

## RECENTLY PATENTED INVENTIONS.

## Electrical Devices.

**RAILWAY-SIGNAL.**—W. B. SMITH, Redlands, Cal. This invention refers particularly to improvements in signals placed on the cabin or rear car of a train, the object being to provide a signal of novel form and automatically actuated to show approximately the speed at which the train is moving, so that the engineer on a following train may see whether the preceding train is moving fast, medium, or slow and regulate the speed of the following train accordingly, thus avoiding accidents.

**CUT-OUT.**—C. W. SNYDER, Hudson, N. Y. The object of the invention is to provide means for automatically breaking the circuit through the light some time after an element of the cut-out has been manually operated, or, in other words, to permit the burning of a dim light for a predetermined time after turning the key to break the direct current from the main circuit through the filament. It relates to improvements in cut-out lights and other electrical devices.

## Of Interest to Farmers.

**STOCK-FEEDER.**—J. J. DOWELL, San Francisco, Cal. Mr. Dowell's invention relates to stock-feeders, his more particular object being to produce a feeder in which the supply of feed is to some extent under the control of the animals to be fed. The inventor finds that animals—such, for instance, as horses—when fed by either of certain devices of the feeder soon learn to manipulate the agitators, so as to control the supply of food at will.

**CORN-SILKING MACHINE.**—L. S. FLECKENSTEIN, Easton, Md. This improved machine combines the two very important qualities of a movement of a screen-holder which effects the rapid passage of the corn through the screens and adaptation for convenient and quick removal of the screens individually while the machine is in operation. Removing and reinsertion of a screen occupies but a few moments. Parts of machine contacting with the corn are preferably galvanized so that they can be easily kept sweet and clean.

**THRASHING AND STRAW-CUTTING MACHINE.**—C. J. SMITH, Durham, Canada. The concave is dispensed with in this thrashing machine. The cylinder is provided with diametrically-opposing diagonally located knives which act in conjunction with ledger-plates and feed-rollers behind the plates and the cylinder not only serves to thresh out the grain, but also to cut the straw in fine particles. Means are provided for separating the chopped straw from the grain and for blowing the chopped straw from the machine. One feed-roller automatically moves to or fro from the other, according to thickness of the bed or spread of material, and means provide for controlling the speed of the feed-rollers. The teeth never beat through more than two inches before the straw is cut off. While it takes twelve to fifteen men to operate a long straw thresher, Mr. Smith's invention requires but seven.

## Of General Interest.

**NUT-LOCK.**—J. W. GRAEME, Washington, D. C. The invention is an improvement in nut-locks, and particularly in that class of nut-locks in which a pawl carried by the nut engages with an abutment. The invention may be applied to right or left-hand nuts, the change necessitating merely a reversal of the pawl.

**GATE-HINGE.**—H. MEINECKE, Tomah, Wis. In this case the invention is an improvement in hinges for gates and similar heavy objects wherein the weight of the gate or the like exerts a heavy strain upon the hinge; and one of the objects of the present invention is to provide a novel construction whereby the weight of the gate will operate to tighten the hinge in place.

**ART OF MAKING PERFORATED PAPER.**—F. J. MORZ, New York, N. Y. This is a new method particularly intended to produce the perforated sheets used in musical instruments, but it is useful in other connections. Heretofore perforations have been made by cutting or punching them in paper, which involves a loss of paper, an extra expenditure of time and labor, and also materially weakens the sheets. The inventor comprehends forming openings in the paper stock while the same is yet in pulp-like form, and subsequently the stock thus orificed is converted into paper, producing the perforated sheet.

**CONVEYER.**—A. L. LAUBENSTEIN, Ashland, Pa. This conveyer is such as used for loading coal, iron ore, dirt, and similar material. In practice these conveyers usually comprise endless chains, which are continuously driven and have buckets or blades attached to them for advancing the material. The object is to produce a chain-link of simple construction for such conveyer especially adapted for attachment to the bucket.

**DAM.**—J. L. HOLMES, Butte, Mont. The invention relates to metal dams, such as shown and described in the application for Letters Patent of the United States, formerly filed by Mr. Holmes. The present object is to provide a dam for rivers and other waterways to permit of utilizing dammed-up water for use in power plants, for irrigation, and other purposes, the dam being arranged to prevent or retard the corrosive action of water and air on the metalwork of the dam, to properly brace the dam and hold it against tipping

over in an upstream direction when water is withdrawn, and to protect it against ice, logs, and other floating matter.

**CONCENTERING COUPLING DEVICE FOR PIPE OR CASING SECTIONS.**—J. W. HAYS, Woodsfield, Ohio. The invention has reference to means for centering tubular members when coupling together adjacent ends thereof; and one of the principal objects is to overcome many former disadvantages and objections and to provide means whereby the adjacent ends of pipe-sections to be coupled together may be centered with relation to each other, thereby enabling the two sections of pipe to be quickly joined together for use for various purposes.

**FURNACE FOR TREATING SHEET IRON AND STEEL.**—H. H. GOOSELL, Leechburg, Pa. The present invention has reference to furnaces for treating sheet iron and steel, but more particularly to an improved type of furnace which may be used advantageously in connection with the process described in an allowed application formerly filed by Mr. Goodsell. In this improvement the process is an annealing as well as an oxidizing process.

**METALLOPHONE.**—F. R. GOOLMAN, Binghamton, N. Y. One purpose of the inventor is to provide an instrument in which the sound-producing devices consist of metal scale-bars operated upon by hammers and to so construct it that the hammers will be pneumatically controlled and the pneumatic devices brought into action by connection with a suitable electric motor and to provide means for automatically starting the motor when a coin is dropped, and automatically stopping the instrument when the end of a piece of music or its repeat is reached.

## Machines and Mechanical Devices.

**BINDING-MACHINE FOR WAY-BILLS, ETC.**—C. F. MCBEE, Athens, Ohio. More especially this invention has reference to machines for binding together in book form any desired number of paper or other sheets, as way-bills, checks, or the like, and one of the principal objects thereof is to overcome disadvantages and objections common to many other machines devised for similar purposes. The machine may be made of any desired size, and the height of the pile or stacks of sheets to be bound together may be varied within the limits thereof. A leading eastern railroad company is now using the machine at some of its stations.

## Prime Movers and Their Accessories.

**SPARK-TIMING DEVICE.**—G. A. ELSASSER, JR., and P. M. ELSASSER, Philadelphia, Pa. The invention pertains to a device for timing the electric igniting spark in gas-engines and the like. The objects are to secure in devices of this character simplicity of operation and construction, accuracy in timing, accurate and simple adjustment, small cost of production, compactness, wide range of speeds, and ready adaptability for all kinds of gas, gasoline, and all other explosion engines employing the electric jump-spark for the ignition of gas.

**FEED-WATER HEATER.**—B. E. EASTBURN and F. L. TAPIA, Montgomery, Ala. The invention consists in a means for introducing boiler-steam into the feed-water between the injector or other means for forcing the feed-water and point of entry of the feed-water into the boiler. This means consists of a pipe leading from the steam-dome to a fitting interposed in the feed-water pipe, and having a valve-controlled connection for the pipe from the steam-dome, so that upon opening the valve of said connection steam is admitted from the dome into the feed-water, serving to raise temperature thereof, and to accelerate its movement into the boiler.

**THROTTLE-VALVE.**—H. M. LORTON, Atlanta, Ga. The invention has for an object the provision of a construction whereby a portion of the fed steam or other power fluid may be admitted to a desired point in advance of the passage of the main supply of such power fluid to its point of operation. An advantage is, that by graduating the amount of steam passing through V-shaped ports the main-valve seats are not cut by what is known as "wire-drawn steam," as is the case where an ordinary disk valve is used to regulate the amount of steam fed.

**OIL-CONDUCTOR.**—J. C. JONES, Tucumcari, New Mex. This improvement pertains to feed devices for oil-conveying tubes, and the object is to provide a device that will insure an even and steady flow of oil through a pipe leading from a lubricator to a chamber subject to a variation in pressure—such, for instance, as the steam-chest of a locomotive or engine in which the changes of pressure are not only frequent and constant but often very great.

**ROTARY ENGINE.**—L. VAN D. SUTTON, West Newton, Pa. Mr. Sutton's invention is an improvement particularly in that class of rotary engines represented by his former patent, and in which cylinders consisting of annular tubes are arranged close together at their lower ends and diverge toward their upper ends, so that they afford space between them for the operation of a carrier which co-operates with pistons in the form of long curved cylindrical bodies and operating in the cylinders.

**SLIDE-VALVE FOR STEAM-ENGINES.**—L. J. W. H. GIFFHORN, deceased, Spotswood, N. J.; EMILY GIFFHORN, Administratrix. The invention pertains to improvements in the

slide-valve of steam-engines; and the objects are to remove or counteract the well-known defects of the slide-valve as it now exists, namely, the unevenness of the valve and the valve-seat resulting from wear—and thereby to prevent and remove the effects caused by the unevenness, such as loss of steam, coal, or other fuel, machinery and money. The slide-valve is self-regrinding.

**STEAM-BOILER.**—C. A. STURM, Castlerock, Wash. In this patent the object of the inventor is to provide a new and improved steam-boiler which is simple and durable in construction, cheap to manufacture, and arranged to utilize the burning fuel to the fullest advantage and with a view to generate steam quickly and very economically.

**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. 7151.**—For manufacturers of springs wound by a key and run for five or ten minutes.

For hoisting engines. J. S. Mundy, Newark, N. J.

**Inquiry No. 7152.**—For manufacturers of low pressure condensing engines of 4 to 10 h. p., suitable for driving a ventilating fan in public school buildings.

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

**Inquiry No. 7153.**—For manufacturers of machine for cutting tub butter into one pound prints.

2d-hand machinery. Walsh's Sons & Co., Newark, N. J.

**Inquiry No. 7154.**—For manufacturers of chain-making machinery, suitable for modern chain works.

Perforated Metals, Harrington & King Perforating Co., Chicago.

**Inquiry No. 7155.**—For manufacturers of colored marble for decorative purposes.

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

**Inquiry No. 7156.**—For manufacturers of machine for burning impressions on wood and leather.

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

**Inquiry No. 7157.**—For manufacturers of small toys.

Marketers of meritorious inventions and specialties throughout the world. Tatem Mfg. Co., Buffalo, N. Y.

**Inquiry No. 7158.**—For manufacturers of roller skates.

I sell patents. To buy them on anything, or having one to sell, write Chas. A. Scott, 715 Mutual Life Building, Buffalo, N. Y.

**Inquiry No. 7159.**—For manufacturers of endless canvas aprons.

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

**Inquiry No. 7160.**—For manufacturers of bakery machinery.

Gut strings for Lawn Tennis, Musical Instruments, and other purposes made by P. F. Turner, 46th Street and Packers Avenue, Chicago, Ill.

**Inquiry No. 7161.**—For manufacturers of chain dish-rags.

Sheet metal, any kind, cut, formed any shape. Die-making, wire forming, embossing, lettering, stamping-punching. Metal Stamping Co., Niagara Falls, N. Y.

**Inquiry No. 7162.**—For manufacturers of "Yale Metal Polish."

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

**Inquiry No. 7163.**—Wanted, address of Sterling Water Tube Boiler Co.

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. 7164.**—For manufacturers of apparatus for Turkish, Russian, vapor, electric and spray baths.

**WANTED.**—Thoroughly experienced practical ice machine—and Corliss engine salesman for concern in middle West. State experience, age and salary expected. Address Salesman, Box 773 N. Y.

**Inquiry No. 7165.**—For manufacturers of machinery for making muriatic or hydrochloric acid.

**PATENTS ON DREDGES AND DREDGING MACHINERY FOR SALE.**—By reason of the death of Ralph R. Osgood, valuable patents, having a long term to run, are offered for sale. For terms communicate with

The Albany Trust Company, Executor, Albany, N. Y.

**Inquiry No. 7166.**—For manufacturers of flat-headed tacks.

**Inquiry No. 7167.**—For manufacturers of steel strings for musical instruments.

**Inquiry No. 7168.**—For manufacturers of gas-making machines.

**Inquiry No. 7169.**—For manufacturers of glass, cheap watches, jewelry and cheap phonographs; also address of jobbers who supply mail order firms.

**Inquiry No. 7170.**—Wanted, address of company sinking deep wells.

**Inquiry No. 7171.**—For manufacturers of small gears, suitable for small clocks.

**Inquiry No. 7172.**—For manufacturers of electrically welded wire hoops or bands for wooden pails or other utensils.

**Inquiry No. 7173.**—Wanted, address of any who are experimenting in new insulators or substitute for rubber.

**Inquiry No. 7174.**—For manufacturers of novelties and patented articles, such as shear sharpeners, etc.

**Inquiry No. 7175.**—For manufacturers of differential plyers.

**Inquiry No. 7176.**—For manufacturers of dish-washers for ordinary household use.



## NOTES 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.

(9730) E. H. B. asks: Can you tell me magnetic variation for North Dakota for this year and following three? A. The magnetic declination for North Dakota is given in the tables published by the United States Geodetic and Coast Survey for 1902 as from 10 deg. 32 min. E. at Grand Forks to 16 deg. 55 min. E. on the Canada boundary in 103 deg. 30 min. west longitude. There is a large difference between the eastern and western parts of the State. The rate of change for the State is 4 min. decrease per annum. The tables to which we refer give the variation at many places in the State. As you do not give your county, we cannot give more definite information. If you are in Lamoure County, the variation was 12 deg. 24 min. in 1902.

(9731) G. J. B. writes: In your Notes and Queries of April 1, 1905 (No. 9594), you say that the curvature of the earth is 8 inches for one mile and 32 for two miles. This is right (approximately) when running an east-and-west level but ceases to be true when running north and south, or else the doctrine that the north-and-south axis of the earth is 26 miles shorter than the east-and-west axis must be false. It is easily evident that if you run a level starting from a given point on the equator and running west through 90 deg. of arc with 8 inches allowance for each mile and should then start at the same place on the equator and run north through 90 deg. of arc, you would come out up in the air at the north pole. This would be equally true if you run the same levels with equal fore and back sights. A true instrumental level is a series of short chords whose ends are equidistant from the center of the earth, and paradoxical as it may seem, a true level is a true circle. It is literally true that the Mississippi River runs up hill, else its mouth could not be farther from the earth's center than the source. It is also true that no river of the same levels could exist in an east and west course, unless its source was underground and it should rise gradually to the surface. The levels of the Amazon River are most decidedly different from the Mississippi. A. Definitions are the safeguards of a discussion. Unless words are used in the same sense by both sides to an argument a discussion is not profitable. And when you state that "an east-and-west level is not the same as a north-and-south level" and that "the Mississippi River literally runs up hill" it is evident that the terms "level" and "up hill" need definition. We cannot agree to either expression in the sense in which the dictionary requires us to use terms. If we define level, probably the term up hill will take care of itself, since it must be defined as departing from a level by rising above it. The Century Dictionary, which is usually considered as good authority, defines a level as "an imaginary surface everywhere perpendicular to the plumb line, or line of gravity, so that it might be the surface of a liquid at rest. Every such surface is approximately that of an oblate spheroid, as the sea level, for example, is." This seems very plain. We cannot think that anyone would maintain that the sea from the latitude of the source of the Mississippi to that of its mouth is uphill, yet if the river flows uphill surely the sea also flows uphill, and a ship sails uphill in the northern hemisphere here, as it sails south. A level is not a surface equidistant from the center of the earth, and is never defined as such. That would not be a level. Water would not lie upon such a surface, and a level run north and south does not differ from one run east and west. It is nonsense to say that a level is run differently in one direction from what is done in another. The only difference is that centrifugal force acts to modify the level north and south, but the liquid of a level, the ship on the sea and the waters of the flowing rivers, all are sensible to the action of this force all the time and everywhere. A level is the surface of still water, and the water of a south-flowing river at its source in the northern hemisphere is above the level of its mouth, and the water of this river flows down hill from its source to its river.

(9732) W. C. W. asks: Are there at present any annunciators which have one wire only running from the push buttons to the indicator? A. We do not see how there can be any possible way to wire for several pushes on an annunciator so as to ring from several