

the skins of sea-weed, showing a reference to the water.

The god, an extremely strong figure, in short garment (exomis) from which stand out in bold relief his right leg and breast, is in all probability Okeanos accompanied by Tethys. In front of these two divinities, who fittingly form the conclusion of the representation of the battle, flee up the steps several giants. The first has fallen on his knee; another with serpent legs, farther up the stairs, screens himself with a shield. The space which follows must have been filled with the coiled serpent-leg. At the top the small space between the stairs and the platform is occupied by an eagle which opposes the serpent. There is also an eagle on the right wing opposite as well as on the southwest and southeast corners respectively.

In this manner the whole dynasty of gods fighting with the giants runs around the substructure of the altar. Among the number of these groups there may be mentioned the most splendid and the best-preserved of all, groups representing Athena and her adversaries. Athena, the daughter of Zeus, having seized by the hair a beautiful, vigorous, four-winged giant, drags him along with her as she strides violently forward. The giant, Alkyoneus, who, according to the legend, was immortal on the soil which gave him birth, and

hence could only meet death away from his native place, in vain plants his feet on the ground.

Ge, the goddess of the earth, identified by the name to the left of her head and by the cornucopia at her side, rises out of the earth, and with uplifted hands implores mercy for her sons. Already the sacred serpent of Athena has coiled itself around his arms and legs, and has given him a fatal wound in the breast. His complete fall is foretold by Nike, the goddess of victory, who, floating down to the right of Athena, is about to place a crown on her head. The second opponent of Athena, Eukelados, between Alkyoneus and Porphyron, already lies conquered on the ground. The legend tells us that Athena threw the island of Sicily on top of him. On the ground near the goddess is part of a dead giant in full armor.

Among the number of sculptures found in Pergamon may be mentioned the large statue of Athena Parthenos, a copy of the famous gold and ivory statue made by Phidias. The pedestal of the statue is ornamented with reliefs. This copy, the work of a Pergamene sculptor, stood in the principal room of the library.

To the right of this statue there is a part of the colonnade built perhaps by Kadron (117 to 138 A. D.) which inclosed on three sides the sacred precinct of

the Trajan temple from Pergamon. Of the large figures of Trajan and Hadrian, now shattered, which were set up in the temple as honorary statues, the heads are still extant and exhibited here, one on the capital of a column and the other on that of a pillar. Both the column and the pillar were part of the Hadrian colonnade.

Some of the architectural members of the gymnasium, a building which stood half way up the acropolis, and which also belongs to the Hadrian period, have been given a place here between the two heads above mentioned. Then follows a corner of the Trajan temple with its beautiful, slender corner acroterion.

To the right on Fig. 4 we show a portion of the stoa or colonnade which inclosed the sacred precinct of Athena in Pergamon, built by King Eumenes II. to give new splendor to the old sanctuary. A peculiar decoration of the colonnade was the parapet of the upper story with its reliefs representing weapons and various implements of war for both land and water.

The pieces here mentioned are but a few from among the great number of sculptures, reliefs, inscriptions, and pieces of architecture exhibited in this museum. Its whole contents offer not only an abundant material for study to archaeologists, but also a singular delight to all friends of works of art.

## RECENTLY PATENTED INVENTIONS.

### Of Interest to Farmers.

**BEET-PLOW.**—E. G. SMART, Salinas, Cal. The invention refers to means for removing beets or other esculent tubers from the soil, and has for its object to provide a power-driven plow having adjustable disks that by rotation raise the vegetables from the ground and leave them on the surface, cutting off vines and weeds when the disks are progressively moved along rows of the beets for their excavation from the soil.

### Of General Interest.

**CUTTING AND PUNCHING DEVICE.**—J. EVANS and J. EVANS, Salt Lake City, Utah. The principal objects of this improvement are to provide means whereby a belt may be guided within the machine in such a manner as to provide for locating the lacing-holes and cutting off the end at the desired points, and, furthermore, to provide a simple and convenient arrangement of the punches and blades necessary for performing these operations and to secure a convenient and efficient arrangement of the punches and blades necessary for performing these operations and to secure an efficient leverage system for the punches and blades.

**PROCESS FOR THE MANUFACTURE OF ARTIFICIAL PEARLS, ETC.**—P. E. L. PERDRIZET, 4 Rue Elzévir, Paris, France. Imitation pearls manufactured by known processes, and more particularly the large variety, are too fragile when hollow and too heavy when solid, and the manufacture of pearls of irregular form which are termed "baroques," is more costly than that of pearls of regular form in consequence of a special molding process having to be adopted. This process obtains artificial pearls having a nacreous luster and in a high degree the qualities of strength and lightness and an irregularity of form which imparts an exact resemblance to genuine pearls, "baroques."

**INTERCHANGEABLE JOURNAL.**—J. H. OSTRANDER, Ticonderoga, N. Y. Among the several objects of this invention are: first, to render the journals readily interchangeable; second, to provide against displacement of the journal from its proper position; third, to give the journal such conformity as will enable it to be braced when in position, and, fourth, to provide constructional details affording peculiar advantages. It relates particularly to journals of the kind used upon rollers—for instance, in paper-mills.

**APPARATUS FOR MAKING STEEL AND OTHER METALS.**—E. C. WILLS, Trenton, N. J. In this case the invention is an improvement in apparatus for use in the manufacture of steel and the like, and relates particularly to the construction of the converter and the means for operating the several parts thereof and for admitting air and the like in the use of the apparatus.

**SNATCH-BLOCK.**—P. H. STROHMINGER, Mansfield, Ohio. This block is intended particularly for use by electric linemen, although it is useful in other connections. The object of the invention is to enable the snatch-block to be cheaply and durably constructed, at the same time avoiding the possibility of the block becoming accidentally unfastened, this being an important desideratum in case the block is used by electric linemen.

**TWEEZERS.**—E. C. ELLSWORTH, Cambridge, Vt. Although adapted for general use, the tweezers are specially designed for watchmakers for use in removing and replacing the escapement-lever of watches. The invention possesses special advantages, is cheap to manufacture and simple in construction. To the end above stated Mr. Ellsworth has invented the peculiar tweezers or, more definitely stated, an attachment to an ordinary pair of spring-tweezers.

### Heating and Lighting.

**SECTIONAL BOILER.**—J. J. M. LANGE, Svendborg, Island of Funen, Denmark. This invention relates to an improved element, sectional, or joint boiler—that is to say, a boiler which can be set up directly from cast elements or sections all alike and which particularly serves for heating water or as a low-pressure boiler, for instance, in central heating arrangements and the like. It is easy to tend, being divided up into a number of small furnaces or stoves easily arranged as magazine-stoves. It may be used partially—that is, a larger or smaller number of furnaces may be lighted, according to the momentary need, whereby the remaining cold elements are left out of action.

**OVEN-SCREEN.**—B. MORGENSTEIN, Shenandoah, Pa. Better results are obtained in baking if a certain amount of moisture is introduced. In using this screen after it is introduced the receptacle which is on the side toward the baking-surface may be filled with a hose. The water now gradually flows through the contracted opening of the spout, down the screen and onto the surface adjacent to the grate and there vaporized, it passing with the hot air through the screen-opening or over the flap and is thus quite uniformly distributed over the goods. When necessary, the receptacle may be refilled.

### Household Utilities.

**WINDOW-SASH BALANCE AND LOCK.**—T. PACHALL, SR., Reading, Pa. The purpose here is to provide a device applicable to window-sashes and frames which will dispense with the sash-weights ordinarily used and which will guide the sash up and down with least possible friction, and to provide means for adjusting the device to and from the sash, together with means for locking the sash closed or in any desired open position.

**FOLDING BED.**—J. D. FROMAN and T. M. LANHAM, Vevay, Ind. In this instance the invention relates to a bed which can be combined with a bookcase, settee, wardrobe, dresser, and various other kinds of furniture. The principal objects are to provide for folding a bed in such a manner that it will occupy much smaller space than has been the case heretofore, and especially to reduce the vertical space occupied by the bed in folded position.

### Machines and Mechanical Devices.

**LOADER.**—J. C. MIRE, Belle Helene, La. It is the object in this case to provide a loader, more especially designed for conveniently and quickly loading sugar-cane, hay, or like material into wagons, carts, or other vehicles, the loader being simple and durable in construction, easily manipulated, readily moved about a field, and requiring but little manual labor to handle large quantities of the material in a comparatively short time.

### Prime Movers and Their Accessories.

**ROTARY ENGINE.**—F. M. OBER and B. DUGAR, Morrisville, Vt. In this patent the invention has reference to a rotary steam or other elastic-fluid engine in which the rotor is provided with a number of piston-heads revolvably mounted thereon and coacting with abutments supported by the cylinder or stationary part.

**CARBURETER FOR GAS-ENGINES.**—O. MINTON, New York, N. Y. The improvement pertains to a device for mixing air and a combustible fuel for gas-engines, although it may be used for other purposes; and the principal object in view of the inventor is the provision for regulating the mixture of air and fuel to be admitted, and also the quantity.

**POWER MECHANISM.**—P. ADAMS, Lamar, Col. In this mechanism will be found improvements for aiding the working power for a device to be operated over a power initially derived from a steam or other motor, thus

resulting in an economical use of motive agent, as an engine of comparatively small horsepower may be employed to perform work requiring a much greater horse-power.

### Pertaining to Vehicles.

**ARMORED-TIRE.**—C. W. CATERSON, Franklin Forks, Pa. In this instance the invention refers to the tires of vehicles, and especially to pneumatic tires. The object is to produce an improved tire of the class popularly known as "armor-tires," the purpose being to present a substantially non-puncturable pneumatic tire which will have all the resilience and usual qualities of an ordinary pneumatic tire.

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. 7531.**—For makers of needle tubing from which to make hypodermic needles.

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

**Inquiry No. 7532.**—For manufacturers of gasoline motor cars.

Drying Machinery and Presses, Biles, Louisville, Ky.

**Inquiry No. 7533.**—For manufacturers of wire suitable for toasters; also for parties who supply thin sheet iron.

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

**Inquiry No. 7534.**—For manufacturers of or dealers in bird lime.

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

**Inquiry No. 7535.**—For manufacturers of fiber brushes, or machines to make the same.

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

**Inquiry No. 7536.**—For manufacturers of wood fretwork.

WANTED.—Patented specialties of merit, to manufacture and market. Power Specialty Co., Detroit, Mich.

**Inquiry No. 7537.**—For makers of structural shapes of aluminum, small T-irons, angle irons and 3-16-inch thick flat sheets.

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. 7538.**—Wanted, machinery for stamping letters on metal disks.

WANTED.—Draftsman for Patent Office drawings. Salary, \$1,200. State experience. Address F. L. D., Box 773, New York.

**Inquiry No. 7539.**—Wanted, address of firms making a specialty of bending copper and brass tubes.

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

**Inquiry No. 7540.**—Wanted, castings and material to make a motor and dynamo of from 1/4 to 1/2 h. p.

FOR SALE.—Paying up-to-date metal working plant. Best location; good building. \$75,000, or will sell large interest to right man. Chance, Box 773, New York.

**Inquiry No. 7541.**—For dealers in rod-straightening machines, to straighten rods of machine steel.

WANTED.—A Young Man familiar with drafting to assist superintendent in an iron casting plant. Good opportunity for advancement if capable. Draftsman, Box 773, New York.

**Inquiry No. 7542.**—For makers of canning machinery, also of machinery for making the tin cans.

For Sale or Promoter Wanted.—Patent portable, reversible iron fire escape, *sola ladder*, any number of persons height or window, operated from interior, no obstruction. Heath, 314 W. 141st Street, New York.

**Inquiry No. 7543.**—Wanted, machines for attaching or fastening metal buttons on cloth.

**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. 7544.**—For manufacturers of microscopes.

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. 7545.**—For makers of bench shapers; also of small screw-cutting lathes, other than the Barnes, Sebastian and Star.

Manufacturers of all kinds sheet metal goods. Vending, gum and chocolate, matches, cigars and cigarettes, amusement machines, made of pressed steel. Send samples. N. Y. Die and Model Works, 508 Pearl St., N. Y.

**Inquiry No. 7546.**—For manufacturers of spring, such as used in clocks; also for makers of light, small castings, as used in making locks.

**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. Rantville Company, Grand Rapids, Mich.

**Inquiry No. 7547.**—Wanted, machinery for the manufacture of wood alcohol.

FOR SALE.—A modern, up-to-date plant—established sixteen years. Suitable for woodworking of any kind. Direct freight tracks into factory. Wagon builders or automobile manufacturers would find a proposition worthy of most careful consideration in this offer. Address Sale, Box 773, New York.

**Inquiry No. 7548.**—Wanted, the makers of the Long Life Apparatus, for the purpose of purifying air in rooms.

**Inquiry No. 7649.**—Wanted, machinery for working dough in a bakery, with steam and hand power.

**Inquiry No. 7550.**—For the makers of the fastener called the "Security."

## INDEX OF INVENTIONS

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AND EACH BEARING THAT DATE

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Advertising device, clock controlled, H. C. Quick.....	805,028
Aging, mellowing, and purifying wines and liquors, apparatus for, J. F. & J. F. Duffy, Jr.....	804,935
Agricultural implements, riding attachment for, N. H. Bloom.....	804,922
Air brakes, mechanism for automatically actuating, C. P. Geritz.....	805,420
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