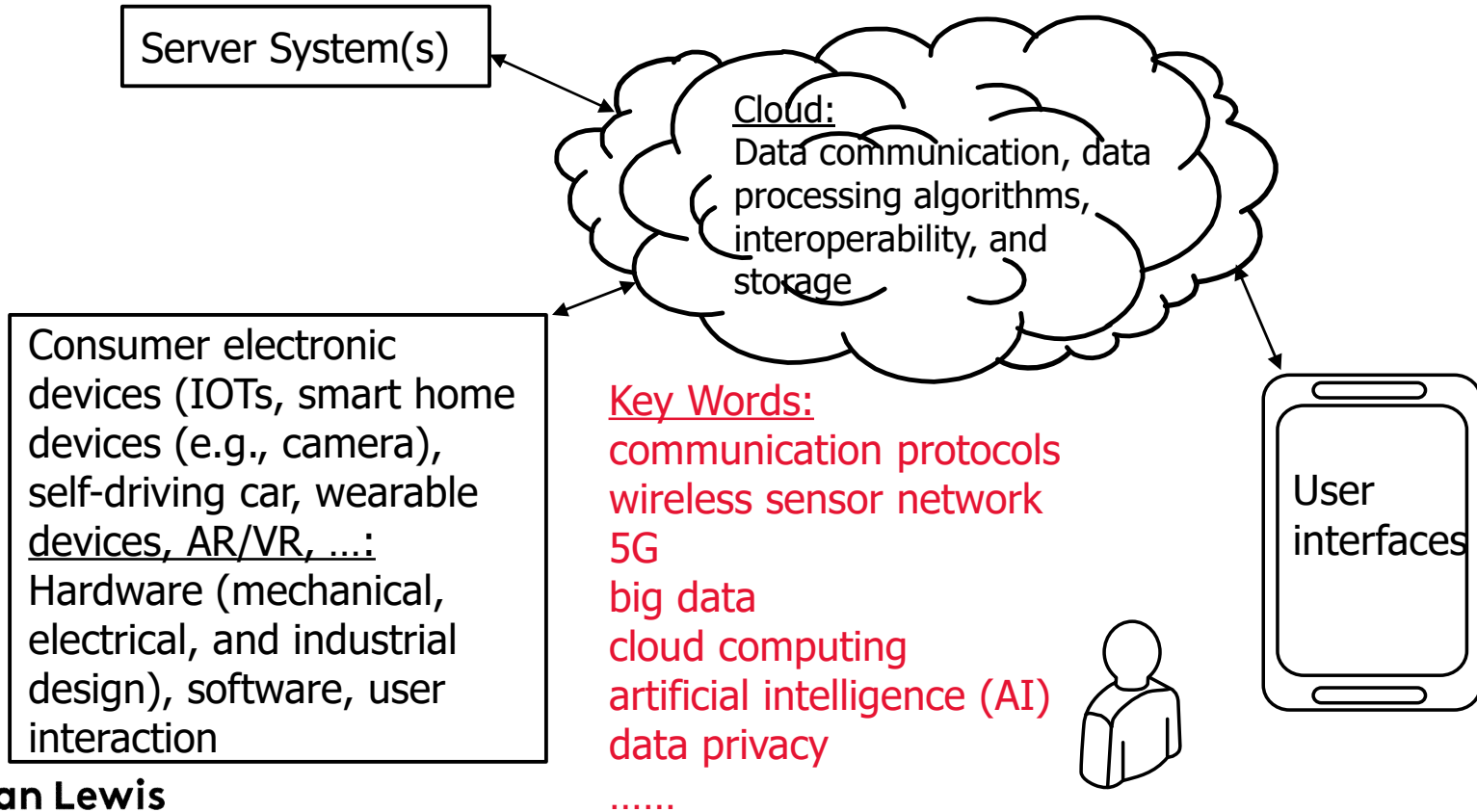
Outline

- Background
 - Consumer Electronics and Operation
 - Market Participants
 - IP Protection Forms and Strategies
- Build Your IP Portfolio!
- Case Study: Internet Surveillance Camera
- IP Portfolio Development Strategies
 - Content of IP Filings
 - Accelerated Prosecution
 - International Filing
- Licensing Considerations

Consumer Electronics

- Consumer Electronics Show (CES) held in January every year in Las Vegas
 - Before pandemic, CES drew ~100,000 industry attendees, 68,000 exhibitor personnel, 6,000 in media
 - For example, what products were shown in CES 2021?
 - Smart home products: Google Nest Hub, Ikea WiFi Speaker, Arlo Pro 3 Spotlight Camera, Arlo Video Camera, August Wi-Fi Smart Lock, Amazon Echo Show 5 (Smart Display with Alexa), Smart Home Appliance
 - Self-driving cars, connected cars, fitness and wearable, home entertainment (e.g., smart TV), augmented and virtual reality, gaming, drone, and many more
 - Internet of Things (IOT)

How Networked Consumer Electronics Operate?



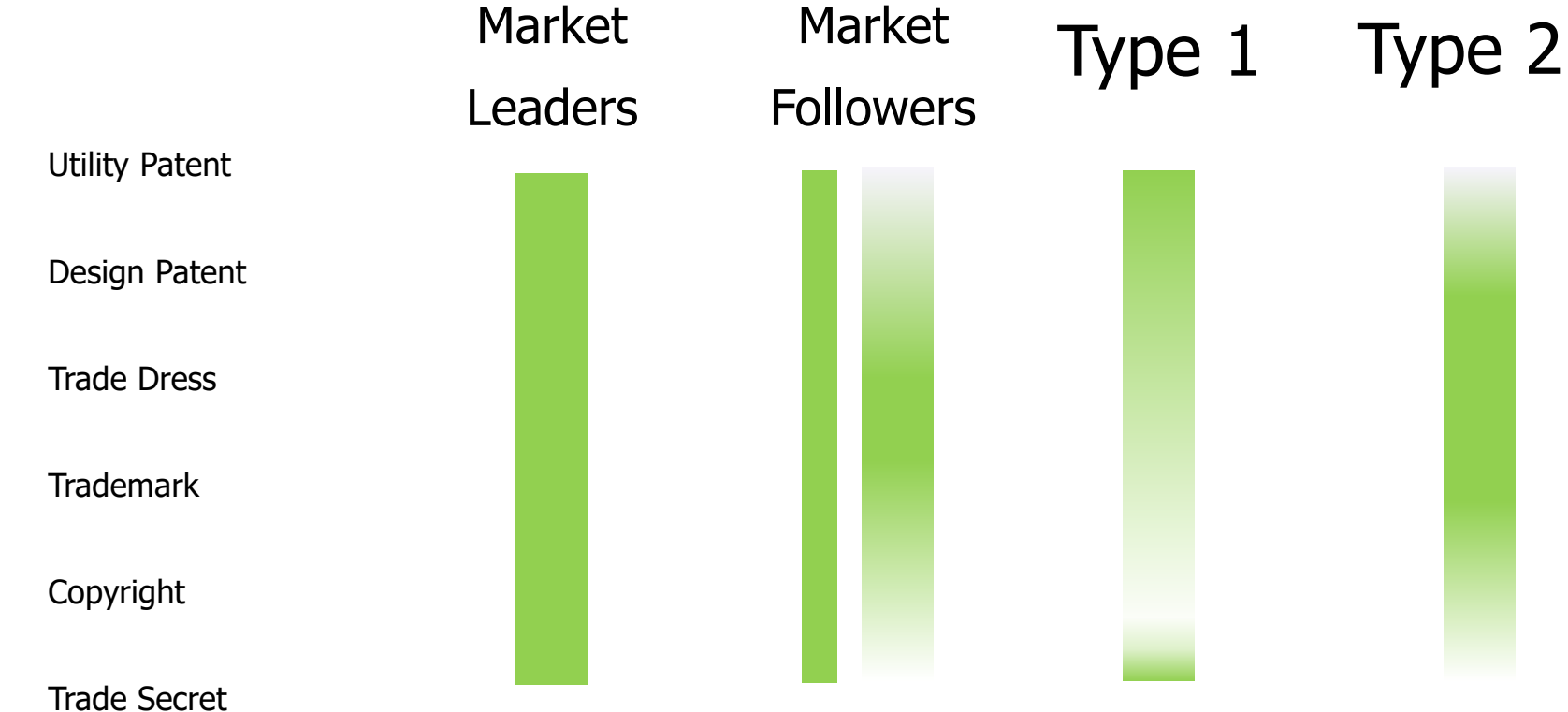
Consumer Electronics Market

- Huge market – annual consumer spending of more than 400 billion US dollars, direct-facing consumers, potentially high profit margin
- Intense competition:
 - Nearly every large hardware or software company has entered this market with different focuses
 - Quick product-cycle matters
- Market pioneers or leaders: first to market, integrate all aspects to offer unique user experience
 - Product category
 - Hardware feature
 - Software feature
 - Interoperability
 - Ecosystem architecture
- Market followers: playing catch-up
 - Independent and strong innovation on one or more aspects
 - Reverse engineering or copying in some cases

Two Main Types of Competitors

- Type 1
 - Organically building competing product verticals
 - Innovating and integrating similar underlying technologies
 - Targeting similar consumer base
 - Interested in building brand recognition
- Type 2
 - Rebuilding successful products on a one-off basis
 - Reverse engineering and minimizing cost
 - Targeting entry-level consumer base
 - Leveraging third-party brand recognition rather than building organic brand
- Two questions determine your legal strategies:
 - What type of market player is your company?
 - What types of competitors are your company competing with?

Intellectual Property Protection Forms



Navigating IP Landscape

- Defensive: avoid infringing third party IP
 - Freedom to Operate (FTO): confirm your company's ability to develop, make, and market products without legal liabilities to third parties (e.g., other patent holders)
 - Landscape and competition surveying
 - Deterrent counterclaim
- Aggressive: protect and acquire IP rights
 - Challenge patents in USPTO using post-grant proceedings
 - Send cease-and-desist letters based on patent, trademark, trade dress, trade secret
 - Litigate in federal courts or ITC
 - Monetize IP by licensing and Royalty Programs

Type 2 Competitors



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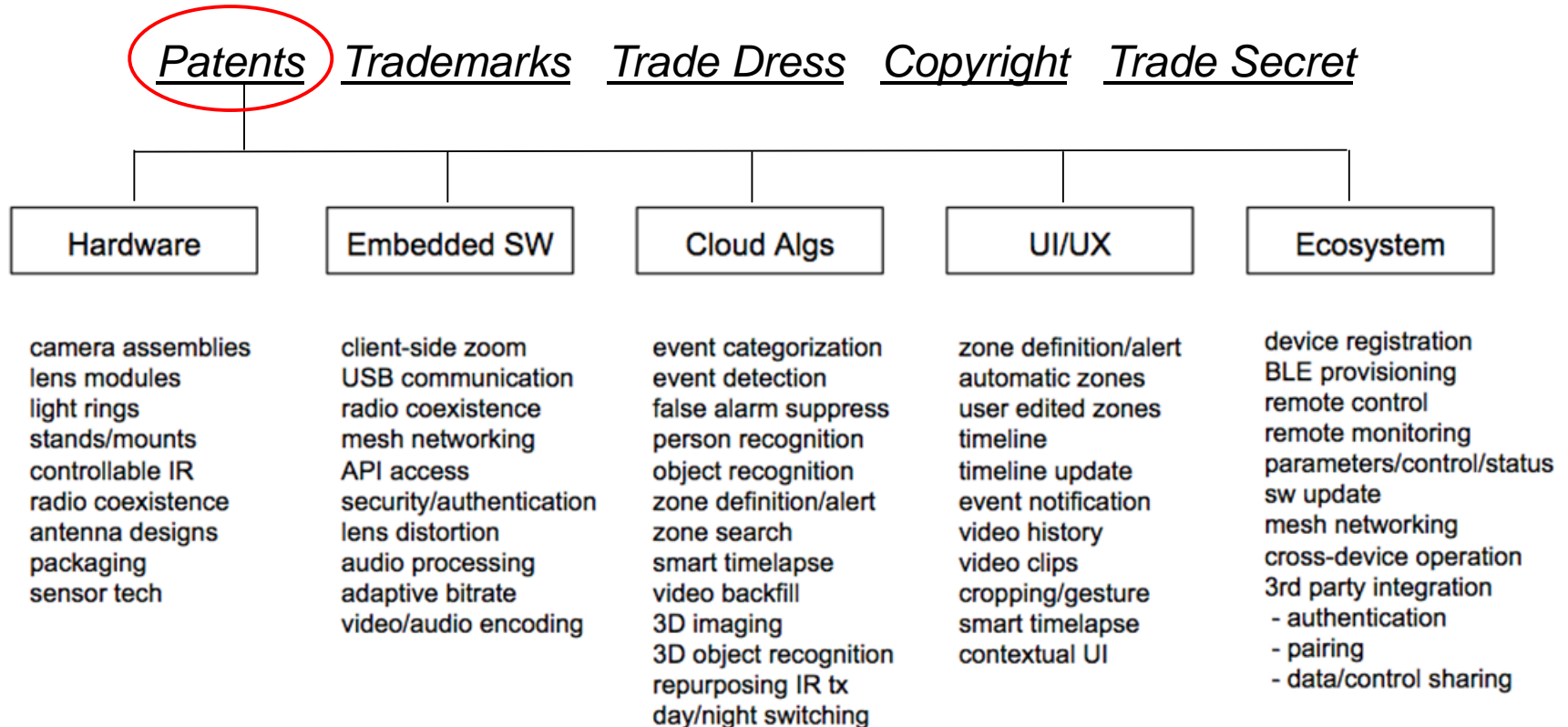
First and foremost, build up your IP portfolio!

What to build?

How to build?

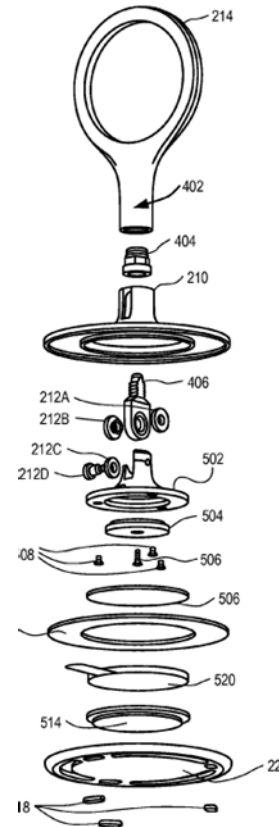
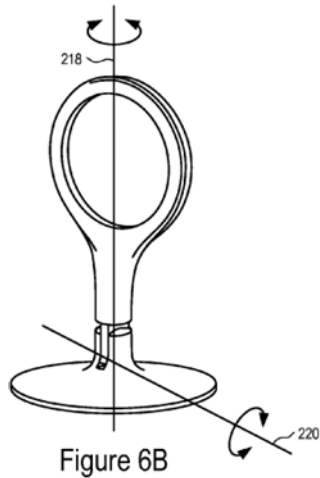
How to use?

IP Pool of Internet Surveillance Camera: Case Study



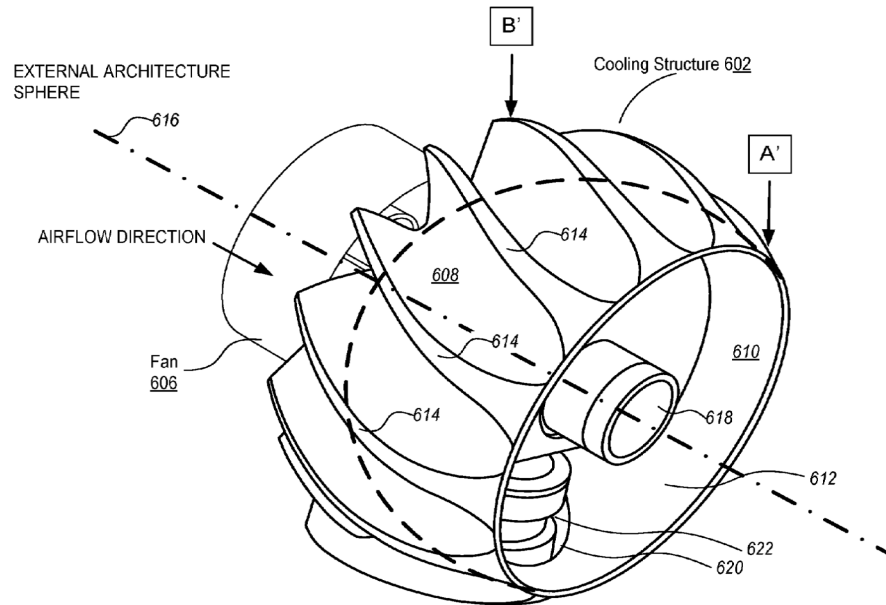
1. Utility – Mechanical

CAMERA STAND HAVING CONSTANT RESISTANCE FOR A PORTION OF A RANGE OF MOTION ALONG AN AXIS OF ROTATION



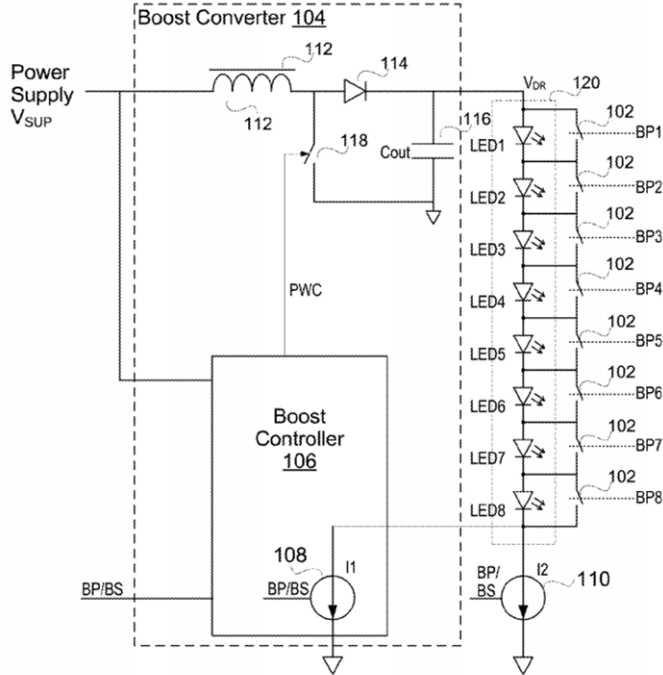
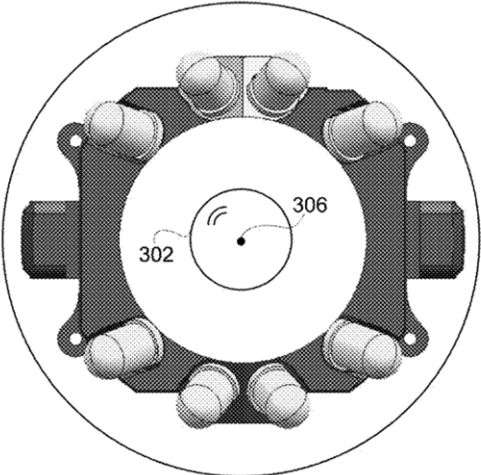
2. Utility – Thermal

ELECTRONIC DEVICE WITH A COOLING STRUCTURE



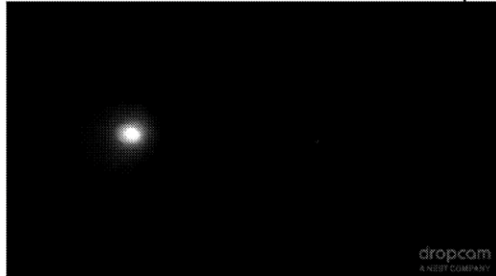
3. Utility – Electrical

MULTI-MODE LED ILLUMINATION SYSTEM



4. Utility – Embedded Software

DAY AND NIGHT DETECTION BASED ON ONE OR MORE OF ILLUMINANT DETECTION, LUX LEVEL DETECTION, AND TILING



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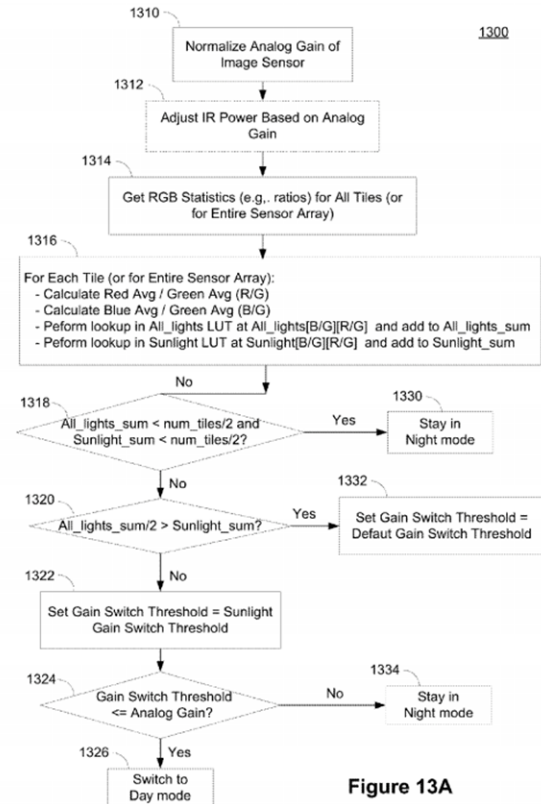


Figure 13A

5. Utility – Cloud Processing

METHOD AND SYSTEM FOR MOTION VECTOR-BASED VIDEO MONITORING AND EVENT CATEGORIZATION

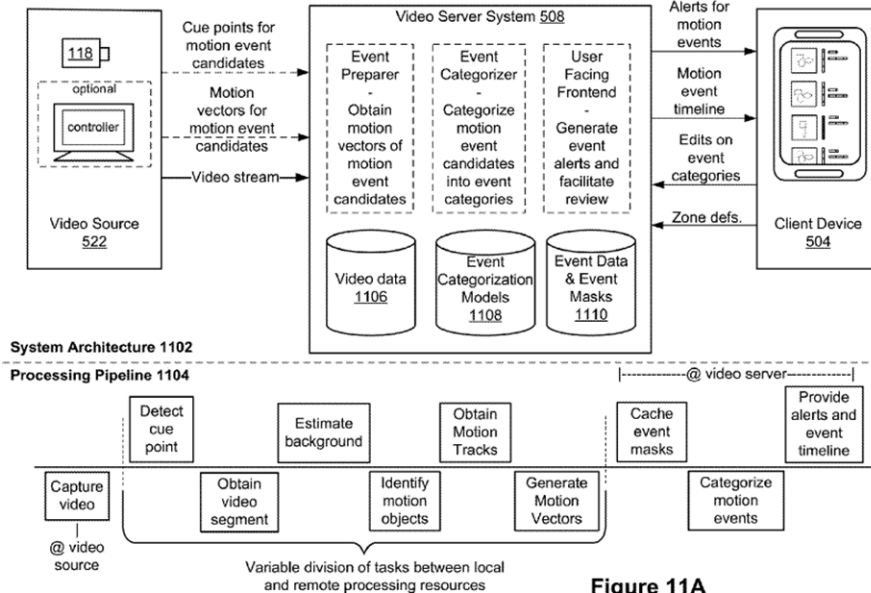
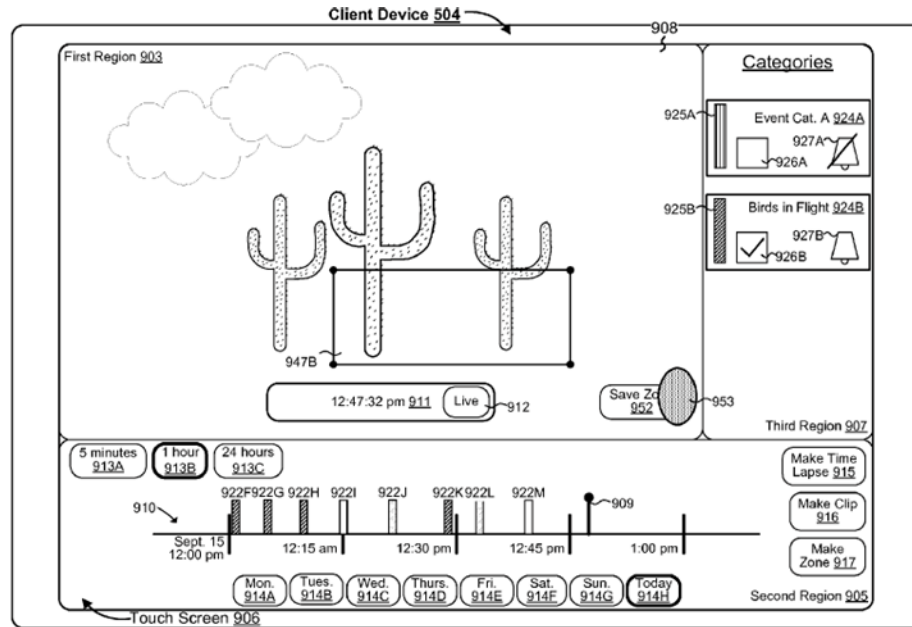


Figure 11A

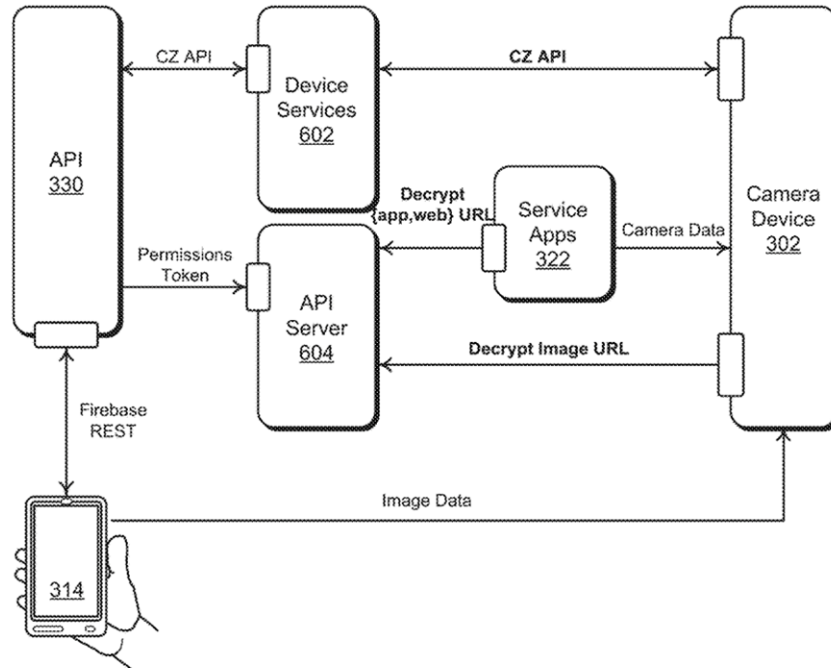
6. Utility – Client Device Applications

METHOD AND SYSTEM FOR CATEGORIZING DETECTED MOTION EVENTS



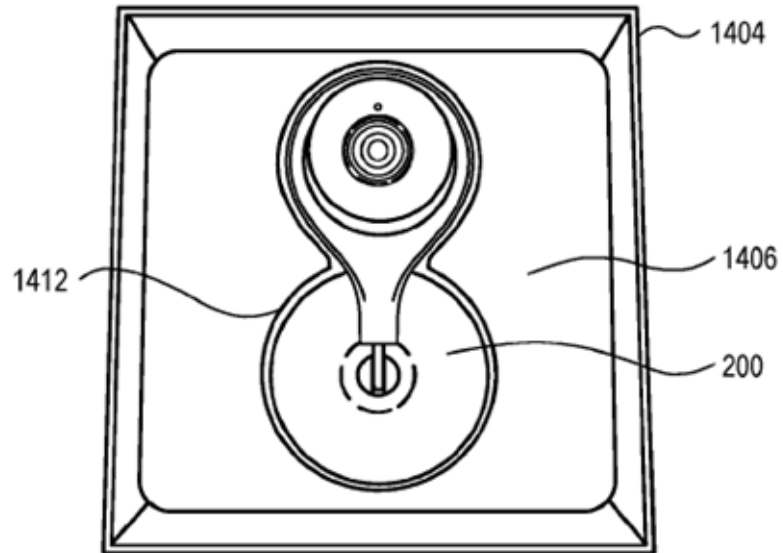
7. Utility – Interoperability

CAMERA SYSTEM API FOR THIRD-PARTY INTEGRATIONS



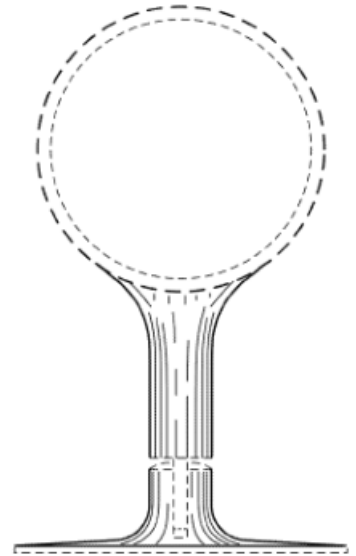
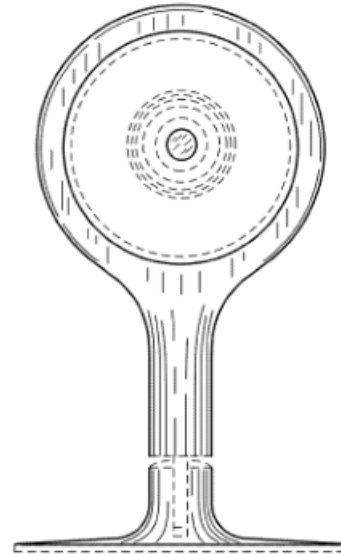
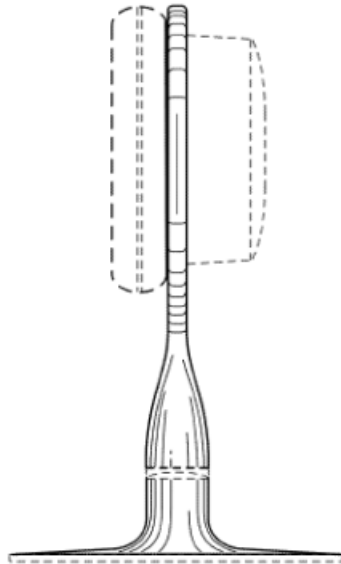
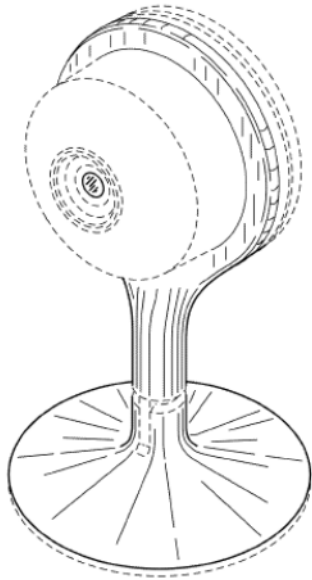
8. Utility – Packaging

METHOD OF PACKAGING CAMERA
FACILITATING EASE OF INSTALLATION



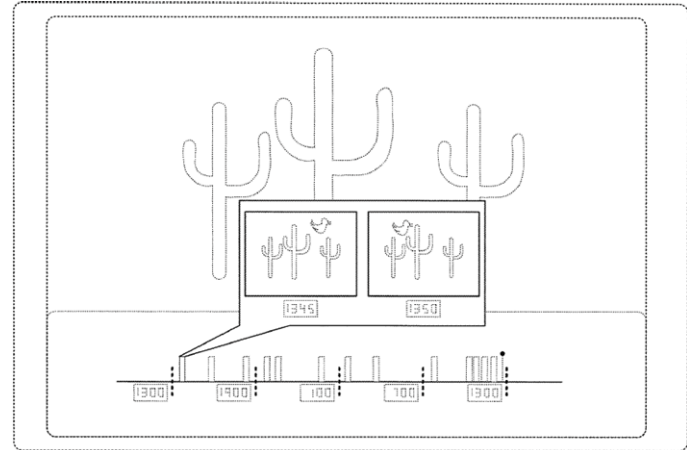
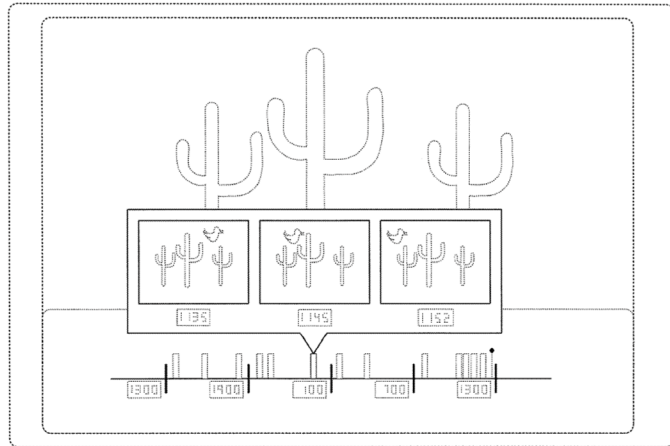
9. Design – Hardware

CAMERA



10. Design – Software

DISPLAY SCREEN OR PORTION THEREOF
WITH GRAPHICAL USER INTERFACE



Content of IP Filings

- Distinctions over prior-generation products with similar functionality and resulting technical advantages
- Cloud infrastructure
- Apps (algorithms and UI/UX – show screens and progressions)
- On-device UI/UX (algorithms and UI/UX)
- User interactions with product/environment
- Exploded mechanical views of product (boards, connectors, housing, electrical, optics, ICs, buttons, sealing)
- Product photos, screen captures, 3D renderings

Content of IP Filings

- Product Industrial Design
 - Alternate design renderings for foreign filings
 - Subcomponent characterizations
- Alternatives
 - Alternate arrangements of components
 - Alternate materials
 - Alternate allocation of processing (e.g., on device vs. cloud)
 - Alternate uses (e.g., different uses of speaker at home, car, or park)
- Future
 - Changes in product due to foreseeable changes in technology
 - But be careful not to include vague descriptions in areas where a company is likely to develop future products
- Utility vs. Design/Trademark/Trade Dress considerations – i.e., avoid undermining

Content of IP Filings

- Domestic Utility
 - Background material in provisionals (design docs, etc.)
- International Utility
 - Claims restructured as clauses
- Domestic Designs
 - Multiple levels of specificity and claim scope
- International Designs
 - Local jurisdiction nuances
- Designs from Utilities

Accelerated Filing/Prosecution Strategy for US Utility Applications

- Track 1 application with narrow claims
- Parallel application with broad claims
- Examiner interviews
- After final consideration
- Strategic CON filing (file CONs in cases with “good” Examiners – check Juristat)
- Claim drafting with keywords to target favorable art units
- In-house counsel participation in interviews

Accelerated Filing/Prosecution Strategy for International Utility Applications

- Leverage available national expedited examination processes
 - Prosecution Patent Highway (PPH)
 - Technology
 - Age of inventor
 - Product in market
 - Product infringed
 - Program for accelerated prosecution of European patent applications (PACE)
- Prosecute in PCT
 - Positive ISR / Positive “IPRP”
 - Selective ISA
 - Leverage PPH
- Prosecute in “Fast” Jurisdiction
 - Leverage PPH
- Collaborative Search Program (JPO/US/etc.)

International Filing Strategy

- Type 1 vs. Type 2 competitors
- Drives decisions on what to file and where
 - EU: utility (all subject to technical effect), design, etc.
 - CN: design, mechanical-like utility & model, trademark
- Timing options:
 - Direct national (Paris Convention) filings in strategic countries/markets
 - PCT filings as backup
 - Different jurisdiction rules for disclosure bar date
- Utility-type options:
 - Utility patents (everywhere)
 - Utility model filings (e.g., Germany, China)
- Design nuances:
 - different national rules on shading, disclaimer
 - different priority rules (6 vs. 12 months)
 - timing (in view of product announcement)
 - different grace periods in different jurisdictions

Strategic Considerations – Patents

Defensive

- Discourage litigation, encourage cross-licensing, provide design freedom

Protection of R&D Investment

- Prevent free-riding, enable valuation of technology

Licensing

- Generate royalty stream, enable technology transfer

Competitive Advantage / Support Product Revenue

- Exclusionary remedy, preclude or conform competition, barriers to entry, protect revenue from patented products (e.g., pharma)

Strategic Partnerships, Consortia, standard essential patents (SEP)

- Enhance status in partnerships, use to influence/guide standards

Encourage Employee Inventors

- Enhance employee reputation due to public identification as inventors
- Patent Award programs benefit employees financially

Enhance Company Reputation as Innovator

- Helps company establish reputation as innovator
- Helps attract employees who are innovators

Difficulty in Maintaining Trade Secret due to Employee and Information Mobility

- Mobile phone, portable storage device, cloud-based data storage

Design Related GUI Trends

- Unwritten USPTO Rules and Examiner Preferences
- New Competitive Markets
- More Immersive and Interactive Displays
- People Willing to Pay for More Services
- Tying of Brand to UI and Products
- Increase in Employee Mobility
- Uncertainty of Utility Protection

Design Patents

- Protects ornamental features of a useful article
- Referred to as industrial, community, or registered designs outside of the US
- Protection rights are defined by the drawings
- Functional elements permitted, but can not claim a “primarily functional” design
- Foreign priority filing deadline is 6 months from first filing
- Domestic priority can be claimed in the US to utility applications but not provisional application
- Average time to registration is 1-2 years but can be expedited (Rocket Docket)
- Term is 15 years from grant (14 yrs. for patents filed before 5/13/15)

Article of Manufacture (AoM)

- This may change but for now, GUI must be tied to a display screen
- Europe doesn't require display screen so be careful if filing in the US off of an EP priority doc
- Federal Register Notice

Boxes and Circles

- Recent increase in rejections for common geometric shapes
- Reluctant to allow collection of “Boxes and lines”
- Examiner prior art guide
- AI searching coming soon?
- Consider layers of novelty

Notes from a Recent GUI Examiner Panel

- 200 total design examiners
 - 17 or so focused on GUIs (only one in 2007)
- Color and grayscale are more likely to be considered in a single application
- Other than AoM border, examiners generally try to treat GUIs the same as “3-D” designs
- Overly vague title
 - Tends to be more common in UI space
 - Describe more detailed description in spec or appendix
- Not a requirement, but examiners prefer one drawing per page at the same location so they can hit page up and down and see animation better
- Use PTO forms (particularly for IDSs) to speed up prosecution
- Color doesn’t show up on search. Only original patent so if in grayscale, be sure to check the spec to see if color is claimed.

Licensing Considerations

- IP rights being licensed
 - Patents, Trademark, Copyright, Trade Secret, etc.
- Utility patents vs. design patents
- Clones (hardware vs. software vs. UI vs. UX)
- Field of use
 - Broad vs. narrowly tailored
- Interoperability
 - Open-source vs. proprietary
- Term
 - hardware vs. software, foundational vs. improvement

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QUESTIONS?

Biography



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Serving as the leader of the firm's semiconductor practice and as a member of the firm's fintech and technology industry teams, Andrew J. Gray IV concentrates his practice on IP litigation and prosecution and on strategic IP counseling. Andrew advises both established companies and startups on AI, machine learning, Blockchain, cryptocurrency, computer, and Internet law issues, financing and transactional matters that involve technology firms, and the sale and licensing of technology. He represents clients in patent, trademark, copyright, and trade secret cases before state and federal trial and appellate courts throughout the United States, before the US Patent and Trademark Office's Patent Trial and Appeal Board, and before the US International Trade Commission.

Biography



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Douglas J. Crisman brings the perspective of a software designer and IP director for a leading computer hardware company to his patent law practice, which includes patent preparation, licensing, and prelitigation opinions, as well as IP transactions, due diligence, and counseling. He routinely works with standards-setting bodies and consortia on IP issues, and provides advice on strategic IP management and open source legal issues ranging from software development to code review and licensing.

Biography



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John Hemmer focuses on patent counselling in the mechanical engineering, industrial design, and life science fields. He collaborates with clients – from startups to Fortune 100 companies – to help them identify patenting opportunities, protect and leverage competitive advantages, manage patent portfolios, and avoid patent infringement. John also prepares and negotiates technology agreements, counsels clients on matters relating to litigation and patent challenges, and works with clients on employment, licensing, investment, merger and acquisition agreements, initial public offerings, and IP due diligence.

Biography



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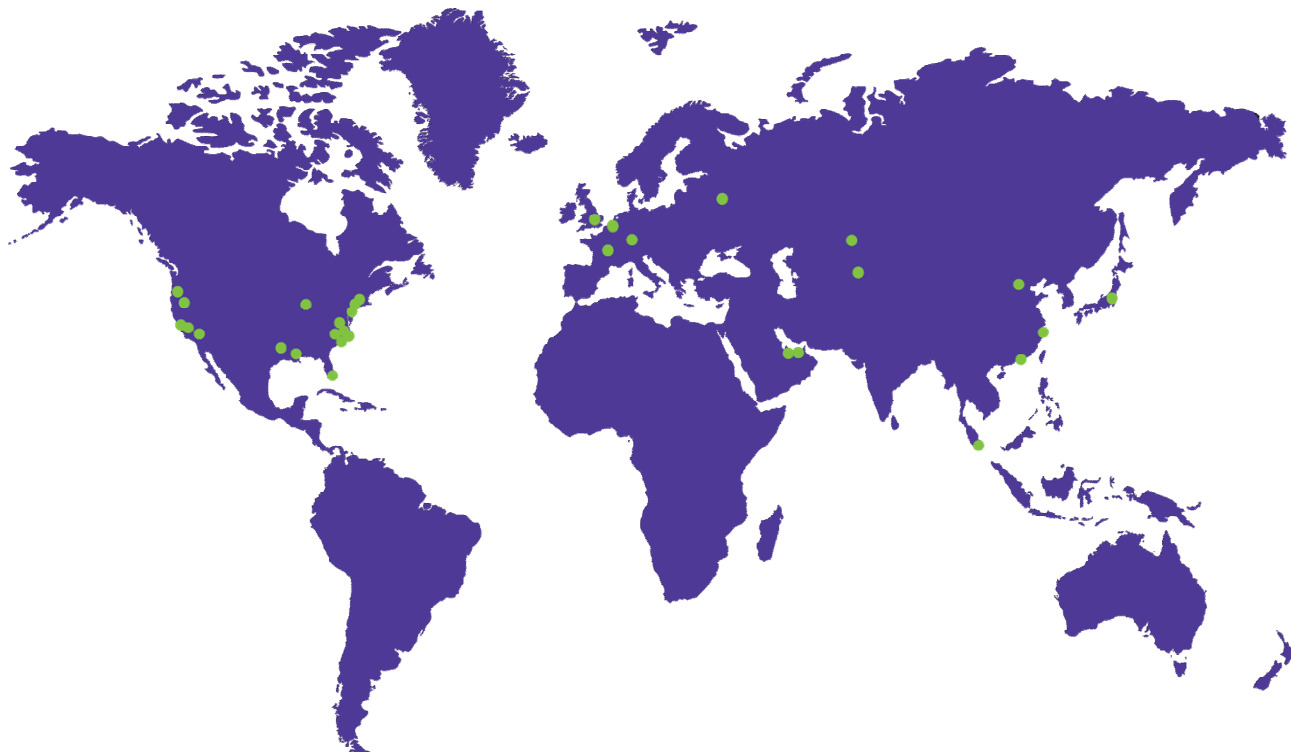
Jianbai "Jenn" Wang, Ph.D., has technology development and patent law experience in many hardware and software fields. Jenn has prosecuted patents covering the areas of microelectronic fabrication, digital and analog circuit design, microcontrollers, signal processing, sensors and actuators, memory systems, computer architecture, image processing, data visualization, software applications, and artificial intelligence. Jenn has also worked on a number of IP due diligence projects involving complex technology. She is fluent in Chinese and English.

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