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<u>Patent No.</u>	<u>Date</u>	<u>Patentee</u>	<u>Title</u>	<u>Class</u>
3,469,175	9-23-69	T.E.Kirk	Semi Conductor Volt. Regulator	W-12
3,483,458	12-9-69	T.E.Kirk	Rotor Position Sensor and Control Circuit for an Electric Motor Power Supply	D-2
3,491,285	1-20-70	R.J.Nowakowski	Potential Regulator Circuit	W-8
3,488,560	1-6-70	R.L.Konopa	Transient Potential Protection Circuit	W-12
3,510,752	5-5-70	L.J.Raver G.H.Stenklyft	Transistor Volt.Regulating System for Generators Having Main & Reverse Field Windings	
3,510,839	5-5-70	H.V.Elliot W.E.Graddy D.W.Hyden	Combined Direction Signal and Hazard Warning Mechanism and Switch Structure	
3,512,075	5-12-70	L.J.Raver R.L.Konopa	Transistor Voltage Regulating System for Generators Having Main and Reverse Field Windings	
3,512,076	5-12-70	R.L.Larson G.H.Stenklyft	Transistor Voltage Regulating System for Generators Having Main and Reverse Field Windings	
3,516,863	6-23-70	N.L.Willmann Jerry L.Helms	Battery Plate Structure	
3,516,864	6-23-70	N.L.Willmann E.G.Wheadon	Battery Grid and Terminal Therefor	
3,520,288	7-14-70	C.L.Dusenberry J.A.Boyer	Dual Spark Capacitor Discharge Ignition System	
3,521,148	7-21-70	T.E.Kirk D.J.Hartman	Semiconductor Volt.Regulator for a Generator with Main and Bucking Field Windings	

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3,523,041	8-4-70	Jack L. Limbert H. G. Proctor David T. Poe	Battery Paste Expander Material
3,524,952	8-18-70	Willis H. Anderson Daniel W. Hyden Frank Frier	Combined Pivotal and Linear Switch Actuator
3,538,362	11-3-70	Robert A. Cheetham A.D. Heiny Billy R. Jones R. W. Ward	Diode-Rectified, Alternating- Current Generator Having Built- In Transistor Voltage Regulator
3,542,006	11-24-70	C. L. Dusenberry (DR) Richard E. Massoll John R. Snead Richard J. Hanson Paul W. Wood, Jack E. Riley (DR) James V. Clore	Internal Combustion Engine Radio Frequency Radiation Suppressing Ignition System
3,544,881	12-1-70	L. J. Raver R. J. Nowakowski	Transistor Voltage & Current Regulating System for an Alternating Current Generator
3,551,210	12-29-70	M. E. Bahler R. W. Kellams G. L. Larkin R. F. Selby R. G. Senseney W. T. VanFleet	Process for the High-Speed Manufacture of PVC Battery Separators
3,552,368	1-5-71	James R. Hunter G. O. Huntzinger Donald O. Ruff	Current Responsive Converter Circuit
3,553,020	1-5-71	R. L. Corbin R. A. Jones	Spill-Proof Battery
3,554,178	1-12-71	James A. Boyer Donald O. Ruff	Dual Spark Capacitor Discharge Ignition System

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3,556,854	1-19-71	E. G. Wheadon N. L. Willmann	LEAD Acid Storage Battery Having a Grid with Divergent Fingers
3,560,832	2-2-71	Thomas E. Kirk	Battery Charging System for Vehicles Having Propulsion and Accessory Batteries
3,564,366	2-16-71	William D. Worrell	Motor Control System for a Direct Current Traction Motor
3,564,369	2-16-71	G.O.Huntzinger D.O. Ruff	Motor Control System for a Direct <i>Current</i> Traction Motor
3,573,480	4-6-71	D.L.Cummins	Electric Cranking Motor Automatic Disconnect and Lockout Circuit
3,573,481	4-6-71	D.L. Cummins	Electric Cranking Motor Automatic Disconnect and Lockout Circuit
3,577,001	5-4-71	D.L. Cummins	Electric Cranking Motor Automatic Disconnect and Lockout Circuit
3,581,150	5-25-71	T.E. Kirk G.H. Stenklyft	Overvoltage Protection Circuit for a Generator Regulator System
3,585,479	6-15-71	T.A.Zickel J.R.Templin	Motor Speed Control Dependent On Speed Feedback and a Vacuum
3,588,591	6-28-71	John R. Harris Gerald E. Rigsby	Automobile Headlight System Including Time Delay Circuit of Cigar Lighter
3,600,530	8-17-71	C.L.Dusenberry D.G.Guetersloh	Ignition Distributor Having a Radio Frequency Interference Shield
3,602,656	8-31-71	Willard E.Graddy Daniel W. Hyden	Electrical Switch
3,603,825	9-7-71	John J. Sheridan Gene D. Bricker Donald F. Wigner	Winding Spool and Lead Support Insulator for Rotors of Alternating Current Generators.

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3,606,674	9-21-71	David E. Givan	Method of Manufacturing Magnetic Cores for Dynamoelectric Machines and Laminations Therefor
3,606,869	9-21-71	Gerald O. Huntzinger Donald O. Ruff	Apparatus for Electrically Synchronizing Fuel Injection with Fuel Ignition in an Internal Combustion Engine
3,607,441	9-21-71	Renard E. Mix	Process for Making Battery Terminals
3,609,513	9-28-71	Louis J. Raver Robt. J. Nowakowski	Generator Voltage Regulator with Initial Excitation Means
3,609,514	9-28-71	Robt. J. Nowakowski Robt. W. Campbell Ronald A. Martin	Generator Voltage Regulator
3,610,004	10-5-71	Philip C. Neese	Parking Lock for Transmission
3,612,982	10-12-71	Billy R. Jones Richard L. Konopa Robt. N. Green	Voltage Protection Circuit for Transistor Voltage Regulator
3,615,788	10-26-71	Jack L. Limbert Harry G. Proctor David T. Poe	Battery Paste Expander Material
3,621,543	11-23-71	Norman L. Willmann Ellis G. Wheadon	Method of Fabricating Battery Plate Grids
3,624,441	11-30-71	Max E. Todd John V. Hellmann	Field Frame Assembly for Direct Current Dynamoelectric Machines
3,624,480	11-30-71	Robt. W. Campbell Donald L. Cummins	Dual Battery Charger Having Dual Output
3,624,482	11-30-71	Donald O. Ruff William J. Sensing	Field Disconnect and Indicator Circuit for a Vehicle Charging System
3,628,041	12-14-71	Donald L. Cummins Morris Esche Robt. W. Campbell	Electric Cranking Motor Automatic Disconnect and Lockout Circuit

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3,631,389	12-28-71	Harold V. Elliott	Brake System Condition Warning System and Switch Assembly Therefor
3,638,630	2-1-72	Lewis R. Hetzler Robert E. Campbell Charles R. Carlson Gerald O. Huntzinger	Internal Combustion Engine Ign. Distributor Cap and Coil Assembly
3,645,241	2-29-72	Gerald O. Huntzinger	Bistable Throttle Control System
3,645,246	2-29-72	Robert E. Campbell Gerald O. Huntzinger	Internal Combustion Engine Ignition System Having Increased Ignition Spark Energy
3,646,286	2-29-72	Sanford L. Maddy Jackson R. Templin	Shearing Contact Switch
3,646,301	2-29-72	Gerald O. Huntzinger Lewis R. Hetzler Jackson R. Templin	Ignition Distributor Breaker Contact Set
3,646,422	2-29-72	Max E. Hankley	Circuit for Recharging the Battery of a Portable Device From the Charging System of a Car
3,647,556	3-7-72	John M. Cox	Storage Battery Cover
3,652,336	3-28-72	Ellis G. Wheadon Charles P. McCartney	Wound-Wire Storage Battery Grid and Process
3,652,337	3-28-72	Renard E. Mix	Casting Plate Straps to Battery Plates
3,656,135	4-11-72	Donald O. Ruff	Fault Indicator Circuit for Vehicular Battery Charging Systems
3,659,188	4-25-72	Arthur W. Alexander Glen R. Renner	Generator Voltage Regulator with Detachable Resistance Unit in The Voltage Reference Circuit
3,663,918	5-16-72	Clark Lincoln (not D-R)	Windshield Wiper and Washer Control System
3,666,564	5-30-72	Ralph L. Corbin Richard A. Jones Robert G. Byers	Battery Cover with Integral Venting System

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3,666,978	5-30-72	Glen R. Renner	Side Ported Inlet Cover for Generators
3,667,025	5-30-72	Robert W. Campbell Donald L. Cummins	Dual Voltage System
3,671,843	6-20-72	Gerald O. Huntzinger Leonard J. Sheldrake	Dual Voltage Charging System
3,679,789	7-25-72	Ellis G. Wheadon Norman L. Willmann	Process of Making a Battery Plate Grid
3,679,847	7-25-72	Ronnalee House	Three Position Pivotal Switch With Improved Spring Biased Joystick Actuator and Contact
3,686,961	8-29-72	Robert W. Campbell	Starting Mechanism
3,689,813	9-5-72	Elbert M. Sawyer Frank J. Bourbeau	Cycloconverter Silicon Controlled Rectifier Gate Signal Delay Circuit
3,690,737	9-12-72	Phillip C. Neese Richard D. Watson Thomas A. Zickel	Anti-Lock Brake System
3,690,950	9-12-72	Ellis G. Wheadon Normal L. Willmann	Battery Plate Grid
3,691,323	9-12-72	Willis H. Anderson Willard E. Graddy	Combination Lighting Switch Mechanism
3,691,442	9-12-72	Leonard J. Sheldrake	Control Circuit for Automatically Shutting Off the Windshield Wipers Subsequent to Washer Operation
3,697,814	10-10-72	Willard A. Christman Billy R. Jones	Bridge Rectifier Heat Sink Assembly
3,700,165	10-24-72	Larry A. Beehler Jackson R. Templin	Thumbwheel Vacuum Thermostat
3,701,085	10-24-72	Willard E. Graddy Willis H. Anderson	Electrical Connector Assembly

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3,702,265	11-7-72	Richard N. Snyder Ellis G. Wheadon	Lead-Acid Storage Battery Paste
3,702,429	11-7-72	Elbert M. Sawyer Joseph M. Brown Curtis D. Munden Kenneth E. Giles	Cycloconverter Silicon Controlled Rectifier Gate-Cathode Circuit Signal and Power System
3,703,613	11-21-72	William E. Abel	Rotary Switch with Improved Pivotaly and Reciprocable Mounted Thumbwheel Actuator
3,704,382	11-28-72	Gerald O. Huntzinger	Bistable Throttle Control System
3,706,089	12-12-72	Gerald O. Huntzinger Norris J. Bassett	Lamp Failure Indicator
3,714,450	1-30-73	Elbert M. Sawyer Fred H. Kelly	Starting Mechanism
3,717,994	2-27-73	Jackson R. Templin	Gas Turbine System with Regenerator Bypass Only During Starting
3,718,835	2-27-73	George R. Stoughton	Dual Dimmer Switch Circuit
3,719,096	3-6-73	Richard L. Sprague David S. Dennis	Electronic Shift Control for a Transmission
3,724,972	4-3-73	Donald G. Guetersloh	Fuel Injection Pump
3,726,003	4-10-73	John V. Hellmann Carl L. Richwine	Method of Making a Disk Type Commutator
3,728,158	4-17-73	David T. Poe Murray G. Sandberg	Low Silhouette Bi-polar Battery
3,732,039	5-8-73	Frank S. Carothers, Jr.	Fuel Control Valve
3,735,311	5-22-73	Clark E. Sloan, Jr.	Vibrator Type Electrical Circuit Interrupter

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3,738,339	6-12-73	Gerald O. Huntzinger Leonard J. Shel Drake Byron W. Johnson	Electronic Ignition Spark Advance System
3,739,954	6-19-73	Charles D. Blagg	Articulated Filling and Dispensing Ladle Mechanism
3,742,785	7-3-73	Charles E. Buck William F. Thornburgh (Chev.)	Ignition Timing and Throttle Position Control
3,748,611	7-24-73	Thomas C. Heath	Relay
3,757,611	9-11-73	Charles E. Buck	Three Position Solenoid Idle Stop
3,758,340	9-11-73	Morris E. Adams	Lead Acid Storage Battery Plates and Process for Pasting Them.
3,764,386	10-9-73	Renard E. Mix	Casting Plate Straps to Battery Plates and a Lead-Acid Storage Battery Utilizing Same
3,770,511	11-6-73	David A. Winterbottom Ellis G. Wheadon Philip E. Higdon	Storage Battery Having Integral Cables Extending the Battery's Terminals
3,772,921	11-20-73	John W. Carlson Morris Esche Steven E. Ferguson	Engine Starter
3,774,200	11-20-73	Thomas C. Heath	Buzzer Including Coil with Wound Connections
3,775,640	11-27-73	James H. English	Motor Vehicle Exterior Light System Control Circuit
3,775,730	11-27-73	Garth A. Rowls Elbert L. Johnson	Corrosion-Proof Battery Terminal & Cable Connection Therefor
3,780,713	12-25-73	Clarence L. Julian	Vacuum-Operated Spark Advance Device

<u>Pat No.</u>	<u>Date</u>	<u>Inventor</u>	<u>Title</u>
3,789,909	2-5-74	Oscar H. Smith	Dip Casting Method Using Transpirationally Cooled Mold Having Relieved Impervious Outer Layer
3,789,910	2-5-74	Robert C. Matter Leon F. Paul	Dip Casting Method Using Transpirationally Cooled Mold Cavity.
3,795,543	3-5-74	David T. Poe	Bi-Polar Lead-Acid Storage Battery.
3,799,135	3-26-74	Ronnalee House	Ignition Distributor
3,808,054	4-30-74	Ellis G. Wheadon Charles P. McCartney, Jr.	Wound-Wire Storage Battery Grid
3,813,294	5-28-74	Clarence H. Dyer Conrad L. Gaunt Edward D. Jarvis	Method for Insulating a Performed Electrical Coil
3,824,977	7-23-74	Robert E. Campbell Lewis R. Hetzler Gerald O. Huntzinger	Internal Combustion Engine Ignition System
3,835,363	9-10-74	Thomas E. Kirk	Motor Vehicle Power Supply System
3,853,626	12-10-74	Elon Daniels, Jr. Richard H. Kline	Method and Apparatus for Making Expanded Metal Lead-Acid Battery Grids
3,863,127	1-28-75	Louis J. Raver	Dual Battery Charging Generator.
3,865,079	2-11-75	Roger W. Kellams Clarence H. Dyer	Electrostatic Fluid Bed Powder Coating System
3,867,200	2-18-75	Elon Daniels, Jr.	Method and Apparatus for Making Oxidized Expanded Lead Battery Grids
3,869,316	3-4-75	Robert C. Matter	Alloy for Through-the-Partition Intercell Connectors Formed by an Extrusion-Fusion Techniq
3,881,952	5-6-75	Ellis G. Wheadon Norman L. Willmann	Lead-Acid Battery Plates With Expanded Lead Sheet Grids
3,887,780	6-3-75	Dwight O. Crim	Ignition Distributor Rotor
3,888,225	6-10-75	James A. Boyer Charles L. Dusenberry	Internal Combustion Engine Ignition Controller
3,890,160	6-17-75	Elon Daniels, Jr.	Method and Apparatus for Preventing Curling of Lead Strips During Expansion

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<u>Patent No.</u>	<u>Date</u>	<u>Inventor</u>	<u>Title</u>
3,891,459	6-24-75	Charles P. McCartney, Jr. Norman L. Willmann	Negative Lead-Acid Battery Plates with Expanded Lead Sheet Grids
3,894,202	7-29-75	Robert E. Campbell Richard D. Watson	Ignition Distributor for Rotary Internal Combustion Engines
3,918,322	11-11-75	Frank Frier Willard E. Graddy Daniel W. Hyden	Snap-In Lever Assembly
3,919,994	11-18-75	Curtis D. Munden	Ignition System for Rotary Internal Combustion Engines
3,923,028	12-2-75	Robert W. Campbell Robert E. Young	Ignition Distributor Centrifugal Advance Mechanism
3,924,586	12-9-75	Clarence L. Julian Robert E. Young	Vacuum Control Assemb ly
3,924,970	12-9-75	Ralph H. Johnston Leroy E. Lakey	Electrically Controlled Fuel Pump
3,938,005	2-10-76	Donald L. Cummins	Electrical Generating System Overvoltage Protection Circuit
3,941,107	3-2-76	Lynn A. Rockwell	Ign. Distributor Rotor
3,945,097	3-23-76	Elon Daniels, Jr. Richard H. Kline	Apparatus for Making Expanded Metal Lead-Acid Battery Grids
3,947,290	3-30-76	Robert C. Matter Larry D. Spangler	Process and Apparatus for Making Intercell Connectors by an Extrusion-fusion Technique
3,947,936	4-6-76	Ellis G. Wheadon	Coining Expanded Metal Positive Lead-Acid Battery Grids
3,951,508	4-20-76	Richard E. Farrer Glendon Dale Starks	Internal Combustion Engine Ignition Distributor Cap
3,962,621	6-8-76	Louis J. Raver	Dual Battery Charging Generator System

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3,972,315	8-3-76	Curtis D. Munden Robert E. Campbell	Dual Action Internal Combustion Engine Ign.System
3,982,169	9-21-76	Donald L. Cummins	Excitation System for a Self- Excited Alternator
3,982,553	9-28-76	Donald U. Johnston Robert L. Larson	Vacuum Reducer Valve Assembly
3,988,618	10-26-76	Curtis D. Munden Robert E. Campbell	Electrical Angle Delay Circuit
3,998,196.	12-21-76	Ronnalee House	Ignition Distributor
4,000,453	12-28-76	Leonard J. Shelldrake Donald O. Ruff Charles W. King	Storage Battery Charging System With Alternator Output Fault Indicating Circuit
4,002,085	1-11-77	Daniel U. Johnston	Accelerator Control Assembly
4,009,699	3-1-77	Lewis R. Hetzler Gerald O. Huntzinger William P. Winstead III Thomas A. Zickel	Digital Ignition Spark Timing Control With Read Only Memory
4,015,098	3-29-77	Robert C. Matter Larry D. Spangler	Apparatus for Making Inter-cell Connectors by An Extrusion-Fusion Technique
4,019,120	4-19-77	Gerald T. Fattic	Fault Indicator for Motor Vehicle Battery Charging Systems
4,024,458	5-17-77	Jackson R. Templin	Electrical Signal Generating System
4,034,726	7-12-77	John H. Falge	Temperature Compensated Internal Combustion Engine Ignition Spark Vacuum Advance System
4,041,369	8-9-77	Charles W. King Donald O. Ruff Leonard J. Shelldrake	Storage Battery Charging System Fault Indicating Circuit

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4,041,603	8-16-77	Robert H. Thune	Rib Trimming of Universally Molded Battery Container
4,045,062	8-30-77	Mark D. Disosway, III Leonard J. Sheldrake	Electric Cranking Motor Automatic Disconnect and Lockout Circuit
4,046,062	9-6-77	Robert C. Matter	Method of Forming Through the Partition Cell Connectors Formed by an Extrusion-Fusion Technique
4,050,771	9-27-77	Richard D. Watson Thomas R. Sowash	Threaded Terminal Assembly for Dynamoelectric Machine
<u>1978</u>			
4,071,788	1-31-78	Ronald A. Martin Charles R. Ashton Richard D. Watson	Dynamoelectric Machine Field Assembly
4,076,787	2-28-78	William W. Ervin (sp.?) Lee A. Fleck	Universal Battery Case Having Embossed Intercell Partitions and Process For Making Same
4,076,989	2-28-78	Richard D. Watson	Housing & Stator Assembly for a Dynamoelectric Machine
4,082,926	4-4-78	Stephen W. Marks Robert E. Marsh	Ignition Distributor Rotor with Corona Generating Points of Electrically Conductive Paint
4,096,724	6-27-78	Larry J. Eshelman James R. Bish	Method of Coiling a Flat Strip
4,096,735	6-27-78	Gerald O. Huntzinger Charles E. Buck Robert E. Campbell	Engine Detonation Sensor With Double Shielded Case
4,098,966	7-4-78	Richard C. Brown	Welded Battery Elements and Process
4,100,828	7-18-78	Robert H. Thune	Apparatus For Rib Trimming Of Universally Molded Battery Container

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<u>Patent No.</u>	<u>Date</u>	<u>Inventor</u>	<u>Title</u>
4,122,890	10-31-78	Larry P. Atkins James R. Bish	Nozzle for the Continuous Casting of Lead
4,123,729	10-31-78	Earl H. Buetemeister	Displacement Transducer
4,129,107	12-12-78	James A. Boyer	Magnetic Pickup type Ignition Distributor

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4,135,390	2-13-79	Jackson R. Templin	Engine Torque Transducer
4,150,714	4-24-79	Larry P. Atkins James R. Bish	Lead Casting Seal
4,153,850	5-8-79	James A. Boyer	Circuit for Square Wave Output
4,154,907	5-15-79	Jerry V. Crow	Side Terminal Battery Structure
4,161,665	7-17-79	Charles E. Buck James M. Johnson Paul A. Joseph	Engine Detonation Sensor
4,164,633	8-14-79	John J. Sheridan Willard E. Graddy Willis H. Anderson	Push-Pull Rotary System
4,177,551	12-11-79	George S. Johnson Robey C. Reff	Arc Welded Battery Inter-cell Connector
4,179,647	12-18-79	Donald L. Cummins Daniel W. Stahura	Dual Output Battery Charging System

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4,200,143	4-29-80	Robert C. Matter James R. Bish	Continuous Horizontal Caster
4,208,554	6-17-80	Richard L. Sprague	Ignition Distributor Rotor having a Silicone Varnish Coated Output Segment for Suppressing Noise and a Method of Manufacture therefor.