Disassembly and Study of a Single-Use Camera

Disassembling the Kodak camera was fairly straightforward. With a flat head screwdriver, we removed the tape on the outside and carefully split the casing in two. For safety precautions, the electricity was discharged to allow safe disassembling. The main camera mechanism was easily pulled out. With the Phillips head screwdriver, we removed the small screws to take off the lens and shutter set up. This is where the lens, shutter, and small spring came off. Then next part to come off was the circuit board that powered the flash mechanism. All that was left was the plastic casings. The film and the film container was removed from the shell, leaving the main inside plastic housing. Overall, all of these functional components work cohesively in order to produce a stable camera able to capture crisp photo.

However, disposable cameras are simply constructed from only a few different materials. Nothing too special or rather unique is used in order to keep production fairly cheap and simple in order for prices to be kept low and very reasonable.

<table>
<thead>
<tr>
<th>Part:</th>
<th>Material:</th>
<th>Part:</th>
<th>Material:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Front/Back Cover</td>
<td>Polystyrene</td>
<td>Sprocket</td>
<td>ABS Plastic</td>
</tr>
<tr>
<td>Central Chassis</td>
<td>Polystyrene</td>
<td>Film Advance Gear</td>
<td>ABS Plastic</td>
</tr>
<tr>
<td>Actuating Button</td>
<td>ABS Plastic</td>
<td>Lenses</td>
<td>Clear ABS Plastic</td>
</tr>
<tr>
<td>Actuating Arm</td>
<td>ABS Plastic</td>
<td>Viewfinder</td>
<td>Clear ABS Plastic</td>
</tr>
<tr>
<td>Lens Holder</td>
<td>ABS Plastic</td>
<td>Apertures</td>
<td>1040 Steel</td>
</tr>
<tr>
<td>Camshafts</td>
<td>ABS Plastic</td>
<td>Shutter</td>
<td>1040 Steel</td>
</tr>
<tr>
<td>Film Advance Lock</td>
<td>ABS Plastic</td>
<td>Shutter Spring</td>
<td>1040 Steel</td>
</tr>
<tr>
<td>Frame Counter</td>
<td>ABS Plastic</td>
<td>Actuating Spring</td>
<td>1040 Steel</td>
</tr>
<tr>
<td>Circuit Board</td>
<td>Copper, epoxy resin, solder, woven glass, aluminum</td>
<td>AA Battery</td>
<td>Nickel-plated steel, zinc, potassium hydroxide, brass</td>
</tr>
</tbody>
</table>
With the recycle process we concluded that the components of the disposable camera that are made out of ABS plastic, the back cover, the camshaft, the film advance gear, the film advance lock, the sprocket, the frame counter, the front cover, the central chassis, the lenses holder, and the actuating button would get melted down and reuse again. The film cartridge which provides the medium for capturing images we decided that, that component would get discarded after the first and only use. The circuit board which provides flash of light that allows the camera to function would get reuse and be place into another camera. With the springs and the shutter, which are made out of 1040 steal would get broken down and new ones would be made to put into the camera. The last components that would get reuse are the lens which focuses light on the film, and the viewfinder which allows user to see image that will be captured.

**Suggested Redesign:**
A possible redesign for the Kodak Single Use Camera would be to find a way to increase the amount of photos per film. By doing this cameras would last longer meaning they would be recycled less often. By recycling the cameras less often, less energy would be used due to not taking these cameras back to the plant for reuse.

**Camera Components:**

1. **Body Components:**
2. Circuit Board:
Front:

- Flash Tube
- Battery
- Circuit Board
- Flash Charge Button

Back:

- Capacitor
- Circuit Board (back)
- Battery

3. Picture Circuit:
4. Actuation Parts (Picture Taking Apparatus):

- Actuating Button
- Flash Tube
- Circuit Board
- Capacitor
- Shutter
- Shutter Spring
- Film Advance Gear
- Frame Counter
- Film Advance Lock
- Sprocket
- Film Roller
- Camshaft
- Actuating spring
- Film Container with Film

- Recyclable Camera Unit
  - Energy Processing
    - Light
    - Electrical
    - Lens
    - Viewfinder
    - Image Projected on film flame
    - Image Stored
    - Light sensitive Film
  - Material Processing
    - Mechanical
    - Battery
    - Cock Shutter
    - Advance Film & Wind up shutter
    - Advance Film by one Frame
    - Flash Charging
    - Flash Dischargi
    - Open Shutter
  - Signal Processing
    - Film Counting
    - Trigger Shutter Open
    - Trigger Shutter Discharging
    - Turn on Flash Charging
    - Flash ready signal

Work Cited:
http://www.google.com/patents/US3710706