1 **SPECIFIC SIGNAL DISCRIMINATING (E.G., COMPARING, SELECTING, ETC.) WITHOUT SUBSEQUENT CONTROL**
2 .By phase
3 ..Comparison between plural inputs (e.g., phase angle indication, lead-lag discriminator, etc.)
4 ...With transducer
5 ...With input derived from feedback
6 ...With electron space discharge
7 ...With reference signal
8 ....With varying frequency
9 ....With sampling
10 ....Uniform pulse waveform
11 ....With transformer
12 ...With logic or bistable circuit
13 .By shape
14 ..Slope
15 ...With direction (i.e., positive or negative)
16 ..Having feedback
17 ..With reference signal
18 .By presence or absence pulse detection
19 ..Arbitration
20 ..Monitoring (e.g., failure detection, etc.)
21 ..With variable frequency source
22 .By pulse noncoincidence
23 .By pulse coincidence
24 ..Edge sensing
25 ..With uniform spacing
26 ..With pulse width detecting
27 ..With reference
28 .By polarity
29 ..Selection of a particular polarity
30 ..Opposite polarity
31 .By pulse width or spacing
32 ..With shock-excited circuit
33 ..With sampling
34 ..Narrow pulse elimination or suppression
35 ..Separating by duration or gap (e.g., duty cycle, etc.)
36 ..Selection of a particular pulse width
37 ..Comparison by threshold or reference
38 ..With plural paths
39 .By frequency
40 ..Comparison between plural inputs
41 ...With synchronous detection
42 ...Fixed frequency reference signal
43 ...With logic or bistable circuit
44 ..With predetermined frequency selection
45 ...Including sampling or reference frequency
46 ...Including plural frequency detection
47 ..Frequency detection
48 ...With counting
49 ...With logic or bistable circuit
50 .By amplitude
51 ..With sensing amplifier
52 ...Differential amplifier
53 ....Current mirror
54 ....Having feedback
55 .....Cross-coupled
56 ....With reference signal
57 ...With latching type element (e.g., flip-flop, etc.)
58 ..Maximum or minimum amplitude
59 ...Employing input compared to output
60 ...Employing input compared to reference derived therefrom
61 ...By diode-capacitor network
62 ...Maximum and minimum amplitude
63 ..Comparison between plural varying inputs
64 ...With logic or bistable circuit
65 ...Differential input
66 ....Current mirror
67 ....Having feedback
68 ...Input provides varying reference signal
69 ...With plural paths
70 ....With single output
71 ...Three or more inputs
72 ..Input signal compared to reference derived therefrom
73 ...Reference derived by feedback
74 ..Input signal compared to plural fixed references
75 ...Three or more
76 ...With logic or bistable circuit
77 ..Input signal compared to single fixed reference

78 ...Reference level crossover detecting
79 ....Zero crossover
80 ...Reference determined by threshold of single circuit element
81 ....With transistor
82 ...Plural sources of input signal
83 ...Temperature compensation
84 ...With bridge circuit
85 ...Inverting input or output
86 ...With transformer
87 ...Having feedback
88 ...With source as reference
89 ...With differential amplifier
90 ..Comparison between two characteristics of an input signal
91 ..Including details of sampling or holding
92 ...With bridge circuit
93 ...With reference source
94 ...Sample and hold
95 ....Having feedback
96 ....With differential amplifier
97 ..With logic or bistable circuit
98 .By separating composite signal
99 .Having selection between plural continuous waveforms
100 **SIGNAL CONVERTING, SHAPING, OR GENERATING**
101 .Converting input current or voltage to output frequency
102 .Converting input frequency to output current or voltage
103 .Converting input voltage to output current or vice versa
104 .Converting, per se, of an AC input to corresponding DC at an unloaded output
105 .Synthesizer
106 ..Having stored waveform data (e.g., in ROM, etc.)
107 ..Having digital device (e.g., logic gate, flip-flop, etc.)
108 .Current driver
109 ..Having semiconductive load
110 ..Having inductive load (e.g., coil, etc.)
111 ..Having capacitive load
112 ...Push-pull
113 .Frequency or repetition rate conversion or control
114 ..Of output rectangular waveform
115 ...Frequency division
116 ...Frequency multiplication
117 ..Frequency division
118 ...Having discrete active device (e.g., transistor, triode, etc.)
119 ..Frequency multiplication (e.g., harmonic generation, etc.)
120 ...With plural outputs
121 ....Selective
122 ...Doubling
123 ...With particular tube or distributed parameter element
124 .By periodic switching (e.g., chopper, etc.)
125 .Generating parabolic or hyperbolic output
126 .Generating staircase output
127 ..With differential amplifier
128 ..With rectifying element
129 .Generating sinusoidal output
130 .Generating trapezoidal output
131 .Generating sawtooth or triangular output
132 ..With current source or current mirror
133 ..With distortion control (e.g., linearization, etc.)
134 ..With slope or duration control
135 ..Having digital element
136 ..Having particular delay or sync
137 ..Having feedback
138 ..Having temperature compensation
139 ..Having inductive load
140 ..With amplitude control
141 .Synchronizing
142 ..Reset (e.g., initializing, starting, stopping, etc.)
143 ...Responsive to power supply
144 ..Using multiple clocks
145 ...Having different frequencies
146 ...With feedback
147 ....Phase lock loop
148 .....With charge pump
149 .....With variable delay means
150 .....With digital element
151 ...With counter
152 ...With choice between multiple delayed clocks
153 ...With delay means
154 ..With feedforward
155 ..With feedback

156 ...Phase lock loop
157 ....With charge pump
158 ....With variable delay means
159 ....With digital element
160 ..With counter
161 ..With delay means
162 ..Having reference source
163 ...By phase
164 .Generating rectangular (e.g., clock, etc.) or pulse waveform having random characteristic (e.g., random width, etc.)
165 .Regenerating or restoring rectangular (e.g., clock, etc.) or pulse waveform
166 ..Having digital device (e.g., logic gate, flip-flop, etc.)
167 ..Having network providing particular mathematical function (e.g., integrator, etc.)
168 ..Having inductive device (e.g., transformer, etc.)
169 ..Having negative resistance device (e.g., tunnel diode, etc.)
170 .Slope control of leading or trailing edge of rectangular (e.g., clock, etc.) or pulse waveform
171 .Output pulses having opposite polarities
172 .Rectangular (e.g., clock, etc.) or pulse waveform width control
173 ..Pulse narrowing
174 ..Pulse broadening
175 ..Duty cycle control
176 ..Having digital device (e.g., logic gate, flip-flop, etc.)
177 ..Having inductive device (e.g., transformer, etc.)
178 .Rectangular (e.g., clock, etc.) or pulse waveform amplitude control
179 ..Gain
180 ..Limiting, clipping, or clamping
181 .Electromagnetic pulse forming
182 .Delay line or capacitor storage element charged or discharged through or by a relaxation oscillator type circuit to form pulse
183 .Delay line or capacitor storage element charges or discharges through a tube to form pulse
184 .Rectangular (e.g., clock, etc.) or pulse waveform generating by conversion from input AC (e.g., sine, etc.) wave
185 .Particular stable state circuit (e.g., tristable, etc.)
186 ..Superconductive (e.g., cryogenic, etc.)
187 ..External effect device (e.g., light, heat, magnetic, or mechanical force sensitive devices, etc.)
188 ..Minority carrier storage effect
189 ...Storage diode (e.g., step recovery, etc.)
190 ..With transformer or saturable core device
191 ...Blocking oscillator
192 ..Negative resistance transistor (e.g., unijunction, etc.)
193 ...Four or more layer device, (e.g., trigistor, etc.)
194 ..Zener or capacitive diode
195 ..Negative resistance diode having "N"-shape characteristic on I-V plot (e.g., tunnel diode, backward diode, etc.)
196 ..Negative resistance diode having "S"-shape characteristic on I-V plot (e.g., four or more layer semiconductor device, etc.)
197 ..Convertible circuit (e.g., bistable to monostable, D-type to T-type, etc.)
198 ..Initializing, resetting, or protecting a steady state condition
199 ..Circuit having only two stable states (i.e., bistable)
200 ...Dynamic bistable
201 ....Complementary clock inputs
202 ...Master-slave bistable latch
203 ....Including field-effect transistor
204 ....Including multi-emitter or multi-collector bipolar transistor
205 ...Using hysteresis (e.g., Schmitt trigger, etc.)

206 ....Including field-effect transistor
207 ...Including diverse solid state devices (e.g., FET/bipolar, etc.)
208 ...Including field-effect transistor
209 ....Including enhancement and depletion devices
210 ....CMOS
211 .....With clock input
212 ....With clock input
213 .....Plural independent clock inputs (i.e., non complementary)
214 ...Complementary transistors
215 ...Having at least two cross-coupling paths
216 ....JK type input
217 ....RS or RST type input
218 ....D type input
219 ....Particular device at input, output, or in cross-coupling path
220 .....With diode
221 .....Parallel RC network in cross-coupling path
222 .....Resistor in cross-coupling path
223 ...Plural transistors of same conductivity type
224 ...With single semiconductor device
225 ...With logic element (e.g., NOR gate, etc.)
226 ...With single electron tube
227 ..Monostable
228 ...Having cross-coupled paths
229 ...Having differential circuitry
230 ...With external feedback (i.e., output to input)
231 .Phase shift by less than period of input
232 ..Dependent on frequency
233 ..Correction to specific phase shift
234 ...Dependent on variable controlled phase shifts
235 ...Dependent on multiple fixed phase shifts
236 ...By phase comparator or detector
237 ..Variable or adjustable
238 ...Quadrature related (i.e., 90 degrees)
239 ...Non-overlapping multiple outputs
240 ...Maintaining invariant amplitude
241 ...With counter or shift register
242 ....Having multiple outputs
243 ...With feedback
244 ....With phase comparator or detector
245 ....Having multiple outputs
246 ...With differential amplifier
247 ....Having multiple outputs
248 ...With adder
249 ....Having multiple outputs
250 ...With active time delay element
251 ....Having multiple outputs
252 ...With passive time delay element
253 ....Having multiple outputs
254 ..Quadrature related (i.e., 90 degrees)
255 ...90 degrees between input and output
256 ..Phase inversion (i.e., 180 degrees between input and output)
257 ...Multiple outputs
258 ..Multiple outputs
259 ...Non-overlapping
260 ..Producing AC power control
261 .Having specific delay in producing output waveform
262 ..Including significant compensation (e.g., temperature compensated delay, etc.)
263 ..Delay interval set by rising or falling edge
264 ...Having specific active circuit element or structure (e.g., FET, complementary transistors, etc.)
265 ....With counter
266 ....Differential amplifier
267 ....Electron tube
268 ...Having specific passive circuit element or structure (e.g., RLC circuit, etc.)
269 ..Multiple outputs with plurality of delay intervals
270 ...Variable or adjustable
271 ...Including delay line or charge transfer device

272 ...Having specific active circuit element or structure(e.g., FET, complementary transistors, etc.)
273 ....With counter
274 ....Differential amplifier
275 ....Electron tube
276 ..Single output with variable or selectable delay
277 ...Including delay line or charge transfer device
278 ...Having specific active circuit element or structure (e.g., complementary transistors, etc.)
279 ....With counter
280 ....Differential amplifier
281 ....Field-effect transistor
282 ....Electron tube
283 ...Having specific passive circuit element or structure (e.g., RLC circuit, etc.)
284 ..Including delay line or charge transfer device
285 ..Having specific active circuit element or structure (e.g., complementary transistors, etc.)
286 ...With counter
287 ...Differential amplifier
288 ...Field-effect transistor
289 ...Electron tube
290 ..Having specific passive circuit element or structure (e.g., RLC circuit, etc.)
291 .Clock or pulse waveform generating
292 ..Clock fault compensation or redundant clocks
293 ..With plural paths in network
294 ...With common output
295 ..Plural outputs
296 ...Plural clock outputs with multiple inputs
297 ...Clock bus
298 ..Single clock output with multiple inputs
299 ..Single clock output with single clock input or data input
300 ..With saturable inductance
301 ..With electron beam type tube
302 ..With storage diode
303 ..With rectifier
304 ..With inductive device (e.g., transformer, etc.)
305 ..With gas tube
306 .Amplitude control
307 ..Baseline or DC offset correction
308 ..Variable attenuator
309 ..By limiting, clipping, or clamping
310 ...Transient or signal noise reduction
311 ....By filtering
312 ....By feedback limiting-clamping
313 ....Using 3 or more terminal type nonlinear devices only
314 ....Using diode type nonlinear devices only
315 ...Providing constant input/output amplitude level ratio
316 ....By feedback control
317 ...Distortion compensation
318 ...In input or output circuit
319 ....For interstage coupling
320 .....Using diode
321 ....Clamping of output to voltage level
322 ....Of output current
323 ...Feedback
324 ...By using diverse-type nonlinear devices
325 ...Using only diode active elements
326 ....Avalanche or negative resistance device (e.g., zener diode, tunnel diode, etc.)
327 ...Using only transistor active elements
328 ....Field-effect type device
329 ...With tuned circuit
330 ...With rectifier or nonlinear impedance
331 ..Maintaining constant level output
332 ...With feedback
333 ..Interstage coupling (e.g., level shift, etc.)
334 **SPECIFIC INPUT TO OUTPUT FUNCTION**
335 .By differentiating
336 .By integrating
337 ..Having switched capacitance
338 ..With thermionic tube
339 ..With summing or counting
340 ..Single vacuum tube
341 ..With compensation
342 ..With transducer
343 ..With rectifier circuit

344 ..Including RC circuit
345 ..Having feedback
346 .Exponential
347 ..Square root
348 ...RMS
349 ..Square function
350 .Logarithmic
351 ..With cascade network
352 ..With summing
353 ..With vacuum tube
354 .Absolute value
355 .Combining of plural signals
356 ..Product
357 ...Quadrant
358 ...Having feedback
359 ...Differential amplifier
360 ..Quotient
361 ..Summing
362 .With compensation
363 .Having feedback
364 .With vacuum tube
365 **GATING (I.E., SWITCHING INPUT TO OUTPUT)**
366 .Superconductive (e.g., cryogenic, etc.) device
367 ..Josephson junction
368 ..Critical current control
369 ..External control (e.g., piezoelectric, light, etc.)
370 ...Magnetic field control
371 ...Temperature control
372 ..Inductive effect
373 ..Layout
374 .Accelerating switching
375 ..Saturation prevention
376 ..Turn-on
377 ..Turn-off
378 .Compensation for variations in external physical values (e.g., temperature, etc.)
379 .Signal transmission integrity or spurious noise override
380 ..Preventing quick rise gating current (i.e., di/dt)
381 ..Preventing quick rise gating voltage (i.e., dv/dt)
382 ..Parasitic prevention or compensation (e.g., parasitic capacitance, etc.)
383 ..Ensuring fully conducting state
384 ..Switch noise signal
385 ...Contact bounce from mechanical switch
386 ....With clock input
387 ..Control signal derived from or responsive to input signal
388 ...Additional external control signal
389 ..Insulated gate FET (e.g., MOSFET, etc.)
390 ...With capacitive bootstrapping
391 ...Complementary metal-oxide semiconductor (CMOS)
392 .Delay controlled switch (e.g., fixed, single time of delay control, etc.)
393 ..With variable or multiple adjustable time of delay control (e.g., variable charge-discharge, on-delay/off-delay control, etc.)
394 ...With field-effect device
395 ...Propagation through plural delay devices or paths
396 ...With plural switching elements (e.g., sequential, etc.)
397 ...Including negative resistance device in delay circuit (e.g., unijunction transistor, etc.)
398 ..For predetermined time period
399 ..With field-effect device
400 ..Propagation through plural delay devices or paths
401 ..With plural switching elements (e.g., sequential, etc.)
402 ..Including negative resistance device in delay circuit (e.g., unijunction transistor, etc.)
403 .Parallel controlled paths
404 ..Field-effect transistor
405 ..Bipolar transistor
406 ..Electron tube
407 .Converging with plural inputs and single output
408 ..Field-effect transistor
409 ...Push-pull circuit
410 ....With complementary transistor devices
411 ..Bipolar transistor
412 ...Push-pull circuit
413 ....With complementary transistor devices
414 ..Electron tube
415 .Diverging with single input and plural outputs
416 ..Field-effect transistor
417 ..Bipolar transistor
418 ..Electron tube

419 .Utilizing three or more electrode solid-state device
420 ..Breakdown characteristic (e.g., punch-through, tunneling, etc.)
421 ...Zener
422 ...Avalanche
423 ..Bridge circuit
424 ...Field-effect transistor
425 ..Bilateral transistor
426 ...Plural
427 ..Field-effect transistor
428 ...With silicon controlled rectifier (SCR)
429 ...Four or more electrode solid-state device
430 ...JFET (i.e., junction field-effect transistor)
431 ....MESFET (i.e., metal semiconductor field-effect transistor)
432 ...With bipolar transistor
433 ....Bi-CMOS
434 ...Insulated gate FET (e.g., MOSFET, etc.)
435 ....GaAs
436 ....Plural devices in series
437 ....Complementary metal-oxide semiconductor (CMOS)
438 ..Four or more layer device (e.g., thyristor, etc.)
439 ...Bipolar transistor circuit configuring SCR device
440 ...GTO (i.e., gate turnoff)
441 ....Plural or combined with other four or more layer device
442 ....Separate ON and OFF control circuit
443 ....Transformer or inductor in control circuit
444 ...Complex wave supply
445 ....Silicon controlled rectifier (SCR)
446 .....Triac
447 ...AC supply
448 ....Device in bridge
449 ....PUT (i.e., programmable unijunction transistor)
450 ....Four electrodes
451 ....Zero point switching
452 .....With triac
453 ....Silicon controlled rectifier (SCR)
454 .....With unijunction transistor
455 .....Triac
456 ......Plural
457 ......Combined with diac
458 ......Combined with diverse four or more layer device
459 ......With bipolar transistor
460 .....Plural SCR`s
461 ......Inverse parallel connection
462 ....With bipolar transistor
463 .....With bipolar transistor
464 ....Having plural four or more layer devices
465 ...DC supply
466 ....PUT (i.e., programmable unijunction transistor)
467 ....Four electrodes
468 ....SCR and unijunction transistor
469 ....Triac
470 ....Plural devices
471 .....Series anode-cathode connection
472 ......Plural paths
473 .....Parallel connection
474 .....With bipolar transistor
475 ....SCR and bipolar transistor
476 ...Triac
477 ..Unijunction transistor (UJT)
478 ..Bipolar transistor
479 ...Special four or more electrode device (e.g., multiple bases, three electrode bipolar with FET gate, etc.)
480 ....Multiple emitter transistor
481 ....Multiple collector transistor
482 ...Plural
483 ....Darlington connection
484 ....Opposite conductively (i.e., complementary)
485 .....Control circuit in cascade
486 .....Control circuit in totem pole
487 ....Control circuit in cascade
488 ....Control circuit in totem pole
489 ....Control circuit with common emitter
490 .....With current mirror
491 .....With emitter follower
492 ....Control circuit with common collector
493 .Utilizing two electrode solid-state device
494 ..Bridge circuit
495 ...Combined with diverse device in at least one arm

496 ...Plural
497 ...Active element in diagonal arm
498 ..Negative resistance
499 ..."N"-shape curve on I-V plot (e.g., tunnel diode type, etc.)
500 ..."S"-shape curve on I-V plot (e.g., pnpn diode type, etc.)
501 ....Hyperconductive diode
502 ..Breakdown characteristic (e.g., zener diode, etc.)
503 ..PIN diode
504 ..PN junction diode
505 ...Inverse parallel connection
506 .Three or more electrode electron tube
507 .Two electrode electron tube
508 ..Bridge circuit
509 **EXTERNAL EFFECT**
510 .Magnetic
511 ..Utilizing Hall effect
512 .Temperature
513 ..With compensation for temperature fluctuations
514 .Light
515 ..Elements forming an array
516 .Utilizing conversion of mechanical variations into electrical variations (e.g., vibration sensitive, etc.)
517 .Responsive to proximity or touch
518 **WITH PARTICULAR CONTROL**
519 .Plurality of load devices
520 .Plural active components included in a controlling circuit
521 ..Connected in inverse parallel
522 ..Gaseous tube
523 .Gaseous tube
524 **SPECIFIC IDENTIFIABLE DEVICE, CIRCUIT, OR SYSTEM**
525 .Fusible link or intentional destruct circuit
526 .Redundant
527 .Superconductive (e.g., cryogenic, etc.) device
528 ..Josephson junction
529 ..Impact ionization
530 .With specific source of supply or bias voltage
531 ..Fluctuating or AC source with rectifier or filter
532 ...With particular filter circuit
533 ...With battery connected across rectifier
534 ..Having particular substrate biasing
535 ...Having stabilized bias or power supply level
536 ....Charge pump details
537 ....With field-effect transistor
538 ..Stabilized (e.g., compensated, regulated, maintained, etc.)
539 ...Using bandgap
540 ...With voltage source regulating
541 ....With field-effect transistor
542 ...With diverse type transistor devices
543 ...Using field-effect transistor
544 ..Power conservation or pulse type
545 ..Including signal protection or bias preservation
546 ...With field-effect transistor
547 ..With selectively or alternately DC or AC input
548 ..With oscillator or interrupter
549 ..With hum or interaction prevention
550 ..With particular filament heating circuit
551 .Unwanted signal suppression
552 ..Active filter
553 ...Adjustable
554 ....Switched capacitor filter
555 ....Selective type signal filtering (e.g., from low pass to high pass, etc.)
556 ...Notch or bandreject
557 ...Bandpass
558 ...Lowpass
559 ...Highpass
560 .Nonlinear amplifying circuit
561 ..With operational amplifier
562 ...With field-effect transistor
563 ..With differential amplifier
564 .Integrated structure
565 ..With specific layout or layout interconnections
566 ...Having field-effect transistor device
567 .Thin film
568 .Negative resistance type
569 ..Unijunction transistor
570 ..Having "N"-shape curve on I-V plot (e.g., tunnel diode type, etc.)
571 ..Having "S"-shape curve on I-V plot (e.g., pnpn diode type, etc.)

572 ..Secondary emissive type
573 ...Electron multiplier type
574 .Utilizing a three or more electrode solid-state device
575 ..Darlington connection
576 ..Complementary transistors
577 ..Multiple emitter transistor
578 ..Multiple collector transistor
579 ..Minority carrier storage
580 ..Transistor breakdown device (e.g., avalanche, zener, punch through, etc.)
581 ..Field-effect transistor
582 ..Four or more layer device (e.g., silicon-controlled rectifier, etc.)
583 .Utilizing two electrode solid-state device
584 ..Breakdown diode (e.g., zener diode, avalanche diode, etc.)
585 ..Minority carrier storage diode (e.g., enhancement diode, etc.)
586 ..Capacitive diode
587 ..Bridge circuit
588 .With bridge circuit
589 .With bootstrap circuit
590 .With particular feedback
591 .Tube performs plural functions
592 .With oscillation prevention
593 .With distributed parameter circuit
594 .With particular coupling or decoupling
595 .With particular connecting
596 .Including oscillatory or shock-excited circuit
597 .With particular grid control
598 .With particular tube structure
599 ..Vacuum tube type
600 ...Beam tube structure
601 ..Gas tube
602 ...With particular electrode arrangement
603 **MISCELLANEOUS**

FOREIGN ART COLLECTIONS

FOR 000 **CLASS-RELATED FOREIGN DOCUMENTS**