

## RECENTLY PATENTED INVENTIONS.

## Mechanical.

**SETTING ENGINE VALVES.**—Frederick W. Williams, Minneapolis, Minn. This is a device for alternately adjusting and holding in position the lost motion of valve gearing during the process of setting the valves and eccentrics, the invention consisting of springs adapted to exert a pressure on the valve alternately in both directions in line with the travel of the valve.

**MECHANICAL MOVEMENT.**—William C. Eich, Harmonsburg, Pa. Combined with a shaft on which is a series of ratchet collars is a parallel shaft on which a series of pawl-carrying levers is journaled, a drive shaft having disks with projections adapted to engage the levers alternately, with other novel features, whereby a shaft may be continuously operated by means of a leverage to give greatly increased power.

**FLOUR BOLTING APPARATUS.**—Victor Monnier, Grafton, North Dakota. This invention covers an improvement in vertical centrifugal bolting mills, the apparatus including a series of horizontal revolving disks arranged one above another and a like series of revolving screens or bolts surrounding them, while a series of annular tubes is located at lower points than the disks and exteriorly of the screens.

## Electrical.

**COMMUTATOR TRUER.**—David McGinnis, Amsterdam, N. Y. A pair of adjustable guides is fitted to the brush-holding arm of a commutator, a sliding rod is fitted to the guides, and a plate carried by the sliding rod is furnished with the desired character of abrading or cutting surface, forming a simple attachment for truing the commutators of dynamo-electric machines or motors worn by the friction of the brushes and the action of the current.

## Agricultural.

**LEVELER FOR HARROWS.**—Lorenzo D. Corser, Ebensburg, Pa. This is an auxiliary device for use in connection with a harrow, and capable of adjustment with regard to the ground surface engaged to level all inequalities after the harrow teeth have operated on the plowed ground, the depth of the toothed engagement of the harrow with the soil being also controlled by improved means.

**CHURN.**—John F. Adams, Aledo, Ill. This is an improvement in churns having vertically reciprocating dashers, the churn also being provided with means for regulating the temperature of its contents while in use, and for ascertaining the exact temperature of the cream within the churn during the churning process.

## Miscellaneous.

**STOP WATCH.**—Charles Schlatter, Hoboken, N. J. This invention is designed to simplify and improve the starting and stopping mechanism of stop watches, and consists in combining with the main wheels of the stop movement the wheel of the seconds hand staff or fourth wheel staff and the wheel on the staff of the stop hand, an intermediate wheel or wheels being arranged to be oscillated to put the stop movement in and out of action.

**ILLUMINATED CLOCK.**—Austin A. Dubois, Brooklyn, N. Y. In this clock a dial is mounted on an hour hand tube and a lamp rests on the dial, the lamp globe having the hours of the day thereon, and the lamp and globe being rotated by the clock mechanism, when the time is indicated by a stationary hand on the outside of the globe, the clock being also adapted for day use.

**TIME RECORDER.**—Francis E. Tyng, Irvington, N. Y. This is a device designed to easily and accurately record the hours of labor of a large number of people, and has a cylinder with time card on a suitable shaft, a dial plate connected by gear with the cylinder, a frame on shafts above the cylinder provided with means for marking the time card, and a clock movement connected with the frame, it being designed that in using the invention each employe shall have a particular number corresponding with a number on the time card and on the dial plate.

**BALLOT BOX.**—Calvin Jackson, Jacksonwald, Pa. This box has two compartments, one to hold the bulk of the ballots and the other to receive ballots cast, communication between the two compartments being controlled by a transfer mechanism for shifting the ballots in single succession from the main compartment to the receiving compartment, the box being designed to facilitate balloting in secret by clubs, societies, etc.

**AERATOR.**—Lizzie F. Wood, West Lebanon, N. H. This is a portable device having a receiver near the top of a standard, the receiver having numerous small perforations, while lower on the standard are pans, also provided with perforations, for the aeration of warm and fresh milk, to facilitate cooling it and cause a rapid separation of the cream, the device being also applicable for other purposes, as the cooling and straining of sirups, the aging of liquors, etc.

**ANIMAL COLLAR.**—Gustav R. Sagelsdorf, Medford, Wis. This collar is formed of a light and cheaply manufactured chain which can be readily locked and unlocked, and is provided with a middle piece adapted to support a bell.

**HORSE DETACHER.**—David F. Sloan, Mattapan, Mass. This is a device adapted for attachment to any shaft, whereby the driver may readily sever all connection between the harness and the shaft, allowing the animal to escape, while the shafts will be held up and may be controlled to guide the vehicle till it stops, provision being also made for dispensing with the ordinary traces and whiffletree.

**SPOOL RACK.**—Charles H. Lewy, New York City. This is an attachment for sewing machines,

consisting of a rotatable table adapted to contain a number of spools, each capable of independent rotation, while the spools cannot be removed except by one having the key of the locking device, although the empty spools may be quickly and conveniently removed and filled spools substituted therefor.

**KITCHEN CABINET.**—Henry C. Armstrong, David E. Bigelow, and George L. Osborn, Ashland, Wis. This is a combination device for holding flour and sifting it, with the spices and other ingredients used in making bread and pastry, also providing a bake board and the implements needed, and an adjustably supported table hinged to let down at the side of the cabinet when not in use.

**TRUNK AND BED.**—George W. Snaman, Jr., Allegheny, Pa. This is a convertible device adapted to form a compact folding bedstead for use by parties camping out, while capable of holding the bedding and articles of personal wear when changed into the form of a trunk, a removable covering or screen being also provided to shield the occupant from attacks of insects.

**CUFF HOLDER.**—Asa A. Mehaffey, Poplar Bluff, Mo. This invention provides a slide having a spring clamping finger, a spring catch with lugs attached to it, and a body having a slot and notches, making an improved device for attaching cuffs to coat sleeves instead of to the shirt sleeves.

**DEVICE TO TEST CIGARS.**—Gabriel Balbin, Brooklyn, N. Y. This invention provides a holder adapted to receive the tips of cigars, from which connection is made to a rear chamber and the latter connected with a suction apparatus, whereby a uniform suction may be employed upon the cigars, that the manufacturer may judge of the burning qualities of different tobaccos.

NOTE.—Copies of any of the above patents will be furnished by Munn & Co., for 25 cents each. Please send name of the patentee, title of invention, and date of this paper.

## NEW BOOKS AND PUBLICATIONS.

**THE LOCOMOTIVE. New Series. Vol. XI. The Hartford Steam Boiler Inspection and Insurance Co., Hartford, Conn. 1890. Pp. 194. Illustrated.**

This is the bound volume of a little periodical published monthly in the interest of boiler users. It contains much practical and interesting matter on boiler explosions, practice and construction.

**MAPS OF THE UNITED STATES, SHOWING THE CENTRAL STATION PLANTS AND ELECTRIC RAILWAYS AND SYSTEMS IN OPERATION. The Thomson-Houston Electric Co., Boston, Mass. 1891. Pp. 93.**

These are a series of skeleton maps showing the location and type of electric stations all over the United States. The proponderance is largely in favor of the Thomson-Houston system.

**MIXED METALS OR METALLIC ALLOYS. By Arthur H. Horns. London: Macmillan & Co. New York. 1890. Pp. xvi, 384. Price \$1.50.**

The subject of alloys is one which has, in recent years, acquired a new impulse on account of the new combinations of metals. It has been brought before the public by recent lecturers and by the introduction of new alloys into engineering practice, such as aluminum bronze, manganese bronze, and other compounds of that class. The present book is well up to the times, treating of the latest modifications of metallic mixtures, and with the numerous tables of analyses and illustrations as required, forms a valuable addition to technological literature.

**RUBBER HAND STAMPS, AND THE MANIPULATION OF RUBBER. By T. O'Connor Sloane, A.M., E.M., Ph.D. New York: Norman W. Henley & Co. 1891. Price \$1.**

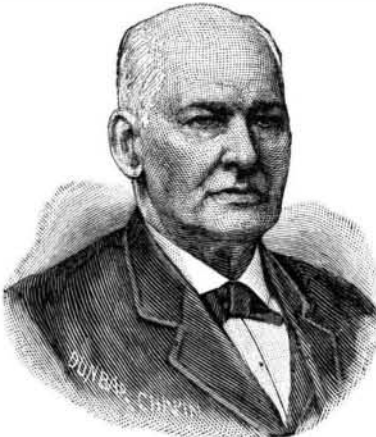
Probably thousands of young people have first attempted the doing of a little business on their own account by making rubber hand stamps and finding customers therefor among their neighbors. It is somewhat in the same line as the work of amateur printers, of whom there are so many in every section, but the detail connected with the making of stamps is more simple, and a moderate degree of success is easily attained with but little labor and a very small outlay. To all such beginners this book gives full details on all points, and it also has a great deal more, giving in a concise and simple form the elements of nearly everything it is necessary to understand for a commencement in any branch of the India rubber manufacture. The making of other small articles of rubber, and of the hektograph, or copying pad, together with a variety of special inks and cements, is also set forth in a manner designed to be readily understood, the explanations being plain and simple. The author has had an extended experience as a lecturer, and understands the art of presenting facts and describing processes in an interesting and attractive manner.

**A TREATISE ON ELECTRO-METALLURGY. By Walter G. McMillan. London: Charles Griffin & Company. Philadelphia: J. B. Lippincott Company. 1891. Pp. xvi, 387. Price \$3.50.**

The trade is particularly addressed in this work, and the requirements of electrolyzers and electroplaters are all fully taken into view. Among the details of the different branches of the practice, electric conductivity, units of measurements, switch and resistance boards, electro-chemical equivalents, battery connections, and Ohm's law illustrated mark the more scientific part of the work, and useful tables add to the value of this department. In the practical portion, every detail liable to be wanted by the actual operator is fully considered. An excellent glossary of substances and an index nearly 27 pages in length are features—the latter one worthy of special notice.

## Special.

## A Successful Life.



JOHN P. LOVELL,

President of the

## JOHN P. LOVELL ARMS CO.

In the many thousand homes where the SCIENTIFIC AMERICAN is read each week there are perhaps hundreds of thousands of young people growing into manhood and womanhood who should not fail to know some of the leading features which make up a successful business life. Every city and town has its examples, with which some are familiar, but seldom has a life been so marked with the fruits of integrity and uprightness, and a success become so widely known, as in the person of Mr. John P. Lovell, who recently celebrated the golden anniversary of his establishment in the business now known as the John P. Lovell Arms Company, in Boston. Some of the best business men of our country have recognized the characteristics which have led to this man's success, and a brief account of his life may inspire many a young man to follow the example which not only leads to personal happiness, but successfulness and a benefit to the world.

Mr. Lovell was born in East Braintree, July 25, 1830. At the age of eleven he left school and went to work in a cotton factory. One year later his mother opened a boarding house in Boston, and John had another year of schooling. With this scant equipment, but with an indomitable determination to succeed, this boy of thirteen entered into the arena of life's battle.

The years that followed found the lad making a noble fight against the disadvantages with which he was surrounded. After an eventful life in various lines of trade, he settled down to the gunsmith business in the employ of A. B. Fairbanks, to whom he became apprenticed at a weekly salary of \$2, with \$25 yearly allowance for clothes, and a raise of fifty cents per week and \$10 per year additional clothing allowance for each succeeding year until the age of twenty-one.

The qualities which in later years developed the man of large enterprise and unswerving integrity took firm root in the gunsmith boy, and Mr. Fairbanks was so gratified with his success that when John was twenty years of age, the old gentleman voluntarily took him in as a partner, with one-half interest. At this time John had not a dollar in the world.

Thus, fifty years ago, was formed the firm which to-day is represented by the great house of John P. Lovell Arms Co., whose business radiates throughout the world.

John's profit for the first year was \$700. In 1841 Mr. Fairbanks died, and Leonard Grover entered, the firm became Grover & Lovell. In 1844 John P. Lovell bought out his partner's share, and with renewed zeal pushed his business toward the high mark of success which he had set before himself in his youth. As the years sped by, his name and fame traveled from city to city. Through the ranks of the sporting goods dealers of America he hewed his way from the lowest to the highest place of success, until with honest pride he felt his feet securely planted on the high ground to which in boyhood days, when poor and unknown, his ambition had aspired. His family had grown up around him in the intervening years, and he now beheld his sons, developed into men, ready to assist him in his old age to carry to a further success the enterprise begun years before.

The John P. Lovell Arms Company was then formed, with J. P. Lovell, President; Col. Benjamin S. Lovell, Treasurer; Thos. P. Lovell, Director; H. L. Lovell, Clerk of the Corporation; and W. D. Lovell, Secretary.

Here daily may be seen John P. Lovell, no longer the young man whose steps are elastic in the pursuit of lofty ambitions, but John P. Lovell the man of years, who has trodden life's pathway through both the bitter and the sweet, and has emerged from its shadows and contests a man of success, both in the development of wealth and of character.

It is in viewing old age where the years have been spent in integrity of action that we behold the sum of many virtues, the fruits of which are a peaceful and contented winter sustained by a rich harvest, the seeds of which were planted and perseveringly watered in youth.

The lesson to be learned is not in the accumulation of wealth alone, but in the possession of those sterling qualities of integrity and manhood which command the universal respect of man. These lives are examples to set before the young men of America, lights to guide them in safety on a road which has many a dark and dangerous path into which they may stumble, unless the illumination from other lives points them clearly to the straight road of unblemished integrity.

## 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 next issue.

For Sale—New and second hand iron-working machinery. Prompt delivery. W. P. Davis, Rochester, N. Y. Acme engine, 1 to 5 H. P. See adv. next issue.

Presses & Dies Ferracute Mach. Co. Bridgeton, N. J., Burnham standard turbine. Burnham Bros., York, Pa. Best Ice and Refrigerating Machines made by David Boyle, Chicago, Ill. 155 machines in satisfactory use.

Steam Hammers, Improved Hydraulic Jacks, and Tube Expanders. R. Dudgeon, 24 Columbia St., New York.

Screw machines, milling machines, and drill presses. The Garvin Mach. Co., Laight and Canal Sts., New York. Tight and Slack Barrel Machinery a specialty. John Greenwood & Co., Rochester, N. Y. See illus. adv. p. 13.

For the original Bogardus Universal Eccentric Mill, Foot and Power Presses, Drills, Shears, etc., address J. S. & G. F. Simpson, 26 to 36 Rodney St., Brooklyn, N. Y.

The best book for electricians and beginners in electricity is "Experimental Science," by Geo. M. Hopkins. By mail, \$4; Munn & Co., publishers, 361 Broadway, N. Y.

For Sale Cheap. One Horizontal Slide Valve Engine, 8 inch cylinder, 16 inch stroke, with pulley, with assortment shafting, pulleys, steam pump, 10x5x14. Address H. T. Bartlett, 200 Lewis Street, New York.

The Dwight Slate Machine Co., of Hartford, Conn., make the most extensive line of hand, foot, and automatic feed drills for light work,  $\frac{1}{8}$  in. holes and less. 1891 catalogue free.

## Notes &amp; 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 or labeled.

(2927) L. E. M. asks if, in the using of pearl agate ware, it becomes dangerous after the lining peels off? A. We believe not. All ordinary agate ware is made on an iron basis, and is quite innocuous under all circumstances, and we presume the same applies to the special agate ware you mention.

(2928) A. W. B. writes: Last spring I constructed a cement cistern for storing maple sap. The sirup made from this sap was dark colored and had a strong taste. Was it the fault of the cistern? If so, what can I paint it with that will obviate the difficulty? A. It is very doubtful if the cistern had anything to do with your trouble. If it had, the trouble will probably cease. The taste and odor of the sugar would reveal to some extent the cause.

(2929) A. O. writes: I have a very nice meerschaum pipe, which has commenced to color very irregularly. Can you give me some remedy employed by pipe experts for removing the nicotine and restoring it to its original color, white? A. Wrap in a cloth and heat in an oven or over a stove to about 300° Fah. Do not apply a high heat.

(2930) W. D. B. asks: What is the best and cheapest formula for blue fire? A. The well known Bengal light is thus made: Saltpeter 6 parts, sulphur 2 parts, sulphide of antimony 1 part. Each must be separately powdered if necessary and then intimately mixed. The light is only bluish. The following is advantageous, as not containing sulphur: Ammoniacal sulphate of copper 6 parts, chloride of potash 6 parts, powdered shellac 1 part.

(2931) J. W. D. asks: Please inform me if there are six steamships that use between 300 and 400 tons of coal in 24 hours. A. Here are six: The Etruria, Umbria, Teutonic, City of Paris, City of New York, City of Rome.

(2932) R. M. T. writes: In your answers to querists (No. 2867) you do not give the proportions of boric acid in alcohol. Please name them. A. Use an excess. Add more than the alcohol will dissolve and shake the bottle from time to time.

(2933) A. B. C. asks: Of what is chalk composed? How is it made into the square blocks such as are used on billiard tables, that is, how mixed? A. Chalk is a mineral composed of carbon dioxide and calcium oxide (lime). It is worked by cutting into the desired shape. No heating, baking, or solution is needed.

(2934) G. I. L. asks whether there is an oil manufactured which is thin enough to allow air bubbles to rise through it rapidly and which does not vaporize much when placed in a vacuum. It also cannot be too expensive. A. Use good kerosene or mineral sperm.

(2935) I. S. M. asks: 1. Can the motor described in SUPPLEMENT, No. 641, be converted into a dynamo by a different connection of the wires? And if so, what will be the order of wiring? A. Use a cast iron field magnet, and wind both armature and field magnet with finer wire, say No. 22 or No. 24. 2. Can the dynamo described in SUPPLEMENT, No. 161, be converted into a motor by altering the connections, and if so, by what arrangement? A. The dynamo described in SUPPLEMENT, No. 161, will run well as a motor with a suitable current. 3. Is not the power of a motor due to the attractive and repulsive powers of the magnets in armature and field? A. Yes.

(2936) W. E. T. asks: How can I make and use the salt water bath in making a copying pad? A. Dissolve 2 ounces comm. salt in 1 pint of water, and use in outer vessel of a glue pot. Place gelatine mixture in the inner vessel.

(2937) E. L. M.—The World's Columbian Exhibition at Chicago is designed to open in April and close in October, 1893, but there will be a preliminary celebration in October, 1892, to mark the 400th anniversary of the New World discovery by Columbus, in 1492. The best time to visit the fair, in a general way, for one living at a long distance from Chicago, will probably be about the last of August or early in September, 1893, after the usual period of hottest summer weather, and when all matters pertaining to the management of the exhibition have become settled.—II. During several hundred years many of the best informed men in the world have been looking for the discovery of a practical method of navigating the air; we are not very confident that it will now be achieved at an early day, yet the possibilities of success in this direction seem to be steadily increasing with the new discoveries of every year.

(2938) C. E. E. asks: 1. Has there been anything yet found to make the flame of a kerosene light more brilliant than the oil itself can produce? A. Camphor is sometimes added, but it is not very effectual. A jet of oxygen can be used, with the effect of whitening and brightening the flame. This is the well known "Bude light." 2. Will you give an account in the SCIENTIFIC AMERICAN of what has been discovered thus far in the Antarctic sea toward the South