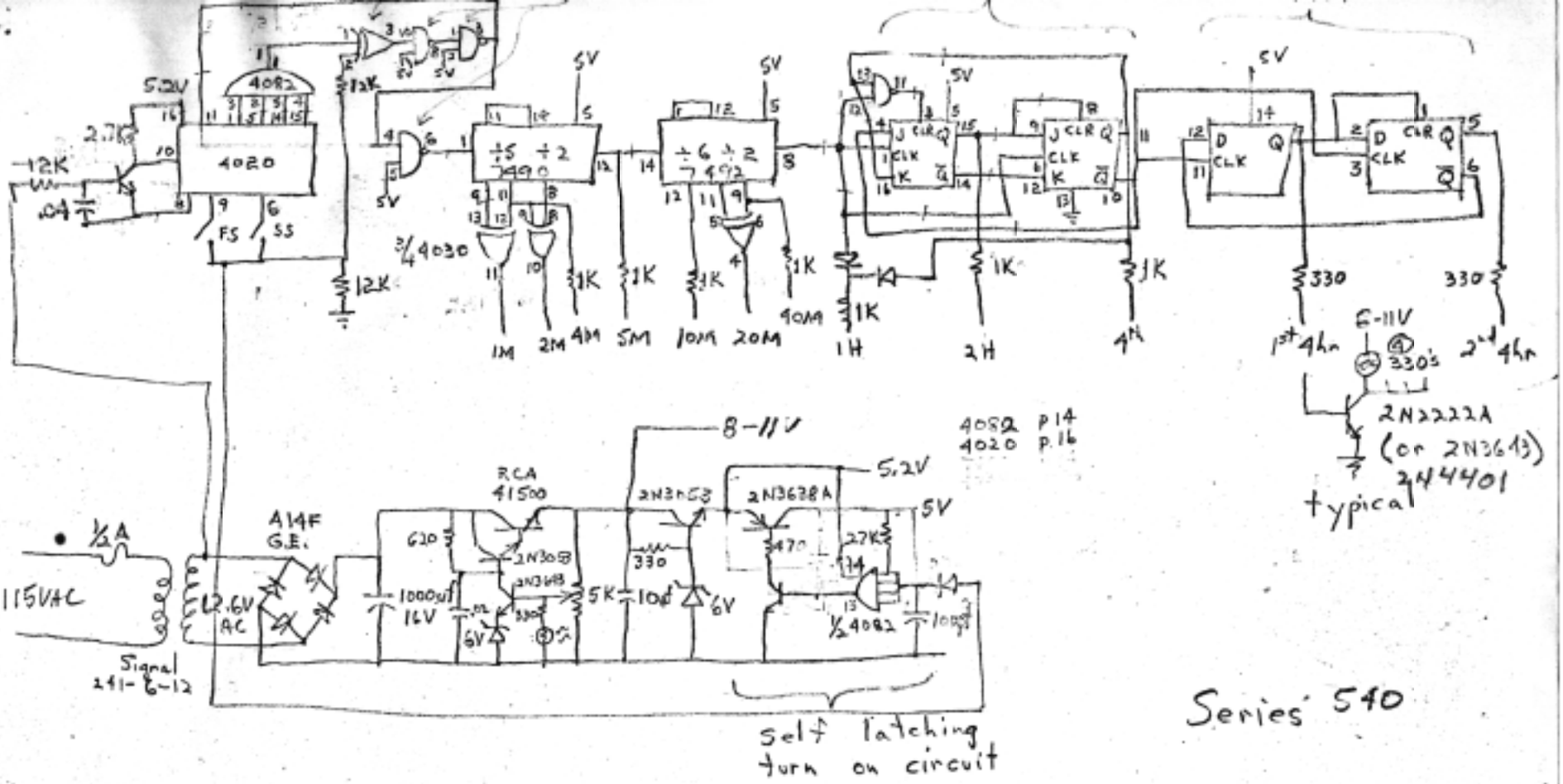

All transistors not marked are 2N3643
All Resistors 1/4W 5%
Photo resistor is Monica MKY1-7C38E 7.5K at 10lux
Reed switch is G.E. DR-600 although anything will work

Circuit description. The incoming 60Hz is first shaped and then enters the 4020 to be divided by 3600 to get one pulse per minute. This signal then goes into the 7490 (÷5, ÷2) The outputs of the 7490 are decoded by the 4030. The fast & slow set switch cause 60Hz & 1Hz (approx.) to go directly into the 7490. The other dividers are self explanitory.

The most typical failure is caused by the customer failing to unplug the clock when changing lamps. The transistor driving 5, 20 or 4 lamps is all that fails when this happens.