

for discharging the load of the body at the side of the wagon, thus avoiding obstruction of the street or railway thereon, provision being also made for placing the body in inclined position, so as to elevate the place of discharge, and, furthermore, to elevate the body to a greater degree and permit inclination of the body at its highest point, so as to dump the load at different altitudes relatively to requirements due to different positions of the place designed to receive the load in a cellar or elsewhere.

TRUCK.—E. F. SHERRILL and B. R. SHERRILL, Moline, Ill. In this patent the invention is an improvement in trucks and especially in that class of trucks designed for use in handling baggage, bricks, and the like, wherein it is desired to raise the articles to a higher level in some instances and to lower them from a higher level in other instances.

Designs.

DESIGN FOR RUFFLING.—C. SEIDEL, New York, N. Y. The designer has invented a new, original and ornamental design for ruffling which represents a width of material made up of comparatively heavy and light double and single cross-lined strips. Single and double cross-waved patterns run through the cross-lined portions.

NOTE.—Copies of any of these patents will be furnished by Munn & Co. for ten cents each. Please state the name of the patentee, title of the invention, and date of this paper.

Business and Personal Wants.

READ THIS COLUMN CAREFULLY.—You will find inquiries for certain classes of articles numbered in consecutive order. If you manufacture these goods write us at once and we will send you the name and address of the party desiring the information. **In every case it is necessary to give the number of the inquiry.** MUNN & CO.

Marine Iron Works. Chicago. Catalogue free.

Inquiry No. 7512.—For makers of the instrument called the "Leak Finder," used for locating leaks in underground water mains.

"C. S." Metal Polish. Indianapolis. Samples free.

Inquiry No. 7513.—For machines to make stapled and drawn push buttons.

For bridge erecting engines. J. S. Mundy, Newark, N. J.

Inquiry No. 7514.—For makers of rubber pillow ventilators.

Drying Machinery and Presses. Miles, Louisville, Ky.

Inquiry No. 7515.—For makers of typewriter parts, such as machine parts.

Handle & Spoke Mch. Ober Mfg. Co., 10 Bell St., Chagrin Falls, O.

Inquiry No. 7516.—For makers of garment hangers made of wood.

Sawmill machinery and outfits manufactured by the Lane Mfg. Co., Box 13, Montpelier, Vt.

Inquiry No. 7517.—Wanted, makers of an article for waterproofing silk without injuring the fabric or lessening the flexibility of same.

I sell patents. To buy, or having one to sell, write Chas. A. Scott, 719 Mutual Life Building, Buffalo, N. Y.

Inquiry No. 7518.—Wanted, catalogue of latest machinery for making peat bricks for fuel.

The celebrated "Hornsey-Akroyd" Patent Safety Oil Engine is built by the De La Verne Machine Company, Foot of East 138th Street, New York.

Inquiry No. 7519.—For makers of bare and insulated copper magnet wire.

WANTED.—Young man experienced in drafting and designing textile machinery "New England." Machinery, Box 773, New York.

Inquiry No. 7520.—Wanted, machinery to make briquettes from sawdust.

WANTED.—Ideas regarding patentable device for water well paste or mucilage bottle. Address Adhesive, P. O. Box 773, New York.

Inquiry No. 7521.—Wanted, makers of metal fountain syringes.

LATEST ADVERTISING NOVELTIES.—High-grade Illustrating, Designing and Printing. Catalogues a Specialty. Smith & Berkley, Holland Bldg., St. Louis, Mo.

Inquiry No. 7522.—Wanted, a saw operated by electricity, gas or steam for sawing trees.

Manufacturers of patent articles. dies, metal stamping, screw machine work, hardware specialties, machinery tools and wood fibre products. Quadriga Manufacturing Company, 18 South Canal St., Chicago.

Inquiry No. 7523.—For importers or makers of colored glass bead fringe used in making lamp shades; also for makers of stamped brass beading and moulding used in this work.

Absolute privacy for inventors and experimenting. A well-equipped private laboratory can be rented on moderate terms from the Electrical Testing Laboratories, 548 East 80th St., New York. Write to-day.

Inquiry No. 7524.—For makers of high resistance wire of small size, suitable for hot wire electrical instruments.

INVENTIONS WANTED.—Undersigned will consider one or two good patented or patentable inventions to manufacture on royalty. Something in popular demand preferred. Honest treatment guaranteed. F. Ranville Company, Grand Rapids, Mich.

Inquiry No. 7525.—For makers of post office caves.

WANTED.—Competent man who has knowledge of Mechanical Engineering, to take a position as traveling salesman for the selling of construction material used in Insulating Refrigerating Plants. Apply by mail to the Bruening Cork Company, Oakdale, Alfy Co., Pa.

Inquiry No. 7526.—For parties to manufacture motor cars for street car service, gasoline system.

Inquiry No. 7527.—For manufacturers of wire-forming machinery.

Inquiry No. 7528.—For makers of tape measures in metal boxes, having springs inside for winding.

Inquiry No. 7529.—For a machine for cutting right-angle, circular and oval beveled openings in metal board.

Inquiry No. 7530.—For manufacturers of ventilators.



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.

Buyers wishing to purchase any article not advertised in our columns will be furnished with addresses of houses manufacturing or carrying the same.

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 or labeled.

(9844) C. E. D. writes: In your answer to J. S., No. 5703, September 23, 1905, you say a person is no heavier while going up an elevator than going down, and explain the effect of inertia on the matter. It seems to me this does not cover it. Either the attraction of gravitation must be considered as a fixed something which exerts its pull without moving (an inconceivable thought to me) or else it must have a speed at which it pulls, just as light or electricity has a speed at which it travels. If it is admitted to have a speed, then this speed must be between 0 and infinity, and therefore measurable. If it had an infinite speed of action, any mass multiplied by this speed of action would be infinitely heavy, and therefore impossible to weigh. It would seem, therefore, that gravitation must have an appreciable measurable speed, and that if we could find an elevator with a constant speed, one would weigh as much less when coming down as the speed of the elevator takes from the speed of gravitation, while in going up the conditions would be reversed, and one's weight would be increased in the proportion that the speed of the elevator adds to the speed of gravitation. Is not this correct? A. The theory of the intrinsic nature of gravitation is not by any means settled among scientists. Indeed, there can hardly be said to be such a theory. There would seem, however, to be a substantial agreement that gravitation acts instantaneously through space. That gravitation has a velocity would hardly be considered a suitable expression of this fact. Nor do we see how the velocity of gravitation can have anything to do with the weight of bodies. This is determined by the relative amount of matter in the earth or major body and the body to be weighed, as we call it, and the distance between the centers of gravity of these two. It is not involved in the question of the speed of action of gravitation. Even if it were, the speed of action of gravitation is so enormous that any change of velocity in a moving body cannot affect the actual weight of that body, and all weightings at the same distance from the center of the earth are affected by it to the same extent, so that, like every other constant, it is omitted in considering the changes of value of the variables in an expression.

(9845) D. E. F. writes: I note the inquiry of L. A. H. (9779) in a recent issue of the SCIENTIFIC AMERICAN which I here quote: "Is there such a thing in the realm of science as flame or combustion without emitting light?" I take it that he means rapid combustion. That even in this sense the answer is "yes" you can really demonstrate in the following manner by means of the inclosed cards of this, transparent celluloid. Soak the celluloid over night in water. Take them out of water and wipe dry and let dry an hour or two. In a moderately warm room free from strong drafts, hold the card of celluloid vertically in the left hand and light the upper end with a match. When it burns down about half an inch blow it out. Thereafter there will be no light or incandescence even in the darkest room, but the charring of the celluloid will continue to run downward and disappear, leaving only a trace of ashes. The samples which I inclose herewith do not work as well as some which I have heretofore tried, which continued to disappear until the whole card was consumed, but these suffice to completely demonstrate this remarkable phenomenon. I think this celluloid is a little too thin to work well. I also inclose several white celluloid washers, which seem to be more efficient in demonstrating the phenomenon than is the transparent celluloid. Let about one-third of the disk burn before blowing it out. Soak these in water as indicated, then at once dry by pinching between blotters and burn. A. We have been interested in burning the pieces of celluloid you send us, as well as other pieces. They smoulder after the flame is extinguished, as do other combustible materials, until the substance is cooled below the temperature at which combustion ceases. We are not able to make the thin transparent celluloid burn any after the flame is extinguished. The white, thick disks contain some paint-like material, used for filling, which carries on the combustion longer. We are just as successful without soaking in water as when the pieces

are soaked. This is just as we should expect, since celluloid does not contain any ingredient which is soluble in water and it is impervious to water.

NEW BOOKS, ETC.

MACHINE SHOP TOOLS AND METHODS. By W. S. Leonard. New York: John Wiley & Sons, 1905. 8vo.; pp. 554; 689 figures. Price, \$4.

This is a very complete textbook of machine-shop tools and methods, which was written for use in connection with lectures on this subject given in the Mechanical Department of the Michigan Agricultural College. The book describes in detail all the various tools, both large and small, used in the modern machine shop. While necessarily somewhat elemental in character, it nevertheless contains a deal of information valuable to the ordinary machinist. It is very thoroughly illustrated with diagrams and half-tone plates. The present is the third edition, which has been thoroughly revised and enlarged.

ENGINEERING CHEMISTRY. By Thomas B. Stillman, M.Sc., Ph.D. Easton, Pa.: Chemical Publishing Company, 1905. 8vo.; pp. 597. Price, \$4.50.

In this, the third edition of a well-known manual on quantitative analysis, the author has taken note of the rapid changes during the past few years in methods of testing the various products of chemical technology and materials of construction, and he has completely revised that portion of his work that has to do with these subjects. Much additional matter has been included, especially information pertaining to asphalt, lubricating oils, Portland cement, and the technology of the products of the blast furnace. The book is fully illustrated, and is quite up to the standard of the previous editions, and will be found valuable to all students, chemists, and engineers.

COMMERCIAL ECONOMY IN STEAM AND OTHER THERMAL POWER-PLANTS. By Robert H. Smith. With numerous diagrams by H. Malcolm Hodson. Philadelphia: J. B. Lippincott Company, 1905. 8vo.; pp. 291. Price, \$7.

The main idea of the author in writing this work was to persuade the mechanical engineer to advance from the primitive view that engineering science can guide him only in the physical construction and dynamics of his machinery to the more complete idea that scientific method must also be applied to his reckonings of cost and value produced. The ultimate triumph of practical science must, the author believes, be evidenced in its demonstration of the means to attain maximum economy. An exact measure of economy is the first essential in any section of technico-commercial science. The author, therefore, discusses an "Economy-Coefficient" applicable to all kinds of productive industry, and also probably to the industry of distribution and exchange. By a simple combination of the three factors of Cost, Value, and Speed of Production, this coefficient aims at giving due value to all essential elements of commercial economy. The author also deduces other coefficients which are of value in the discussion. The book goes into commercial steam-power economy in a very thorough manner, and has numerous charts relating to this and kindred subjects. It is very complete and will be found to contain many useful ideas regarding economy in the operation of power plants.

PRACTICAL KITES AND AEROPLANES. By Frederick Walker, C.E. London: Guilbert Pitman, 1903. 16mo.; pp. 78. Price, 60 cents.

The kite, from the toy of a schoolboy, has, by the ordinary laws of mechanical evolution, developed into the aeroplane, capable of carrying loads vertically, and sustaining them at a certain altitude by the ordinary wind currents, but so far the airship of the future as a problem admits of no solution by the aeroplane or aero-curve surface alone; unless it may happen to a future inventor to cause a flat disk, of gas or air, which by its inherent high pressure shall impinge upon the inner surface of an aero-curve and by diversion overcome gravity, and thus cause a vertical ascension. This may occur in the future; but according to our present lights a captive aeroplane may be only used for raising a single passenger to the height permitted by the tension rope or cord and the pressure of the air current prevailing in the atmosphere. The author desires to create interest in the subject by a timely little book.

THE INDUSTRIAL AND ARTISTIC TECHNOLOGY OF PAINT AND VARNISH. By Alvah Horton Sabin, M.S. New York: John Wiley & Sons, 1905. 8vo.; pp. 372. Price, \$3.

This is a very complete technical work on the subjects of paints and varnishes. A brief account of their modern use, and of the principles involved in their fabrication and application, will be found within its pages. Among the subjects treated are Varnish and Its Manufacture; Linseed Oil; Tung Oil; Rosin; Japans and Driers; Varnish or Enamel Paints; Chinese and Japanese Lacquers; and Spirit and Pyroxylin Varnishes. A chapter on the protection of metals against corrosion is one of the most useful in the book. Other chapters deal with Water Pipe Coating; the Painting of Ships' Bottoms, and Ship and Boat Painting

as well; Carriage Painting; House Painting; and Furniture Varnishing. The book is illustrated with a number of half-tones, and will be found interesting reading by all who have to do with this industry.

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