## CLASS 377 ELECTRICAL PULSE COUNTERS, PULSE DIVIDERS, OR SHIFT REGIS-TERS: CIRCUITS AND SYSTEMS 377 - 1

| 1    |   | 27       | SYSTEMS                           |
|------|---|----------|-----------------------------------|
|      | APPLICATIONS                                    | 28       | .Identifying or correcting        |
| 2    | .Control  | 20       | improper counter operation        |
| 3    | .Counting on an object, areas                   |          | (e.g., error checking,            |
|      | having alternating physical                     |          | monitoring; preventing or         |
|      | properties (e.g., counting                      |          | correcting improper counter       |
|      | lines on grid, teeth on gear,                   |          | operation)                        |
|      | windings on coil)                               | 29       | Testing or calibrating the        |
| 4    | .Betting on the outcome of an event; Totalizers | 29       | counter                           |
| 5    | .Game or sport                                  | 30       | Preventing an inaccurate count    |
| 6    | .Counting animate or inanimate                  |          | as a result of an external        |
| 0    | entities  |          | condition                         |
| 7    | Coins   | 31       | Automatic preset                  |
| 8    |   | 32       | Power failure                     |
| 0    | Flat articles (e.g., sheet,<br>bill, ticket)    | 33       | .Using particular code or         |
| 9    | Vehicles  |          | particular counting sequence      |
|      |   | 34       | Minimum change code (e.g., Gray   |
| 10   | Field of view contains plural                   |          | code)                             |
|      | entities or entities scanned                    | 35       | Excess three code                 |
|      | plural times (e.g.,                             | 36       | Biquinary code                    |
| 1 1  | microscopic particles)                          | 37       | .Sequential readout of plural     |
| 11   | Including particle size                         | 37       | counters or sequential            |
| 10   | determination variations                        |          | sampling of inputs to a           |
| 12   | Counting by detecting                           |          | counter                           |
|      | electrical impedance                            | 38       | .Plug in counter                  |
| 10   | variations                                      | 39       | .Comparing counts                 |
| 13   | .Registering counts for different               | 40       | .Nonsignificant zero elimination  |
|      | categories (e.g., accounting)                   | 40<br>41 |                                   |
| 14   | Where the different categories                  |          | .Complementing a count            |
|      | represent monetary amounts                      | 42       | .Converting input or output       |
|      | (e.g., wages, charges)                          |          | signal from or to an analogue     |
| 15   | .Counting based on number of                    | 10       | signal                            |
|      | times machine or apparatus                      | 43       | .Having phase shift               |
|      | operates  | 44       | .Counter controlled counter       |
| 16   | .Determining machine or apparatus               | 45       | .Including reversible counter     |
|      | operating time or monitoring                    | 46       | .Including ring counter           |
|      | machine, apparatus or                           | 47       | .Pulse multiplication or division |
|      | operation                                       | 48       | Multiplication or division by a   |
| 17   | .Position determining                           |          | fraction                          |
| 18   | Of flat flexible strip (e.g.,                   | 49       | .Counter includes circuit for     |
|      | tape)   |          | performing an arithmetic          |
| 19   | .Measuring or testing                           |          | function                          |
| 20   | Time combined with measurement                  | 50       | .Compensation for excess or       |
|      | of another parameter                            |          | shortage of pulses                |
| 21   | Fluid flow                                      | 51       | .Including structure for          |
| 22   | Weight  |          | detecting or indicating           |
| 23   | Acceleration                                    |          | overflow condition                |
| 24   | Dimension                                       | 52       | .With programmable counter (i.e., |
| 24.1 | Distance and Powered Vehicle                    |          | with variable base)               |
|      | (e.g., odometer)                                | 53       | .With photoelectric sensor        |
| 24.2 | Distance and Human Activity                     | 54       | .Using shift register             |
| -    | (e.g., pedometer, nonpowered                    | 55       | .Particular input circuit         |
|      | golf carts)                                     | 56       | .Particular output circuit        |
| 25   | Temperature                                     |          | -                                 |
| 26   | .Including memory                               |          |                                   |
|      | adding momory                                   |          |                                   |

# 377 - 2CLASS 377 ELECTRICAL PULSE COUNTERS, PULSE DIVIDERS, OR SHIFT REGISTERS: CIRCUITS AND SYSTEMS

| 57         | CHARGE TRANSFER DEVICE (E.G.,<br>ANALOGUE SHIFT REGISTER, CCD,    | 96    | Using auxiliary pulse generator triggered by incoming pulses |
|------------|---|-------|--|
|            | BUCKET BRIGADE DEVICE)  | 97    | .Hysteresis storage (e.g.,                                   |
| 58         | .Compensating for or preventing signal charge deterioration       |       | counters using saturable<br>magnetic core elements)          |
| 59         | .With feedback  | 98    | .DEVICES HAVING MORE THAN TWO                                |
| 60         | .Particular input or output means                                 |       | STABLE STATES  |
| 61         | .Direction and/or path flow                                       | 99    | .Beam type tube (e.g., magnetron,                            |
|            | control (e.g., by clocking or                                     | 100   | cathode-ray tube)  |
| <b>C</b> D | biasing, by charge splitting)                                     | TUU   | .Multi-cathode gas discharge                                 |
| 62         | In charge-coupled device  | 101   | tubes  |
| 63         | .Charge-coupled device  | 101   | USING BISTABLE MAGNETIC CORES OR                             |
| 64         | SHIFT REGISTER  | 4.0.0 | FERROELECTRIC CAPACITORS                                     |
| 65         | .Using electromechanical relays                                   | 102   | USING BISTABLE ELECTRO-OPTICAL                               |
| 66         | .Asynchronous   |       | DEVICES  |
| 67         | .Multirank (i.e., rows of storage<br>units form a shift register) | 103   | COUNTING OR DIVIDING CHAINS USING<br>GAS-FILLED TUBES        |
| 68         | .Compensating for or preventing                                   | 104   | PHASED CLOCKING  |
| 00         | signal deterioration  | 105   | .Field-effect transistor                                     |
| 69         | .Shift direction control  | 106   | PARTICULAR PARALLEL GATING OR                                |
| 70         | .Particular input circuit   | TOO   | CLOCK SIGNAL   |
| 70         | Pulse shaping   | 107   | STARTING, STOPPING, PRESETTING OR                            |
| 71<br>72   |   | 107   | RESETTING THE COUNTER  |
|            | With feedback   | 108   | .Counter chains with a radix or                              |
| 73         | Including logic circuit   | 100   |  |
| 74         | Field-effect transistor   |       | base other than the number two                               |
| 75         | .Particular output circuit  | 100   | raised to an integral power                                  |
| 76         | Sequential output (e.g., tapped                                   | 109   | Decade   |
|            | delay line)   | 110   | Programmable (e.g., with                                     |
| 77         | .Particular transfer means  |       | mechanical or  |
| 78         | Phase clocking or synchronizing                                   |       | electromechanical switch means                               |
| 79         | Field-effect transistor   |       | for selecting the count                                      |
| 80         | Parallel clocking   | 111   | PARTICULAR INPUT CIRCUITS FOR                                |
| 81         | Logic circuit   |       | COUNTER  |
| 82         | ELECTROMECHANICAL COUNTER   | 112   | INDICATING MEANS   |
| 83         | .Counting or dividing chains                                      | 113   | .Using glow discharge lamps                                  |
|            | using relays  | 114   | PARTICULAR OUTPUT CIRCUITS FOR                               |
| 84         | .Programmable (i.e., with   |       | COUNTER  |
| 01         | variable base)  | 115   | PARTICULAR TRANSFER MEANS (E.G.,                             |
| 85         | .Reversible   |       | MASTER-SLAVE)  |
| 86         |   | 116   | .Including logic circuit                                     |
|            | .Particular input means   | 117   | Field-effect device (e.g.,                                   |
| 87         | .Particular output means  |       | JFET, IGFET, MNOS)   |
| 88         | .With resetting   | 118   | PULSE COUNTING OR DIVIDING CHAINS                            |
| 89         | .Rotary magnet  | 119   | .Using bistable regenerative                                 |
| 90         | .Stepping switch  | 117   | trigger circuits   |
| 91         | .Clutch or escapement   | 120   | Using only semiconductors                                    |
| 92         | .Pawl and rachet  | 120   |  |
| 93         | WITH SUPERCONDUCTIVE ELEMENT                                      |       | having at least three  |
| 94         | COUNTING OR DIVIDING IN   | 101   | electrodes   |
|            | INCREMENTAL STEPS (I.E.,  | 121   | Field-effect device (e.g.,                                   |
|            | STAIRCASE COUNTER)  | 100   | JFET, IGFET, MNOS)   |
| 95         | .Charge storage (e.g., capacitor                                  | 122   | Ring counter   |
|            | without polarization  | 123   | Reversible counter   |
|            | hysteresis)   | 124   | Ring counter   |
|            | -   | 125   | Reversible counter   |

### CLASS 377 ELECTRICAL PULSE COUNTERS, PULSE DIVIDERS, OR SHIFT REGIS-TERS: CIRCUITS AND SYSTEMS 377 - 3

- 126 .Ring or reversible counter
- 127 .Using bistable semiconductors having at least three electrodes or analogous complementary transistor circuits (e.g., avalanche transistor, SCR's)
- 129 **PULSES CONTINUOUSLY CIRCULATED IN** A CLOSED LOOP
- 130 **MISCELLANEOUS**

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## 377 - 4 CLASS 377 ELECTRICAL PULSE COUNTERS, PULSE DIVIDERS, OR SHIFT REGIS-TERS: CIRCUITS AND SYSTEMS