

# Recent IBM Patents

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## Federal Republic of Germany

|               |                                 |                                                         |
|---------------|---------------------------------|---------------------------------------------------------|
| 2,360,974     | W. Hoffmeister and<br>M. Briska | Method of Purifying Ammonium Fluoride Solutions         |
| 2,460,914     | A. Frosch and H. Korth          | Projection of Images                                    |
| 3,064,445,208 | D. Schuett                      | Error Detection and Correction System for a Logic Array |
| 3,160,750,008 | A. Blum                         | Shift Register for Checking and Testing Purposes        |

## Switzerland

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| 14,758 | N. G. Stalberg | Device for Optical Character Reading |
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## United Kingdom

|           |               |                                                     |
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| 13,326    | J. R. Taylor  | Sampled Data Servo Positioning System               |
| 2,038,361 | D. J. Barclay | Low Concentration Trivalent Chromium Electroplating |

## United States

|           |                                                               |                                                                                                      |
|-----------|---------------------------------------------------------------|------------------------------------------------------------------------------------------------------|
| 4,344,222 | D. L. Bergeron and P. H. Smith                                | Bipolar Compatible Electrically Alterable Read-Only Memory                                           |
| 4,344,691 | D. E. Grant and J. R. Walker                                  | Zonal Concentrator for Accurate Erasure of Photoconductor Charge                                     |
| 4,344,815 | V. Cazarra, A. Schwab, and<br>P. Zunino                       | Method for Characterizing the Oxygen Contents of Czochralski Grown Silicon<br>Rods                   |
| 4,345,239 | B. J. Elliott                                                 | Apparatus for Determining Pen Acceleration                                                           |
| 4,345,314 | R. C. Melamud, J. D. Nihart, and<br>J. M. White               | Dynamic Threshold Device                                                                             |
| 4,391,034 | K. P. Stuby                                                   | Thermally Compensated Shadow Mask                                                                    |
| 4,392,097 | J. B. Landrock, M. Perske, and<br>H. S. Tandjung              | Circuit Arrangement for the Continual Operation Monitoring and Error<br>Diagnosis of a Stepper Motor |
| 4,392,105 | M. H. McLeod                                                  | Test Circuit for Delay Measurements on a LSI Chip                                                    |
| 4,392,148 | W. H. Chang, T. R. Gheewala, and<br>E. P. Harris              | Moat-Guarded Josephson Devices                                                                       |
| 4,392,149 | C. T. Horng, R. O. Schwenker, and<br>P. J. Tsang              | Bipolar Transistor                                                                                   |
| 4,392,209 | D. E. DeBar                                                   | Randomly Accessible Display                                                                          |
| 4,392,617 | P. Bakos, R. E. Darrow, J. Funari, and<br>D. L. Redpath       | Spray Head Apparatus                                                                                 |
| 4,392,739 | L. C. Brown, J. L. Campbell,<br>U. J. Fitts, and W. L. Gudgel | Electromechanically Operated Fuser Roll Closure                                                      |
| 4,392,757 | C. M. Denny and C. W. Wampler II                              | Backlash and Runout Compensator for Lead Screw Drives                                                |
| 4,392,758 | D. J. Bowles, D. E. Clancy,<br>C. F. Johnson, and D. M. Neal  | Underscore Erase                                                                                     |
| 4,393,096 | J. J. Gajda                                                   | Aluminum-Copper Alloy Evaporated Films with Low Via Resistance                                       |
| 4,393,127 | J. Greschner, G. Kraus, and<br>G. E. Schmid                   | Structure with a Silicon Body Having Through Openings                                                |
| 4,393,269 | A. G. Konheim, S. M. Matyas, and<br>C. H. Meyer               | Method and Apparatus Incorporating a One-Way Sequence for Transaction<br>and Identity Verification   |
| 4,393,445 | C. A. Milligan, E. R. Videki II, and<br>W. F. Yates           | Information-Signal Recording Apparatus Employing Record Volume Oriented<br>Identification Signals    |
| 4,393,459 | J. D. Huntley and R. L. Parsons                               | Status Reporting with Ancillary Data                                                                 |
| 4,393,463 | J. A. Aiken, Jr.                                              | Insertion of Character Set Change Codes in an Altered Text Stream                                    |
| 4,393,628 | J. C. Ottman and J. C. S. Shen                                | Fixed Abrasive Polishing Method and Apparatus                                                        |
| 4,393,769 | A. J. Landon, W. B. Pennebaker, and<br>H. C. Wang             | Electrostatic Clutch-Operated Printing Mechanism                                                     |
| 4,393,967 | J. J. Cuomo, A. J. Landon, and<br>H. C. Wang                  | Electrostatic Clutch                                                                                 |

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| 4,394,406 | J. R. Gardiner, S. R. Makarewicz, M. Revitz, and J. F. Shepard        | Double Polysilicon Contact Structure and Process                                                                                                        |
| 4,394,437 | A. S. Bergendahl, M. C. Hakey, and J. P. Wilson                       | Process for Increasing Resolution of Photolithographic Images                                                                                           |
| 4,394,588 | G. J. Gaudenzi                                                        | Controllable DI/DT Push/Pull Driver                                                                                                                     |
| 4,394,621 | J. E. Rohen                                                           | Electronic Velocity Measurement Especially for Self-Clocking Write Head                                                                                 |
| 4,394,673 | R. D. Thompson, B. Tsaur, and K.-N. Tu                                | Rare Earth Silicide Schottky Barriers                                                                                                                   |
| 4,394,693 | R. E. Shirley                                                         | System and Method for Generating Enlarged or Reduced Images                                                                                             |
| 4,394,727 | R. L. Hoffman, M. E. Houdek, L. W. Loen, and F. G. Soltis             | Multi-Processor Task Dispatching Apparatus                                                                                                              |
| 4,394,731 | F. O. Flusche, R. N. Gustafson, and B. L. McGilvray                   | Cache Storage Line Shareability Control for a Multiprocessor System                                                                                     |
| 4,394,734 | K. S. Norgren and R. E. Vogelsberg                                    | Programmable Peripheral Processing Controller                                                                                                           |
| 4,394,746 | R. G. Hirko, K. Ju, and I. L. Sanders                                 | Swap Gate for Ion-Implanted Contiguous-Disk Bubble Devices                                                                                              |
| 4,394,747 | M. J. Grandguillot, P. B. Mollier, and J.-P. J. Nuez                  | High Density Integrated Read-Only Memory                                                                                                                |
| 4,394,752 | G. Boudon, B. Denis, V. de Grivel, and P. Mollier                     | Decoding and Selection Circuit for a Monolithic Memory                                                                                                  |
| 4,395,035 | R. E. Hunt                                                            | Air Shingler                                                                                                                                            |
| 4,395,165 | I. J. DeRobertis, J. K. Hassan, R. L. Judge, and J. A. Paivanas       | Chip Shuttle Track                                                                                                                                      |
| 4,395,646 | M. Cases, W. R. Kraft, V. S. Moore, W. L. Stahl, Jr., and N. G. Thoma | Logic Performing Cell for Use in Array Structures                                                                                                       |
| 4,395,681 | R. Hornung and G. Lebesnerais                                         | System for Compensating the Offset Voltage of a Differential Amplifier                                                                                  |
| 4,395,715 | D. J. Bahr and G. A. Goldrain                                         | Method and Arrangement for Controlling the Print Current in Metal Paper Printers                                                                        |
| 4,395,812 | D. L. Bergeron and G. B. Stephens                                     | Forming an Integrated Circuit                                                                                                                           |
| 4,396,274 | E. P. Kollar and R. E. Norwood                                        | Electrophotographic Copier Configuration                                                                                                                |
| 4,396,308 | S. L. Applegate, J. J. Molloy, and D. A. Walker                       | Ribbon Guiding for Thermal Lift-Off Correction                                                                                                          |
| 4,396,458 | V. Platter, L. B. Rothman, P. M. Schaible, and G. C. Schwartz         | Method for Forming Planar Metal/Insulator Structures                                                                                                    |
| 4,396,575 | J. A. Aboaf and E. Klokholm                                           | Zero Magnetostriction Fe-Co-Cr Magnetic Recording Media                                                                                                 |
| 4,396,883 | J. F. Holloway and S. R. Riggio, Jr.                                  | Bandgap Reference Voltage Generator                                                                                                                     |
| 4,396,931 | W. P. Dumke and A. B. Fowler                                          | Tunnel Emitter Upper Valley Transistor                                                                                                                  |
| 4,396,933 | I. E. Magdo and S. Magdo                                              | Dielectrically Isolated Semiconductor Devices                                                                                                           |
| 4,396,960 | A. Matla and V. Zimmermann                                            | Servo Track Following Control for Magnetic Heads, and Method for Compensating Uniform Disturbance Variables                                             |
| 4,396,966 | R. A. Scranton, D. A. Thompson, and T. K. Worthington                 | Low Mass Actuator System for Magnetic Recording Disks With Half Strength End Poles                                                                      |
| 4,396,967 | A. J. Argumedo, W. W. Chow, L. W. Dunn, and B. R. Lakey               | Multielement Magnetic Head Assembly                                                                                                                     |
| 4,396,984 | E. R. Videki II                                                       | Peripheral Systems Employing Multiplating, Path and Access Grouping                                                                                     |
| 4,396,988 | W. J. Fitzgerald, Jr.                                                 | Method and Apparatus for Automatically Determining the X-Y Intersection of Two Curves in a Raster Type Display System Including a Buffer Refresh Memory |
| 4,396,993 | D. J. Bahr and K. H. Burckardt                                        | Control Circuit for a Printing Head of a Metal Paper Printer With Electrodes Arranged on a Slope                                                        |
| 4,396,999 | S. D. Malaviya                                                        | Tunneling Transistor Memory Cell                                                                                                                        |
| 4,397,002 | R. Brosch, H. H. Heimeier, W. Klein, and F. Wernicke                  | Circuit Arrangement for Capacitive Read Signal Amplification in an Integrated Semiconductor Store With Storage Cells in MTL Technology                  |
| 4,397,018 | J. W. Fennel, Jr. and H.-B. Yin                                       | Baton Passing Method and Apparatus for Maintaining Synchronization in a TDMA Satellite Communication System                                             |
| 4,397,019 | J. A. Alvarez and P. H. Higgins                                       | TDMA Intertransponder Communication                                                                                                                     |
| 4,397,039 | G. K. McAuliffe                                                       | Instantaneous Phase Tracking in Single Sideband Systems                                                                                                 |
| 4,397,075 | J. J. Fatula, Jr. and P. L. Garbarino                                 | FET Memory Cell Structure and Process                                                                                                                   |
| 4,397,079 | A. Nagarajan and H. G. Sarkary                                        | Process for Improving the Yield of Integrated Devices Including Schottky Barrier Diodes                                                                 |
| 4,397,085 | W. Goff, Jr. and W. M. Jenkins                                        | Method of Manufacture of a Multi-Wire Nonimpact Printhead                                                                                               |
| 4,397,184 | N. R. Bankert, S. R. Heyer, and L. Viele, Jr.                         | Method and Apparatus for Testing Xerographic Developer Mix                                                                                              |
| 4,397,234 | H. C. Lee, D. H. Rickenbach, G. A. Wolfert, and J. L. Zable           | Electromagnetic Print Hammer Coil Assembly                                                                                                              |
| 4,397,543 | H. F. Kolbe and F. A. Schwarzbach                                     | Mask for Imaging a Pattern of a Photoresist Layer, Method of Making Said Mask, and Use Thereof in a Photolithographic Process                           |
| 4,397,572 | J. G. Barnes, R. E. Chukram, P. J. Hurley, and H. L. Lineman          | Justification of Overstruck Text                                                                                                                        |

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| 4,397,575 | C. A. Aldrich                                                                                        | Ribbon Lift and Feed Mechanism for a Typewriter                                                                            |
| 4,397,576 | J. E. Drejza, D. F. Manning, and J. T. Wilson III                                                    | Print Head Actuator                                                                                                        |
| 4,397,722 | I. Haller                                                                                            | Polymers from Aromatic Silanes and Process for Their Preparation                                                           |
| 4,397,730 | P. S. Bindra                                                                                         | Electrolytic Cells with Alkaline Electrolytes Containing Trifluoromethylene Sulfonic Acid                                  |
| 4,397,751 | H. L. Dickstein and W. H. Dickstein                                                                  | Magnetic Disk Coatings                                                                                                     |
| 4,397,937 | N. J. Clecak, D. R. McKean, R. D. Miller, T. C. Tompkins, R. J. Twieg, and C. G. Willson             | Positive Resist Compositions                                                                                               |
| 4,398,001 | Y. Y. Cheng, B. D. Grant, L. A. Pederson, and C. G. Wilson                                           | Terpolymer Resist Compositions                                                                                             |
| 4,398,106 | E. E. Davidson, G. A. Katopis, and B. J. Rubin                                                       | On-Chip Delta-I Noise Clamping Circuit                                                                                     |
| 4,398,167 | H. G. Dickie, A. R. Hearn, and J. S. Heath                                                           | Limited Angle Electric Rotary Actuator                                                                                     |
| 4,398,247 | D. Bazlen, D. W. Bock, K. J. Getzlaff, J. Hajdu, and H. Painke                                       | Control Device for Directing Execution of Forced Operations in a Data Processing System                                    |
| 4,398,341 | H. J. Geipel, Jr. and L. A. Nesbit                                                                   | Method of Fabricating a Highly Conductive Structure                                                                        |
| 4,398,709 | D. M. Janssen, R. Magno, and W. S. Seaward                                                           | Wave Generation Amplification Apparatus for Cut Sheet Paper Feeding                                                        |
| 4,398,993 | D. W. Hume, Jr. and J. Rasile                                                                        | Neutralizing Chloride Ions in Via Holes in Multilayer Printed Circuit Boards                                               |
| 4,399,205 | A. S. Bergendahl                                                                                     | Method and Apparatus for Determining Photomask Alignment                                                                   |
| 4,399,504 | R. J. Obermarck, J. P. Strickland, and V. L. Watts                                                   | Method and Means for the Sharing of Data Resources in a Multiprocessing, Multiprogramming Environment                      |
| 4,399,506 | C. W. Evans, F. O. Flusche, B. U. Messina, E. L. Richardson, J. R. Robinson, and J. A. Wetzel        | Store-in-Cache Processor Means for Clearing Main Storage                                                                   |
| 4,399,507 | M. R. Cosgrove, A. H. Frey, Jr., K. A. Moore, A. Peled, F. N. Ris, and W. W. Sproul III              | Instruction Address Stack in the Data Memory of an Instruction-Pipelined Processor                                         |
| 4,399,522 | K. N. Kotecha                                                                                        | Non-Volatile Static RAM Cell with Enhanced Conduction Insulators                                                           |
| 4,400,865 | G. R. Goth, I. E. Magdo, and S. D. Malaviya                                                          | Self-Aligned Metal Process for Integrated Circuit Metallization                                                            |
| 4,401,302 | E. C. Hardy and M. J. Miklos                                                                         | Sheet Separation Apparatus and Method                                                                                      |
| 4,401,393 | D. E. Alexander and C. M. McCray                                                                     | Printer Ribbon Cassette and Feed Mechanism                                                                                 |
| 4,401,900 | S. M. Faris                                                                                          | Ultra High Resolution Josephson Sampling Technique                                                                         |
| 4,401,931 | R. W. Kulterman, J. M. Rakes, and R. H. Sweat, Jr.                                                   | Apparatus Actuated by a Pair of Stepper Motors with Shared Drive                                                           |
| 4,401,933 | J. C. Davy, B. P. Fenton, and J. G. Ramage                                                           | Motor Control System for a Single Phase Induction Motor                                                                    |
| 4,401,985 | J. M. McVey, H. G. Romero, Jr., and J. D. Wagoner                                                    | Full Page Display Apparatus for Text Processing System                                                                     |
| 4,401,991 | V. C. Martin                                                                                         | Variable Resolution, Single Array, Interlace Ink Jet Printer                                                               |
| 4,402,058 | J. A. Aiken, Jr. and K. O. Shipp, Jr.                                                                | Keyboard Mismatch Correction                                                                                               |
| 4,402,060 | J. S. Best and I. L. Sanders                                                                         | Gap Tolerant Merge Element for Contiguous-Disk Bubble Devices                                                              |
| 4,402,090 | F. R. Gfeller and H. R. Mueller                                                                      | Communication System in Which Data are Transferred Between Terminal Stations and Satellite Stations by Infrared Signals    |
| 4,402,573 | C. R. Jones                                                                                          | Materials for Electrochromic Display Devices                                                                               |
| 4,402,620 | D. H. Kekas, C. M. McCray, and W. A. Grubbs                                                          | Compact Shuttle Printer Mechanism                                                                                          |
| 4,403,227 | J. R. Bertschy and W. E. Broom, Jr.                                                                  | Method and Apparatus For Minimizing Evaporation in an Ink Recirculation System                                             |
| 4,403,229 | J. C. Barteck                                                                                        | Maintenance System to Prime and to Exclude Air From Ink Jet Heads                                                          |
| 4,403,269 | L. B. Carroll                                                                                        | Non-Dissipative Snubber Circuit Apparatus                                                                                  |
| 4,403,271 | C. D. Flanigan and E. R. Wiener                                                                      | Apparatus for Mounting and Packaging Data Processing Devices                                                               |
| 4,403,286 | S. M. Fry, H. O. Hempy, and B. E. Kittinger                                                          | Balancing Data-Processing Work Loads                                                                                       |
| 4,403,288 | J. H. Christian, A. H. Nolta, D. G. Reed, R. E. Rieck, G. E. Tayler, T. N. Truan, and J. S. Williams | Methods and Apparatus for Resetting Peripheral Devices Addressable as a Plurality of Logical Devices                       |
| 4,403,305 | G. E. Keefe and I. L. Sanders                                                                        | Non-Data Reversing Bubble Transfer Switch for Contiguous Disks                                                             |
| 4,404,732 | T. L. Andrade                                                                                        | Self-Aligned Extended Epitaxy MESFET Fabrication Process                                                                   |
| 4,405,201 | F. P. Cefarelli and R. T. Evans                                                                      | Fiber Optic Connector                                                                                                      |
| 4,405,238 | W. D. Grobman, D. A. Nelson, Jr., and J. M. Warlaumont                                               | Alignment Method and Apparatus for X-Ray or Optical Lithography                                                            |
| 4,405,515 | E. M. Engler, V. V. Patel, and R. R. Schumaker                                                       | Heterofulvalene Geminal Dithiolate Compounds and their Selenium and Tellurium Analogs and a Method of Fabricating the Same |

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| 4,405,684 | B. F. Blumentritt and J. C. S. Shen                         | Rigid Magnetic Coating Composition With Thermosetting Binder for Hard File |
| 4,405,898 | D. C. Flemming                                              | Pseudo Synchronous Clocking                                                |
| 4,405,961 | W. W. Chow, D. S. Fields, Jr., P. Y. Hu,<br>and J. L. Lopez | Thermoelectric Cooling of Magnetic Head Assemblies                         |