

Business and Personal.

The charge for insertion under this head is One Dollar a line for each insertion; about eight words to a line. Advertisements must be received at publication office as early as Thursday morning to appear in the following week's issue.

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Stow flexible shaft. Invented and manufactured by Stow Mfg. Co., Binghamton, N. Y. See adv., page 254.

Screw machines, milling machines, and drill presses. The Garvin Mach. Co., Laight and Canal Sts., New York.

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Notes & Queries

HINTS TO CORRESPONDENTS.

Names and Address must accompany all letters, or no attention will be paid thereto. This is for our information and not for publication.

References to former articles or answers should give date of paper and page or number of question. Inquiries not answered in reasonable time should be repeated; correspondents will bear in mind that some answers require not a little research, and, though we endeavor to reply to all either by letter or in this department, each must take his turn.

Special Written Information on matters of personal rather than general interest cannot be expected without remuneration.

Scientific American Supplements referred to may be had at the office. Price 10 cents each.

Books referred to promptly supplied on receipt of price.

Minerals sent for examination should be distinctly marked and labeled.

(4583) R. S. T. asks: What force causes the earth to revolve on its axis? If not known, what is the theory? A. According to the nebular hypothesis, the planets were formed from rings of nebulous matter separated successively from the main body, which, having a greater velocity at the outer edge than the inner edge, the gradual concentration of the ring by breaking and drawing to a common center increased the velocity of the outer side, by drawing it toward the central mass. This would induce a tendency to revolve, increasing by its contraction toward the central axis of the future planet. Thus when started into a revolving mass its velocity of revolution would be gradually increased by concentration until the final velocity of the fixed form is attained.

(4584) W. T. J. writes: I desire a fire extinguisher that is not injurious to life or can be inhaled. It has been my idea that where fire is extinguished by the use of gas or a compound it is done by the absorption or exclusion of the oxygen, which would also prove fatal to life. Am I correct about it? A. The ordinary chemical fire extinguishers are supposed to owe a part of their efficacy to the generation of carbon dioxide gas, which will not support fire or life. We see no way of producing a gas which will extinguish fire yet not prove fatal to life.

(4585) E. A. O. asks: What is the chief objection to the electric trolley wires, about which so much complaint is made in certain quarters? It seems to me the electric car is a wonderful advantage to the public. A. There is no doubt the electric car is a great improvement and highly advantageous wherever introduced. The chief objection is that the trolley wire is a naked wire, along which a streak of lightning is constantly passing. If the wire falls or other wires fall upon it, serious results may follow, and in some cases have followed. There are undoubtedly real dangers attending the trolley system, just as there are in the use of steamboats, locomotives, horse cars, gunpowder, gas pipes, kerosene lamps, etc. But when proper precautions are observed all these devices are reasonably safe. The trolley dangers are to a great extent suppositions.

(4586) F. A. B. says: Please explain in your paper the proper place for a ventilator in a sleeping room to carry off the exhalations, whether near the

ceiling or near the floor, and why. A. The ventilator should be near the floor, to take away the exhalation from the lungs, which is largely loaded with carbonic acid gas and moisture, which is heavier than pure air and falls to the floor. Slightly dropping the upper sash of the window is the best way to receive fresh air from the outside, but great care should be taken not to overdo it, and make a draught that will give colds.

(4587) Subscriber says: Please inform me if the year 1900 is a leap year. If it is not, please explain to me why? Also about the year 2000. A. By act of the British Parliament in 1752 for a reformation of the calendar, every centennial year not evenly divisible by 400 was not to be a leap year. This was to eliminate a small discrepancy arising from the division by 4 for ordinary leap years. The year 1900 will not be a leap year; 2000 will be a leap year.

NEW BOOKS AND PUBLICATIONS.

QUESTION AND ANSWERS ABOUT ELECTRICITY. A first book for beginners. Edited by E. T. Buber, 2d. D. Van Nostrand Co. 1892. Pp. 100. Price 50 cents.

To produce some seventy-nine pages of actual text as contained in this volume, four separate authors and one editor were required, according to the title page. The quotation "In the multitude of counselors there is wisdom" it is to be hoped applies to this somewhat diminutive result of the combined effort of so large a staff.

Messrs. Montgomery & Co., of New York City, have recently issued a 700 page catalogue and price list of supplies, tools, and machinery for all branches of the mechanical trades. Most of the descriptions are in very concise form, and the book is crowded with illustrations which well set out the leading features of the immense variety of implements shown. A mechanic having but a limited stock of tools to work with will find in this book almost everything needed or desirable to supplement or enlarge his facilities.

TO INVENTORS.

An experience of forty years, and the preparation of more than one hundred thousand applications for patents at home and abroad, enable us to understand the laws and practice on both continents, and to possess unequalled facilities for procuring patents everywhere. A synopsis of the patent laws of the United States and all foreign countries may be had on application, and persons contemplating the securing of patents, either at home or abroad, are invited to write to this office for prices which are low, in accordance with the times and our extensive facilities for conducting the business. Address MUNN & CO., office SCIENTIFIC AMERICAN, 361 Broadway, New York.

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