

TERMS. \$10.00 PER ANNUM IN ADVANCE. Single Copies 25 CENTS. Subscriptions payable in advance. Any paper procuring five subscribers shall receive one copy gratis. All letters to the Editors to be post-paid.

Office, Pennsylvania Avenue, between Third and Fourth and a-half streets.

MECHANICAL ARTS & SCIENCES

D. APPLETON & CO., NEW YORK. HAY IN COURSE OF PUBLICATION, IN PARTS, PRICE TWENTY-FIVE CENTS EACH.

A Dictionary of Machines, Mechanicals, Engine-Work, and Engineering.

Designed for Practical Working-Men, and those intended for the Engineering Profession.

Edited by OLIVER BYRNE, formerly Professor of Mathematics, College of Civil Engineers, London; Author and Inventor of "The Calculus of Form," "The New and Improved System of Logarithms," "The Elements of Euclid's Colors," etc., etc., etc.

THIS work is of large size, containing nearly two thousand pages, upwards of fifteen hundred plates, and six thousand woodcuts. It will present working-drawings and descriptions of the most important machines in the United States. Independent of the results of American ingenuity, it will contain complete practical treatises on Mechanics, Machinery, Engine-work, and Engineering; with all that is useful in more than one thousand dollars' worth of folio volumes, magazines, and other books among which may be mentioned the following:

- 1. Bibliotheca des Arts Industriels. (Masson, Paris.)
- 2. Civil Engineer and Architect's Journal. (London.)
- 3. Engineer and Machinist's Assistant. (Blackie, Glasgow.)
- 4. Publication Industrielle. (Armengaud Aime, Paris.)
- 5. Jameson's Mechanics of Fluids.
- 6. Treatise on Mechanics. (Poisson.)
- 7. Allgemeine Bauzeitung mit Abbildungen. (Forster, Wien.)
- 8. Organ für die Fortschritte des Eisenbahnwesens in technischer Beziehung. (Von Walzegg, Wieden.)
- 9. Sherwin's Logarithms.
- 10. Byrne's Logarithms.
- 11. The Mechanical and Mathematical Works of Oliver Byrne.
- 12. Silliman's Journal.
- 13. Allgemeine Maschinen-Encyclopaedia. (Hulse, Leipzig.)
- 14. Cotton Manufacture of Great Britain and America contrasted.
- 15. Holzapfel's Turning and Mechanical Manipulation.
- 16. The Steam Engine. (J. Bourne.)
- 17. Eisenbahn-Zeitung. (Stuttgart.)
- 18. Tregold on the Steam Engine.
- 19. Fitch's Mathematical and Optical Instruments.
- 20. Dictionnaire des Arts et Manufactures. (Labboulaye, Paris.)
- 21. Szwedzin's Civil Engineering.
- 22. Brown's Institute of Steam Navigation.
- 23. Elements and Progress of Steam Navigation. (Woodcroft.)
- 24. Essai sur l'Industrie des Matieres Textiles. (Michel Ancel, Paris.)
- 25. Maecell's Tables.
- 26. Griegier's Mechanical Pocket Dictionary.
- 27. Completion of Millwright's and Engineer's Pocket Companion.
- 28. Lady's and Gentlemen's Diary.
- 29. Marine Steam Engine. (Brown.)
- 30. Euclid's Mechanical and Engineering.
- 31. The Mathematician. (London.)
- 32. Barlow on Strength of Materials.
- 33. Hann's Mechanics.
- 34. Mechanical Principles of Engineering and Architecture. (London.)
- 35. The Transactions of the Institute of Civil Engineers. (London.)
- 36. The Artisan.
- 37. Quarterly Papers on Engineering. (Publishers, Weale, London.)
- 38. Imperial Dictionary. (Glasgow.)
- 39. Student's Guide to the Locomotive Engine.
- 40. Railway Engine and Carriage Wheels. (Barrow, London.)
- 41. How to Use the Machine Instruments of Apparatus. (Le Blanc, Paris.)
- 42. Buchanan on Mill-Work.
- 43. Practical Examples of Modern Tools and Machines. (London.)
- 44. Repertoire de l'Industrie Francaise et Etrangere. (L. Mathias, Paris.)
- 45. Treatise on the Manufacture of Gas. (Acrom, London.)
- 46. Setting out Curves on Railways. (Law, London.)
- 47. Hodge on the Steam-Engine.
- 48. Scientific American.
- 49. Railroad Journal. (New York.)
- 50. American Artisan.
- 51. Mechanical Magazine.
- 52. Nicholson's (Peter) Dictionary of Architecture.
- 53. Dictionnaire de Marine a Voiles et a Vapeur. (De Bonafant, Paris.)
- 54. Conway and Menai Tubular Bridges. (Fairbairn.)
- 55. Brown's Railway Practice.
- 56. Barlow's Mathematical Dictionary.
- 57. Gregory's Navigation and Practical Men.
- 58. Engineers' and Mechanics' Encyclopedia. (Luke Herbert.)
- 59. Patent Journal; London.
- 60. Brown's Glossary of Engineering.
- 61. Cradock's Dictionary of Civil Engineering. (Crasay.)
- 62. Cradock's Lectures on the Steam-Engine.
- 63. Assistant Engineer's Railway Guide. (Has kull.)
- 64. Mechanical Principia. (Leonard.)

The great object of this publication is, to place before practical men and students such an amount of theoretical and scientific knowledge, in a condensed form, as shall enable them to work to the best advantage, and to avoid those mistakes which they might otherwise commit. The amount of useful information thus brought together, is almost unexampled in such works. Indeed there is hardly a subject within its range which is not treated with such clearness and precision, that even a man of the most ordinary capacity cannot fail of understanding, and thus learning from it much which is important for him to know.

From the annexed list of the principal authors and subject comprised in this work it is self-evident, that all citizens engaged in the practical and useful arts, etc., may derive essential advantages from the possession and study of this publication. The following may be especially designated:

- Millwrights.
- Moulder and Boiler Makers.
- Artificers in Brass, Copper, and Tin.
- Cutlers, and Workers of Steel in general.
- Carpenters.
- Bricklayers.
- Workers in Ivory, Bone, and Horn.
- Civil Engineers, Railway Constructors, and Contractors for Earth-Work, and Masonry of every description.
- Architects and Bridge Builders.
- Builders, Master Masons, and Bricklayers.
- Ship Builders, Masters of Vessels, Ship Carpenters, and others connected with Building and Docking Ships.
- Block and Pump Makers.
- Ribbon Weavers, and Rope Makers.
- Manufacturers of Lines and Cotton Fabrics.
- Manufacturers of Spinning Machines, Roving Machines, Card Breakers and Finishers, Drawing Frames, Weavers, Finers, etc., connected with Cotton, Flax, and Wool Machinery.
- Calenders, Bleachers, and Calico Printers.
- Cloth Folders, and Measurers, and persons interested in Sewing Machinery.
- Anchor and Chain Cable Manufacturers.
- Cutting and Turning Tool Makers.
- Pin and Needle Makers.
- Nail and Rivet Makers.
- Bolt and Screw-Bolt Makers.
- Nail Cutters.
- Coopers.
- Leather Dressers and Curriers.
- Manufacturers of Great Guns and Small Arms.
- Candle Makers.
- Biscuit and Cracker Makers.
- Shoe Makers.
- Ribbon Weavers.
- Stucco Outlets and Marble Masons.
- Ayers, Cloth Washers, and Scourers.
- Coopers.

VOL. II.

WASHINGTON CITY, TUESDAY, MAY 4, 1852.

BRITISH COMMERCIAL LIFE INSURANCE COMPANY.

Established in 1820, and Empowered by Act of Parliament. For the Insurance of Lives, and the Endowment of Children, &c.

LONDON, NEW-YORK AND WASHINGTON OFFICES. CAPITAL 3,000,000.

M. THOMPSON, Office on Pennsylvania Avenue, one door west of Jackson Hall.

A RESPECTABLE man, who has his force of hands unemployed, would like to occupy himself in a suitable way during that time. He writes a good hand, and would undertake copying, translating from the French or German, keeping set or two of books, or a regular book-keeper is not employed, &c. Please inquire at the office of this paper. G-1

REBEB'S NEW YORK HATS!!!

REBEB'S, No. 1, Brown's Hotel, has just received a further and full supply of Rebeb's Hats. Also, a complete assortment of his own make, of every quality and style. Gentlemen wishing Hats of fancy shapes can have their orders filled at

STEVEN'S great Hat, Cap, and Gent's Outfitting Establishment, No. 1 Brown Hotel. (Intel. Repub. Union.) Nov. 30—6d.

FOR CALIFORNIA, VIA CHAGRES.

WITHOUT DETENTION AT PANAMA. The United States Mail Steamship Company will dispatch the splendid double-engine steamship GEORGIA, on Wednesday, Dec. 11, at 3 o'clock p. m., from the pier, foot of Warren street, North river, New York, with the Government mails and passengers for San Francisco and intermediate ports.

The connection at Panama will be carefully kept up, and passengers for San Francisco will be taken on board that they will not be delayed at Panama beyond the usual stay in port.

The books are now open, and passage can be secured at the following rates:

FROM NEW YORK TO CHAGRES. State-room berth - - - - - \$100 Stowage berth, found bed & separate table 50

FROM PANAMA TO SAN FRANCISCO. State-room berth - - - - - \$300 Stowage berth, found bed & separate table 150

FROM NEW YORK. State-room berth - - - - - \$250 Stowage berth, found bed & separate table 125

To Charleston or Savannah \$25 50 75 85 95 105 115 125 135 145 155 165 175 185 195 205 215 225 235 245 255 265 275 285 295 305 315 325 335 345 355 365 375 385 395 405 415 425 435 445 455 465 475 485 495 505 515 525 535 545 555 565 575 585 595 605 615 625 635 645 655 665 675 685 695 705 715 725 735 745 755 765 775 785 795 805 815 825 835 845 855 865 875 885 895 905 915 925 935 945 955 965 975 985 995 1005 1015 1025 1035 1045 1055 1065 1075 1085 1095 1105 1115 1125 1135 1145 1155 1165 1175 1185 1195 1205 1215 1225 1235 1245 1255 1265 1275 1285 1295 1305 1315 1325 1335 1345 1355 1365 1375 1385 1395 1405 1415 1425 1435 1445 1455 1465 1475 1485 1495 1505 1515 1525 1535 1545 1555 1565 1575 1585 1595 1605 1615 1625 1635 1645 1655 1665 1675 1685 1695 1705 1715 1725 1735 1745 1755 1765 1775 1785 1795 1805 1815 1825 1835 1845 1855 1865 1875 1885 1895 1905 1915 1925 1935 1945 1955 1965 1975 1985 1995 2005 2015 2025 2035 2045 2055 2065 2075 2085 2095 2105 2115 2125 2135 2145 2155 2165 2175 2185 2195 2205 2215 2225 2235 2245 2255 2265 2275 2285 2295 2305 2315 2325 2335 2345 2355 2365 2375 2385 2395 2405 2415 2425 2435 2445 2455 2465 2475 2485 2495 2505 2515 2525 2535 2545 2555 2565 2575 2585 2595 2605 2615 2625 2635 2645 2655 2665 2675 2685 2695 2705 2715 2725 2735 2745 2755 2765 2775 2785 2795 2805 2815 2825 2835 2845 2855 2865 2875 2885 2895 2905 2915 2925 2935 2945 2955 2965 2975 2985 2995 3005 3015 3025 3035 3045 3055 3065 3075 3085 3095 3105 3115 3125 3135 3145 3155 3165 3175 3185 3195 3205 3215 3225 3235 3245 3255 3265 3275 3285 3295 3305 3315 3325 3335 3345 3355 3365 3375 3385 3395 3405 3415 3425 3435 3445 3455 3465 3475 3485 3495 3505 3515 3525 3535 3545 3555 3565 3575 3585 3595 3605 3615 3625 3635 3645 3655 3665 3675 3685 3695 3705 3715 3725 3735 3745 3755 3765 3775 3785 3795 3805 3815 3825 3835 3845 3855 3865 3875 3885 3895 3905 3915 3925 3935 3945 3955 3965 3975 3985 3995 4005 4015 4025 4035 4045 4055 4065 4075 4085 4095 4105 4115 4125 4135 4145 4155 4165 4175 4185 4195 4205 4215 4225 4235 4245 4255 4265 4275 4285 4295 4305 4315 4325 4335 4345 4355 4365 4375 4385 4395 4405 4415 4425 4435 4445 4455 4465 4475 4485 4495 4505 4515 4525 4535 4545 4555 4565 4575 4585 4595 4605 4615 4625 4635 4645 4655 4665 4675 4685 4695 4705 4715 4725 4735 4745 4755 4765 4775 4785 4795 4805 4815 4825 4835 4845 4855 4865 4875 4885 4895 4905 4915 4925 4935 4945 4955 4965 4975 4985 4995 5005 5015 5025 5035 5045 5055 5065 5075 5085 5095 5105 5115 5125 5135 5145 5155 5165 5175 5185 5195 5205 5215 5225 5235 5245 5255 5265 5275 5285 5295 5305 5315 5325 5335 5345 5355 5365 5375 5385 5395 5405 5415 5425 5435 5445 5455 5465 5475 5485 5495 5505 5515 5525 5535 5545 5555 5565 5575 5585 5595 5605 5615 5625 5635 5645 5655 5665 5675 5685 5695 5705 5715 5725 5735 5745 5755 5765 5775 5785 5795 5805 5815 5825 5835 5845 5855 5865 5875 5885 5895 5905 5915 5925 5935 5945 5955 5965 5975 5985 5995 6005 6015 6025 6035 6045 6055 6065 6075 6085 6095 6105 6115 6125 6135 6145 6155 6165 6175 6185 6195 6205 6215 6225 6235 6245 6255 6265 6275 6285 6295 6305 6315 6325 6335 6345 6355 6365 6375 6385 6395 6405 6415 6425 6435 6445 6455 6465 6475 6485 6495 6505 6515 6525 6535 6545 6555 6565 6575 6585 6595 6605 6615 6625 6635 6645 6655 6665 6675 6685 6695 6705 6715 6725 6735 6745 6755 6765 6775 6785 6795 6805 6815 6825 6835 6845 6855 6865 6875 6885 6895 6905 6915 6925 6935 6945 6955 6965 6975 6985 6995 7005 7015 7025 7035 7045 7055 7065 7075 7085 7095 7105 7115 7125 7135 7145 7155 7165 7175 7185 7195 7205 7215 7225 7235 7245 7255 7265 7275 7285 7295 7305 7315 7325 7335 7345 7355 7365 7375 7385 7395 7405 7415 7425 7435 7445 7455 7465 7475 7485 7495 7505 7515 7525 7535 7545 7555 7565 7575 7585 7595 7605 7615 7625 7635 7645 7655 7665 7675 7685 7695 7705 7715 7725 7735 7745 7755 7765 7775 7785 7795 7805 7815 7825 7835 7845 7855 7865 7875 7885 7895 7905 7915 7925 7935 7945 7955 7965 7975 7985 7995 8005 8015 8025 8035 8045 8055 8065 8075 8085 8095 8105 8115 8125 8135 8145 8155 8165 8175 8185 8195 8205 8215 8225 8235 8245 8255 8265 8275 8285 8295 8305 8315 8325 8335 8345 8355 8365 8375 8385 8395 8405 8415 8425 8435 8445 8455 8465 8475 8485 8495 8505 8515 8525 8535 8545 8555 8565 8575 8585 8595 8605 8615 8625 8635 8645 8655 8665 8675 8685 8695 8705 8715 8725 8735 8745 8755 8765 8775 8785 8795 8805 8815 8825 8835 8845 8855 8865 8875 8885 8895 8905 8915 8925 8935 8945 8955 8965 8975 8985 8995 9005 9015 9025 9035 9045 9055 9065 9075 9085 9095 9105 9115 9125 9135 9145 9155 9165 9175 9185 9195 9205 9215 9225 9235 9245 9255 9265 9275 9285 9295 9305 9315 9325 9335 9345 9355 9365 9375 9385 9395 9405 9415 9425 9435 9445 9455 9465 9475 9485 9495 9505 9515 9525 9535 9545 9555 9565 9575 9585 9595 9605 9615 9625 9635 9645 9655 9665 9675 9685 9695 9705 9715 9725 9735 9745 9755 9765 9775 9785 9795 9805 9815 9825 9835 9845 9855 9865 9875 9885 9895 9905 9915 9925 9935 9945 9955 9965 9975 9985 9995 10005 10015 10025 10035 10045 10055 10065 10075 10085 10095 10105 10115 10125 10135 10145 10155 10165 10175 10185 10195 10205 10215 10225 10235 10245 10255 10265 10275 10285 10295 10305 10315 10325 10335 10345 10355 10365 10375 10385 10395 10405 10415 10425 10435 10445 10455 10465 10475 10485 10495 10505 10515 10525 10535 10545 10555 10565 10575 10585 10595 10605 10615 10625 10635 10645 10655 10665 10675 10685 10695 10705 10715 10725 10735 10745 10755 10765 10775 10785 10795 10805 10815 10825 10835 10845 10855 10865 10875 10885 10895 10905 10915 10925 10935 10945 10955 10965 10975 10985 10995 11005 11015 11025 11035 11045 11055 11065 11075 11085 11095 11105 11115 11125 11135 11145 11155 11165 11175 11185 11195 11205 11215 11225 11235 11245 11255 11265 11275 11285 11295 11305 11315 11325 11335 11345 11355 11365 11375 11385 11395 11405 11415 11425 11435 11445 11455 11465 11475 11485 11495 11505 11515 11525 11535 11545 11555 11565 11575 11585 11595 11605 11615 11625 11635 11645 11655 11665 11675 11685 11695 11705 11715 11725 11735 11745 11755 11765 11775 11785 11795 11805 11815 11825 11835 11845 11855 11865 11875 11885 11895 11905 11915 11925 11935 11945 11955 11965 11975 11985 11995 12005 12015 12025 12035 12045 12055 12065 12075 12085 12095 12105 12115 12125 12135 12145 12155 12165 12175 12185 12195 12205 12215 12225 12235 12245 12255 12265 12275 12285 12295 12305 12315 12325 12335 12345 12355 12365 12375 12385 12395 12405 12415 12425 12435 12445 12455 12465 12475 12485 12495 12505 12515 12525 12535 12545 12555 12565 12575 12585 12595 12605 12615 12625 12635 12645 12655 12665 12675 12685 12695 12705 12715 12725 12735 12745 12755 12765 12775 12785 12795 12805 12815 12825 12835 12845 12855 12865 12875 12885 12895 12905 12915 12925 12935 12945 12955 12965 12975 12985 12995 13005 13015 13025 13035 13045 13055 13065 13075 13085 13095 13105 13115 13125 13135 13145 13155 13165 13175 13185 13195 13205 13215 13225 13235 13245 13255 13265 13275 13285 13295 13305 13315 13325 13335 13345 13355 13365 13375 13385 13395 13405 13415 13425 13435 13445 13455 13465 13475 13485 13495 13505 13515 13525 13535 13545 13555 13565 13575 13585 13595 13605 13615 13625 13635 13645 13655 13665 13675 13685 13695 13705 13715 13725 13735 13745 13755 13765 13775 13785 13795 13805 13815 13825 13835 13845 13855 13865 13875 13885 13895 13905 13915 13925 13935 13945 13955 13965 13975 13985 13995 14005 14015 14025 14035 14045 14055 14065 14075 14085 14095 14105 14115 14125 14135 14145 14155 14165 14175 14185 14195 14205 14215 14225 14233 14245 14255 14265 14275 14285 14295 14305 14315 14325 14335 14345 14355 14365 14375 14385 14395 14405 14415 14425 14433 14445 14455 14465 14475 14485 14495 14505 14515 14525 14533 14545 14555 14565 14577 14585 14595 14605 14615 14625 14633 14645 14655 14665 14677 14685 14695 14705 14715 14722 14733 14745 14755 14765 14777 14785 14795 14805 14815 14822 14833 14845 14855 14866 14877 14885 14895 14905 14915 14922 14933 14945 14955 14966 14977 14985 14995 15005 15015 15022 15033 15045 15055 15066 15077 15085 15095 15105 15115 15122 15133 15145 15155 15166 15177 15185 15195 15205 15215 15222 15233 15245 15255 15266 15277 15285 15295 15305 15315 15322 15333 15345 15355 15366 15377 15385 15395 15405 15415 15422 15433 15445 15455 15466 15477 15485 15495 15505 15515 15522 15533 15545 15555 15566 15577 15585 15595 15605 15615 15622 15633 15645 15655 15666 15677 15685 15695 15705 15715 15722 15733 15745 15755 15766 15777 15785 15795 15805 15815 15822 15833 15845 15855 15866 15877 15885 15895 15905 15915 15922 15933 15945 15955 15966 15977 15985 15995 16005 16015 16022 16033 16045 16055 16066 16077 16085 16095 16105 16115 16122 16133 16145 16155 16166 16177 16185 16195 16205 16215 16222 16233 16245 16255 16266 16277 16285 16295 16305 16315 16322 16333 16345 16355 16366 16377 16385 16395 16405 16415 16422 16433 16445 16455 16466 16477 16485 16495 16505 16515 16522 16533 16545 16555 16566 16577 16585 16595 16605 16615 16622 16633