

## ENGINEERING INVENTIONS.

A car coupling has been patented by Messrs. Jacob W. Baker and George A. Prescott, of Dover, N. J. This invention relates to the construction of a novel form of drawbar and connections, to be used with the ordinary form of coupling link.

A boiler feed regulator has been patented by Mr. Charles O. Wyman, of Anoka, Minn. The invention consists of a tank with pipes connecting it with the boiler above and below the water line of the latter, and with pipes leading to the pump, with various novel features, to keep the water at all times at the proper height.

A reversing mechanism for engines has been patented by Mr. Lorin C. Forwood, of Shipmah, Ill. It consists in an eccentric held between collars secured to the main shaft of the engine, with sliding wedges arranged to move the eccentric transversely across the shaft, by which the reversing of the valve motion is effected, without the ordinary joints and rods required where links are used.

An automatic water feeder for steam boilers has been patented by Mr. Charles O. Rabut, of New York city. It embraces a system of valves operated by a float controlled by auxiliary floats, and also in an arrangement of an air valve to permit the escape of air during the filling of the float chamber, all of the working parts being inclosed by a casing, except when registering mechanism is employed.

A valve for hydraulic elevators has been patented by Mr. Parker F. Morey, of Portland, Oregon. This invention comprises a system of differential valves controlled by an auxiliary valve, and thus governing both the admission and the escape of water from the ram of the elevator, with provision for arresting the motion of the ram, as required, to stop the elevator, the design being also to prevent excessive wear from sand or grit.

## MECHANICAL INVENTION.

A machine for making whiffletree bolt blanks has been patented by Mr. John Stacker, of Winsted, Conn. In this machine a new form of anvil or die is employed, on which the heads of the bolt blanks are flattened, split, and spread or opened, in connection with a new device for splitting and opening the bolt, so that all the operations may be conducted with dispatch on the same machine.

## AGRICULTURAL INVENTIONS.

A combined corn planter and cultivator has been patented by Mr. John C. Weiss, of Sheldon, Md. The object of this invention is to improve the construction of a machine heretofore patented, involving novel features and combinations, to render the machine more convenient in use and more reliable in operation.

A harvester for sugar cane, corn, etc., has been patented by Mr. Samuel H. Percy, of Franklin, Tenn. This invention covers a novel construction and combination of parts in a machine to be drawn by teams on fields of standing crop, and automatically cut the standing canes and strip them of their tops and leaves, and drop them in bunches while passing along the cane rows.

## MISCELLANEOUS INVENTIONS.

A rein muff has been patented by Sarah J. Hull, of Stella, Neb. One end has a flap secured to one side and constructed to be folded over the end and secured to the opposite side, so that the reins and whip may be held in the hands and the latter be at the same time protected by the muff.

A carpet stretcher and tacker has been patented by Messrs. Adelbert H. Noyes, of Jefferson, and Frederick G. Noyes, of White Water, Wis. It has a staff and barrel, to the end of which is attached a toothed carpet stretching and holding head, in connection with a tack holding tube, and a foot pedal so arranged that the tacks may be driven thereby.

A mould for soles and heels of boots or shoes has been patented by Mr. Darius Banks, of Morrisville, Pa. It is for forming the heel and sole together of rubber or other plastic material, by simply pressing the latter into the mould by hand and permitting it to harden, the form being shaped and withdrawn from the mould in a manner not attainable with a solid mould.

A clevis has been patented by Mr. Arthur W. Rumsey, of New Kiowa, Kan. It is more especially designed for attachment to agricultural implements or machines, and provides a simple, inexpensive, and effective device, which may be quickly and easily coupled or uncoupled, but which will not uncouple accidentally.

A moulding machine has been patented by Mr. Samuel C. Burris, of Victoria, British Columbia. It has upper and lower cutter heads for simultaneously surfacing and grooving opposite sides of timber, with cutters arranged at an angle to the line of motion of the timber, and other novel features, to improve the construction of woodworking machines.

A miner's safety lamp has been patented by Mr. August J. Becker, of Mount Carmel, Pa. The invention consists of various parts and details, making a lamp which cannot be opened by the operator without extinguishing the light, and in which the light is extinguished when brought into contact with the fire damp.

A facing tool has been patented by Mr. Alfred H. Donnally, of Foxburg, Pa. The invention consists of a face plate carrying cutters and having ratchet teeth, a ratchet lever and pawl operating on the face plate, and there being a feeding device for the face plate, the tool being specially adapted for truing up the faces of oil well joints.

A combination ladder has been patented by Mr. Christian Koerner, of Rochester, N. Y. It is a step ladder connected with an auxiliary section by

separable hinges, the auxiliary section having one or two additional sections, and one of the sections having a short ladder acting in conjunction with the section to form a trestle for supporting a stage.

An ax has been patented by Mr. Nicholas Goodier, of Dardanelle, Ark. The ax body has a transverse groove, and a deeper slot at right angles thereto, to receive a corresponding tongue and projection on a detachable bit, the parts being rigidly united by a bolt passing through the projection, so the cutting blade is detachable and can be renewed when worn or destroyed.

An adjustable balcony has been patented by Mr. Gottlieb D. Husemann, of St. Louis, Mo. This invention covers a novel construction of folding balcony, which can be readily removed and folded in small space for storage, especially designed in washing the outside of windows, being so constructed that it can be easily adjusted in operative position in any window of any story.

A bicycle handle has been patented by Mr. Robert Rodes, Jr., of Nashville, Tenn. Combined with the bicycle handles are curved levers pivoted thereto, having hooks on their shorter arms, which are received in holes formed in the under side of the cross arm, to which the handles are jointed, the invention being an improvement on a former patented invention of the same inventor.

A dumbwaiter has been patented by Mr. James Murtaugh, of New York city. It consists of two counterbalanced carriages arranged in the same shaft, one above the other, each having means for operating it independently of the other, thus making a waiter in which the upper carriage can be conveniently used for the upper and the lower carriage for the lower floors of a building.

A bag fastener and tag holder has been patented by Mr. Austid Leyden, of Atlanta, Ga. It has a plate with a hook or hooks, over which a tightened bag cord may be drawn, a plate with a slot to receive the cord, an adjustable latch bar, and other novel features, being especially adapted for use on mail bags of the second class and on bags containing general merchandise.

A feeding mechanism for grain, flour, etc., has been patented by Mr. Charles A. Andrus, of La Grange, O. It is a mechanism which secures a positive discharge from the bin, subject to regulation as to the amount of material passed out of the receptacle, and applicable to a large range of work, from the natural grain to the softest stock, which is fed so that it cannot sift or dust and waste.

An inhaling device has been patented by Mr. Magnaduke W. Hobbs, of Richmond, Ind. It is an inhaler or respirator in which an adjustable disk or valve is employed for regulating the admission of air into the instrument when in use, and for closing one of the air openings when not in use, there being shallow trays for holding the substances to be inhaled, and a removable air induction tube.

A window cleaner has been patented by Mr. Carl B. Von Schenk, of Frankfort-on-the-Main, Germany. The invention consists of a pad attached to a bracket secured to a block, with a powder holder secured to the bracket, and a detachable pad, being designed to clean and polish windows, looking glasses, etc., without the use of water, the specially described powder consisting of silicic acid, magnesia, aluminum, and sulphuret of calcium, prepared as set forth.

A piano forte damper cover has been patented by Mr. Emil Hoffinghoff, of Barmen, Prussia, Germany. It is fastened to the back or to the bottom of a grand piano, and is hinged to the instrument so that it can be conveniently opened or closed by hand, and fixed to any desirable amount of opening, being designed to facilitate controlling the power and to improve the tone of the instrument, and also to guard against hurtful influences of temperature and dampness.

## NEW BOOKS AND PUBLICATIONS.

**ELECTRICITY IN THE SERVICE OF MAN.** From the German of Dr. Alfred R. Von Urbanitzky. Edited by R. Wolzell. 859 pp. London and New York: Cassell & Company.

This is a very comprehensive, popular, and practical treatise on the application of electricity in modern life, referring to and describing, with numerous illustrations, a large proportion of the hitherto published experiments and investigations in nearly all branches of electrical development. It is a treatise of the principles of electrical science, and Part II. of its technology, including generation and conduction, the electric light (noticing all the different systems that have attained any degree of success), electro-chemistry, and metallurgy, electricity as a motive power, the telephone and the telegraph.

**STEAM ENGINE CATECHISM. Part II.** By Robert Grimshaw. New York: John Wiley & Sons.

This little volume, really issued as a supplement to a former brief catechism of the same author, is a continuation of the same style of giving information in regard to steam engine practice, through the form of question and answer.

**PRECIOUS STONES IN NATURE, ART, AND LITERATURE.** By S. M. Burnham. Boston: Bradley & Whidden.

The author has put together in this volume 400 pages of very readable matter touching precious stones and their imitations, as a sort of supplement to his former work on "Limestones and Marbles," published in 1883. The chapters relative to collections of precious stones, crown jewels, and prices, trade, pawns, etc., engraving on stones, and their secular and sacred uses, are full of interesting anecdote and detail drawn from a wide field of investigation. Nearly one hundred pages are devoted to the diamond alone, and the appendix has tables of sizes of remarkable diamonds, and the relative hardness, specific gravity, and principal constituents of precious stones. The book has a full index.

## Special.

## A WELL KNOWN SOCIETY LADY'S LIFE SAVED.

Mrs. Colonel Fleming, an accomplished lady, well known in Philadelphia, in Western Pennsylvania, and in Washington, has been spending a considerable time in Philadelphia, preparatory to going to Washington, where it is understood she is to have her future home. Graceful in her movements, elegant in form, and the very picture of health in her features, Mrs. Fleming would not be taken for one who had suffered a long experience of illness, and who had so completely lost her health that her friends had given up all hope of her recovery.

The writer recently met Mrs. Fleming, and had a conversation with her as to her illness and restoration. "For many months," said Mrs. Fleming, "during the protracted illness of my husband, which resulted in his death, I was with him night and day, undergoing a very severe strain, both physically and mentally. While he lived I was able to bear up under all this, but when he died then came a reaction, and I was taken with a severe catarrhal fever. This brought me down very low. After a while I rallied, but did not recover my health. I fell into a state of nervous exhaustion, with neuralgic pains almost beyond endurance. My head was so sensitive that I could not touch it with a comb. My hands were so disabled that I could not bar my own window shutters. I had difficulty in recognizing my best friends during some of the time while I was at my worst. Day and night I suffered more than I can tell. This was at my home in Franklin, Pa. Finding that the best physicians there were unable to relieve me, I came to Philadelphia to consult physicians who were specialists in nervous diseases. Following their advice, I went to the University Hospital, where I had a private room and the most skillful medical attendance. But it was in vain. From all this I received no advantage.

"Some years ago I had heard of what was then a new remedy, but was said to do wonderful things in the cure of stubborn and chronic nervous diseases. It was 'Compound Oxygen.' I thought I could do no worse than to try it. Unable to walk even a short distance, I went in a carriage to the office of Drs. Starkey & Palen. On reaching there I was so exhausted that I was unable to state my case to Dr. Starkey. After resting, I had a full conversation with him, and he gave me encouragement to hope that Compound Oxygen might give me some relief. It was with some apprehension of possible failure that my first inhalation was taken. But as soon as I realized what it was, I was delighted with the soothing and strengthening effect of the treatment. Dr. Starkey thought that in about three weeks some permanently good result might be expected. Rooms were secured near the office, for I was too weak and nervous to go any great distance, even in a carriage. I took the Office Treatment regularly every day. In about two weeks I experienced a marked improvement, which now daily increased. My exhausted brain began to be itself again, and my body received new vitality. With improvement came hope of entire recovery. For the first time since my husband's death I found relief from the pain and prostration which had borne so heavily on me.

"With changing weather, I would sometimes receive a partial setback for a few days. But this did not discourage me. Friends of mine, in Franklin, had been cured of severe and protracted illness, and why should not I? I kept regularly on for months, not as an experiment, for I found that I was receiving solid and practical good from the treatment.

"Not a particle of any other medicine but Compound Oxygen did I take. This was doing the work for me, and I determined to give it a fair chance."

"I suppose I need hardly ask you, Mrs. Fleming, if your health is now perfectly restored?"

"I am as you see me. I have neither ache, pain, nor weakness. I sleep well, and my appetite is hearty. I am as active as I ever was, and in as good spirits, and I lay it all to Drs. Starkey & Palen's care of me, and treatment with Compound Oxygen. Without this I think I should have been dead long before this. It is now nearly two years since I began taking the Compound Oxygen. If I should ever be sick again, I will again take it; but happily I have no need of it now."

The whole story of Compound Oxygen is pleasantly told in a little brochure of 200 pages, issued by Drs. Starkey & Palen, 1523 Arch Street, Philadelphia, Pa. This will be mailed freely to all who write requesting it.

## 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.

Prof. Vose, in the preface to his "Manual for Railroad Engineers," says that Trautwine's "Civil Engineer's Pocketbook" is "beyond all question the best practical manual for the engineer that has ever appeared." See also Trautwine's "Railroad Curves" and "Earthwork."

A prominent mechanical engineer makes the statement that the loss from the absence of a covering from steam pipes and boilers is astonishingly large. One square foot of exposed surface of engine, boiler, or steam pipe, will condense, per hour, an amount of steam equal in foot pounds to one-third of a horse power. In available work, the loss is fully one-twentieth of a horse power per hour for each sq. ft. of exposed surface. In view of these facts, it behooves every user of steam to see that all his steam-heated surfaces are properly covered with a good, durable, non-conducting covering. For the past eighteen years the H. W. Johns Mfg. Co., of this city, has made a special study of this branch of their business, and are supplying materials which, for durability and efficiency, stand superior to all others in the market.

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Presses & Dies. Ferracute Mach. Co., Bridgeton, N. J. Nickel Plating.—Sole manufacturers cast nickel anodes, pure nickel salts, polishing compositions, etc. \$100 "Little Wonder." A perfect Electro Plating Machine. Sole manufacturers of the new Dip Lacquer Kristaline. Complete outfit for plating, etc. Hanson, Van Winkle & Co., Newark, N. J., and 92 and 94 Liberty St., New York.

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## 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.

(1) J. F. P. asks if a diamond will give light in the dark. A. No; unless by phosphorescence after exposure to sunlight or the electric arc light.

(2) B. D. asks how to preserve some mole skins without injuring the fur—an easy method. A. Supposing the skins are dry, they should be softened throughout by soaking in pure water; soft water is best, but any ordinarily pure water may be used, and care must be taken that the skins are thus soaked only a sufficient time to soften them. Then clean off any bits of flesh that remain on the flesh side, rinse all well,