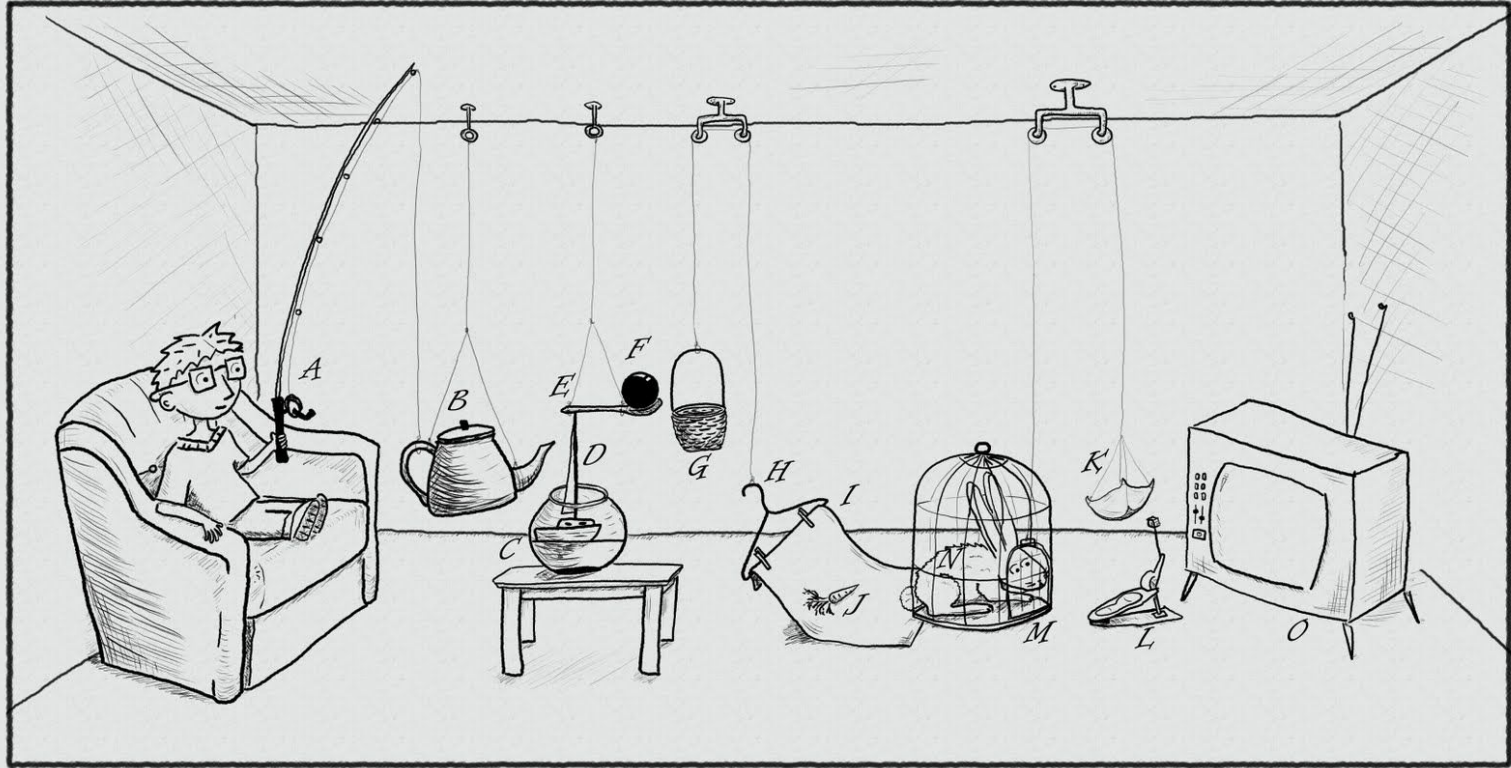


Invention of the week - no. 55

The Remote Control



Boy sitting on couch reels in fishing rod (A) causing kettle (B) to tilt and pour water into fish bowl (C). As water level rises, toy yacht (D) floats higher and tilts spoon (E) causing ball (F) to roll into basket (G). As basket drops to floor, coat hanger (H) rises making towel (I) stretch tight and baby carrot (J) is launched through the air. As carrot lands in napkin (K), it falls gently onto bass drum pedal (L) and causes door of rabbit cage (M) to open. Rabbit (N) comes out of cage to eat carrot, and steps on bass drum pedal causing pedal to strike the power button on television (O) allowing boy to enjoy the show.

How We Got Here

- Follow-on to TCP over Satellite (TCPSAT) working group (1997-2000)
 - Key problem was very long RTT interaction with slow loss recovery
 - Are we ever going to use more than a few percent of expensive satellite links?
- Proposal for "TCP over Cellular"
 - ADs suggested structured approach instead of "TCP over Foo Links"
- Performance Implications of LINK Characteristics (PILC) working group (1999-2004)
 - Links that were Slow, Asymmetric, with Errors
 - Advice for Subnetwork Designers, Advice about Automatic Repeat reQuest (ARQ)
 - Advice about Performance Enhancing Proxies (PEPs)
- Recommendations adopted in Wireless Application Protocol (WAP) Forum v2
 - Life was good ... for a while
- So, has ANYTHING on the Internet changed since 2004? Yeah, probably ...

Has anything in networking changed since 2004?

- Bandwidth capability has risen astronomically, both wireline and wireless
- Bandwidth demand increases kept pace with bandwidth capability increases
- Our focus has turned from LINK characteristics to PATH characteristics
- Multihomed hosts are now the rule, rather than the exception
- Transport protocols now more likely to provide multipath capability
- Increased use of transport encryption interferes with PEPs (for better or worse)
- Many paths have extremely low bit error rates ... but others still have high error rates
- Satellites still have nice, long RTTs, but not all long-RTT paths are over satellite ...

What I'd like to do at IETF 105

"The Code Lounge is for brainstorming", so, let's brainstorm a bit.

Side meeting *in the IETF Code Lounge Wednesday at 8:30-9:30*, to discuss next steps before IETF 106.

The research community has been thinking about path-aware networking, so let's talk with them about what is engineering, and ready for the IETF to make recommendations for, and what is still research, so not ready for the IETF.

PANRG is scheduled **in the Laurier room, at 13:30-15:30 on THURSDAY.**