## Recent Eruption of Kilauea.

This great volcano has been active for several months past, the principal characteristic being a remarkable rise and fall of melted lava within the crater. L. A. Thurston gives the following among other particulars in the Pacific Commercial Advertiser. In March, 1894, the lava had risen almost to the top of the crater, the rise being 447 feet in 19 months.

On the evening of July 6, a party of tourists found the lake in a state of moderate activity, the surface of the lava being about twelve feet below the banks.

On Saturday, the 7th, the surface of the lake raised so that the entire surface was visible from the Volcano House. That night it overflowed into the main crater, and a blow hole was thrown up some 200 yards outside and to the north of the lake, from which a flow issued. There were two other hot cones in the immediate vicinity which were thrown up about three weeks before. On Sunday, Monday and Tuesday, July 8, 9 and 10, the surface of the lake rose and fell several times varying from full to the brim to 15 feet below the edge of the banks.

On the morning of the 11th the hill was found to have sunk down to the level of the other banks, and frequent columns of rising dust indicated that the banks were falling in. The lake had fallen some 50 feet, through the escape of the lava by some subterranean passage, and the wall of the lake formed by the hill was falling in at frequent intervals.

The lava in the lake continued to fall steadily, at the rate of about 20 feet an hour from 10 o'clock in the morning until 8 in the evening. There was scarcely a moment when the crash of the falling banks was not going on. As the level of the lake sank, the falling rocks of the banks, undermined by the escape of the lava, caused a constantly increasing commotion in the lake as they struck the surface of the molten lava in their fall. A number of times a section of the bank, from 200 to 500 feet long, 150 to 200 feet high, and 20 to 30 feet thick, would split off from the adjoining rocks, and with a tremendous roar, amid a blinding gan to run back and fall down into the lake beneath, sia is used in the manufacture of steel rails.

cloud of steam, smoke and dust, fall with an appalling down-plunge into the boiling lake, causing great waves and breakers of fire to dash into the air, and a mighty "ground swell" to sweep across the lake, dashing against the opposite cliffs like storm waves upon a lee shore.

Most of the falling rocks were immediately swallowed up by the lake, but when one of the great downfalls referred to occurred, it would not immediately sink, but would float off across the lake, a great floating island of rock.

As the lava subsided, most of the surrounding banks were seen to be slightly overhanging, and as the lateral support of the molten lava was withdrawn, great slices of the overhanging banks on all sides of the lake would suddenly split off and fall into the lake beneath. As these changes took place the exposed surface, sometimes 100 feet across and upward, would be left red hot, the break, evidently, having taken place on the line of a heat crack which had extended down into the lake.

From 6 to 8 o'clock the entire face of this bluff, some 800 feet in length and over 200 feet in height, was a shifting mass of color, varying from the intense light of molten lava to all the varying shades of rose and red to black, as the different portions were successively exposed by a fall of rock and then cooled by exposure to the air. During this period the crash of the falling banks was incessant. Sometimes a great mass would fall forward like a wall; at others it would simply collapse and slide down, making red-hot fiery landslides; and again enormous bowlders, as big as a house, singly and in groups, would leap from their fastenings and, all aglow, chase each other down and leap far out into the lake.

scene at this stage are indescribable. As night came through the banks to other portious of the crater be-

making fiery cascades down the sides of the bluff. There were five such lava streams at one time.

The light from the surface of the lake, the red hot walls and the molten streams lighted up the entire area, bringing out every detail with the utmost distinctness, and lighted up a tall column of dust and smoke which arose straight up. During the entire period of the subsidence the lava fountains upon the surface of the lake continued in action, precisely as though nothing unusual was taking place.

## Russian Iron Production.

A consular report issued recently on the iron industry of European Russia states that during the past twelve years the output of pig iron has more than doubled, rising from 460,000 tons to 1,060,000 tons, and the combined output of wrought iron and steel has risen from 575.000 tons to 1.000.000 tons. A notable feature is the increased pace at which the production rises during the closing years of this period, marking the decisive expansion of the home industry at the expense of imports. Thus, pig iron rose at the rate of 16,000 to 24,000 tons a year up to 1886, after which the yearly increase is 48,000 to 80,000 tons, and from 1889-90 to 177.000 tons. Steel fell after 1881, an abnormal year, owing to the issue of great government orders for steel rails; shows no advance from 1883-89, but between 1889-92 rises from 253,000 tons to 516,000 tons. Wrought iron is stationary from 1884-88, and rises constantly up to 1892. A corresponding movement is noticeable in imports of pig iron, which from 1886-91 fell from 258,000 tons to 80,000 tons, and of wrought iron, which rose up to 1890, and from 1890 92 fell from 93,000 tons to 49,800 tons. The import of steel rose up to 1890, and from 1890-91 The awful grandeur and terrible magnificence of the fell from 16,000 tons to 12,900 tons. While the gross production of steel rose from 1882-92 from 242,000 tons on, and yet hotter recesses were uncovered, the molten to 516,000 tons, the manufacture of steel rails shows lava which remained in the many caverns leading off little change (153,000 tons in 1882 to 182,000 tons in 1892). Nearly half the total weight of steel prepared in Rus-

## RECENTLY PATENTED INVENTIONS. Engineering.

**INCREASING CRANK THROW OF STEAM** ENGINES.-Henry I. Schanck, Holmdel, N. J. According to this improvement there are two cranks on the main shaft joined by a heavy wrist pin on which are two ec centrics, and on the outer end of the piston rod is a longitudinally channeled and slotted crosshead, there being a heart-shaped cam block in the channel, a transverse cam shaft fast in the cam block and loos in the slots of the crosshead, while there are guides for the crosshead, cranks on the ends of the cam shaft, rods between the cranks and the eccentric straps, and a main forked connecting rod. The improvement is more particularly applicable to high pressure, quick speed, horizontal and upright engines, and is designed to increase their efficiency.

SECTIONAL BOILER.-Harry A. R. Dietrich, South Bethlehem, Pa. This is an improvement on a former patented invention of the same inventor, the improved boiler being designed for steam or hot water heat ing, and particularly adapted for heating buildings by hot water circulation. A particular feature consists of a hollow bottom wall, affording an extended heating surface which receives heat from the ash pit and from a central heat conduit, and there are throttle gates so controlling the heat currents that increased absorption is secured for the water in the legs of the boiler sections. The main heat conduit and flue connections insure extended contact of the heat currents with water-heating surfaces, increasing the efficiency of the boiler and conducing to economy of fuel.

STEAM BOILER.-Harry H. Kelley, Elvria, Ohio. This boiler has a steam dram from which depends a shell containing a cylinder perforated at its lower end and adapted to receive the feed water, there being a specially constructed water circulating pipe exteriorly on the shell. The shell is made in sections. heads held on the end sections being connected with each other by stay bolts, the upper head opening into the bottom of the boiler, and the shell depending into the boiler furnace, while the cylinder is suspended within the shell from the lowermost head.

## Railway Appliances.

TIE PLATE.-Walter H. Wilson, New York City. This is a plate for preserving wooden ties by preventing checking, etc., and also preventing the rail from shearing or grinding the spike heads. The plate has on its upper surface a rail seat and its under side is concaved in a direction longitudinal with the rail seat, while there are cutting edges at the sides of the concave for entering the tie. The plate is of comparatively light weight, has spike holes, and the metal is upset in such a way that the plate may be quickly and securely applied and will embed itself in the tie. APPLYING HOSE TO COUPLINGS. -Peter Whyte, Meridian, Miss. For connecting air brake pipes this inventor has devised a simple and efficient apparatus for applying the screw clamps which fasten the hose sections to the nipples. Combined with a reciprocating hose clamp having tapered jaws fixed on yielding arms, whereby they are adapted to move toward or from each other laterally, is a tapered socket adapted to re ceive the jaws and close them upon a hose, with means for forcing the clampforward into the socket, and a device for holding the nipple.

device which, in connection with a rheostat, operates au-tomatically to maintain a constant voltage in the line, the other is pivoted to the shank, the cutting edges of screen. the arrangement being such that the rheostat may be operated by hand without interfering with the system. Combined with a regulator magnet and swinging armature is a circuit breaker actuated by the armature and comprising a slide plate on which is an insulated conducting block, while conducting springs secured to a stationary support are adapted to contact with the conducting plate. When the improvement is applied to the alternating system, the controller is connected to the station transformer and the current to operate the regulator magnets is taken from the exciter.

**REGISTERING MECHANISM FOR LIGHT** CIRCUITS .- William McNiell, Chicago, Ill., and James H. Tinder, Winchester, Ky. This is a positively acting mechanism for indicating the lamp hours to be charge to the consumer. Combined with a star wheel is a sliding swinging bar carrying pallets moving in right lines that are not parallel one with another, there being electro-magnetic mechanism for reciprocating the bar, and registering and carrying wheels and number disks.

CLOSED CONDUIT FOR RAILWAYS. Charles D. Tisdale, Boston, Mass. According to this invention the main conductor is inserted in a tube of flexible material, upon which is placed an auxiliary sectional conductor provided with contact pins extending through the walls of the tube in position to be brought into contact with the main conductor when the auxiliary conductor and the tube are compressed by the trolley carried by the car. It is designed in this way to facilitate making local connections with the main conductor, and avoid the dangers attending the use of an exposed main line

CAB SIGNAL FOR RAILWAYS.-Edgar C. Wiley, Bristol, Tenn. This is an improvement on a formerly patented invention of the same inventor, where an alarm bell on the locomotive has a local battery and circuit connections operated by induction through magnets along the roadbed. The present invention emplovs an ordinary make-and-break circuit bell, supplements the weakness of a relay operated by induction, and saves waste in the battery power for energizing the inducing magnets by a novel construction and arrange ment of circuits, batteries, and their connection with the various mechanical parts.

the bits being flush with one another, and the rear end of the pivoted bit section having a bevel engaged by a spring secured to the shank.

TYPE FOUNDING MACHINE.-Auguste Foucher, 71 Boulevard Voltaire, Paris, France. This is a machine to cast two types simultaneously, having two models and two finishing mechanisms, the moulds and their sprue breaking, body dressing and finishing mechanisms being arranged in sequence, but echeloned in different vertical planes, while the corresponding moving parts are rigidly coupled together to be moved simultaneously in the same directions. All parts of the machine may be overlooked by the operator, and two finished types are made at each cast instead of one. The invention is an improvement upon an invention patented in 1887.

### Miscellaneous.

ICE VELOCIPEDE. - Dan G. Bolton, Cooperstown, N. Y. The frame of this device is supported by single front and rear runners, to which it is connected by horizontal pivots, while a spiked propelling chain traveling along the under surface of the rear runner is driven from a pedal shaft by a spocket wheel mounted on the pivot connecting the runner with the frame. The runners are capable of sufficient rocking motion to permit passing over uneven ground, and the front runner is turned for steering purposes by a handle bar. The machine is designed to enable a rider to travel over snow and ice at a high rate of speed.

PRINTING ON GLASS, ETC.-Alfred Brookman, New York City. To give clean and distinct impressions of the designs without danger of breaking the articles printed upon, this inventor has devised an apparatus in which two beds having independent sliding ement may be separately actuated, a transfer pad be ing pivotally mounted on a slide arranged between the beds and adapted to be locked to either of them to slide therewith, while rollers journaled in stationary bearings contact with the transfer pad during the sliding move-ment. The rollers may, if desired, be employed for printing, in connection with the movable beds, without the pad, the rollers then having an air cushion, over which is canvas and a covering of printers' roller composition

Budd, New York City. For the production of signs, letters, and ornamental designs on glass or enameled of the cheek pieces. surfaces by acid or sand blast processes, this inventor has devised an improved method of producing and applying the necessary protective coating, which consists of an adhesive powdered and fibrous material. A roller covered with printers' roller composition is employed to apply the coating, the design on a block of plate being first inked with a varnish and picked up by the roller for transfer to the surface to be coated, and the coating thus transferred being dusted with the finishing covering toenableit to resist the acid or sand blast. The improved method is designed to give better results, and at a lower cost than the processes heretofore followed. COAL SCREEN.-George W. Cross, Pittston, Pa. This screen is particularly adapted for picking or separating slate from the coal, and is made of series of segments or sections having longitudinal alternate troughs and ribs, the walls of the ribs converging at their upper edges and the troughs having in their bottoms slotted perforations. Both the troughs and the ribs diminish toward the lower end of the segments, meeting near the lower end a flat slotted surface from

OPEN GRATE HEATER.-John Lawlor, Brooklyn, N. Y. This improvement may be used in connection with an ordinary open fireplace, and may also be readily employed as a portable heater. It provides for thoroughly ventilating a room, relieving it of heavy and impure air, insuring a uniform, perfect draught and com-plete combustion, without the use of a blower, while preventing the heat and smoke from escaping directly into the chimney flue. When used independently of an open fireplace, a heater casing is employed, adapted to rest on the floor or hearth, when convenient connection may be had with the smoke flue.

DOOR HANGER.-Theodore C. Prouty, St. Joseph, Mich. This invention relates more particularly to double track hangers for sliding doors, providing for such service a cheap and durable ball-bearing hanger, to be struck up from sheet metal. The hanger may be used in connection with the ordinary double-way wood tracks, and the carriage is adjustably connected to the door to receive a shaft centrally mounted on two rows of bearing balls, one on each side of its middle, the two ends of the shaft receiving the supporting wheels. The hanger is adjustably connected to the door to permit of properly placing the door vertically with relation to the supporting track.

WAGON BRAKE.-James W. Brubaker, Tracy, Iowa. The back pressure on the pole as the wagon descends a grade, according to the improvement patented by this inventor, operates to draw forward a connecting rod and forcibly set the brakes, but the wagon may be backed without setting the brakes on setting a simple form of brake latch. The brake bar is normally held set by a spring when the wagon is at a standstill, in opposition to which the draught devices act when the draught is on, and in conjunction therewith when the draught strain is off, so that the greater the back pressure, with a heavy load, the harder will the brake be applied.

HALTER.-Edward P. Waters, Roseville, Ill. This halter is very similar to the ordinary five-ring halter, but is inexpensively made, substantially of a single piece, doubled upon itself to form a nose band, extended in opposite directions through a ring and formed into chin pieces, doubled to form cheek pieces and its ends overlapped to form a crown piece, the ends DECORATING GLASS, ETC.-James being made fast to the chin pieces and the cheek pieces at their junctions, bit rings being held in the lower ends

## Electrical.

VOLTAGE REGULATOR FOR DYNAMOS. -Malcom P. Ryder, New York City. This is a simple | parts are arranged on opposite sides of and inclosing the | which is projected a slotted flange. Flat or slab coal | ments on the outer and inner faces of the extensions

## Mining.

SETTLING TANK.-Daniel W. Fall, Frank B. Wineland, and Samuel L. Richards, Breckenridge, Col. This tank has partitions for classifying the slimes in the treatment of ores, and an agitating fan or wheel creating within the tank a regulated current forcing the floating slimes to travel over all of the partitions and to one end of the tank. It also has a valve to control the discharge of sand and water, the force of which is used to drive the fan or wheel. A second tank receives the floating slimes beneath the surface of the water, a part sinking to the bottom, and the tank having an overflow chute so arranged that only a fluid will pass.

## Mechanical.

WELL 'DRILL,-Charlie M. Lindholm Rancho, Texas. This invention relates to deep well sinking apparatus, providing a drill arranged to automatically expand in the bottom of the well below the tabing, cutting a hole large enough for the tubing without requiring a second drilling or reaming. Two bit

FIRE ALARM. - John P. Williams, South Pittsburg, Tenn. The alarm mechanism devised by this inventor comprises a main wire passed through the several rooms of a building and having a series of fusible joints, alarm bells being connected with the wire, which has weights or tension devices at each end. When the wires separate, the sections are drawn outward and the bells connected are operated. Supplemen tal portions are provided with loop sections and pivoted tripper devices to normally hold the bells from ringing, and, where the devices are used in a large building, one end of each of the wires preferably leads to an indicator in the office, to locate the floor on which the fire occurs.

HOTEL REGISTER.-David F. Riegle. Portland, Oregon. As an improved article of manufac-ture this register has its covers provided, beyond the leaves, with separable hinged extensions containing transparently covered advertising panels, the arrangementbeing such that when the book is filled and filed away the extension may be severed from it. Advertiseare prominently displayed, whether the book is closed or front and slotted to allow for the swing or revolution of open

TRUNK. - William S. Foster, Dallas. Wis. The shell of this trunk is cylindrical, and has rims, so that the closed trunk may be conveniently rolled about on the floor or ground. Mounted to turn in the shell is a cylindrical compartment box with partitions at right angles to each other, the partitions forming two sets of compartments, one set provided with lids and the other with straps. The shell is made in two hinged sections, and when these are opened one half of the com partment box is disclosed. By turning this box on its trunnions all of the compartments are successively brought to the top, as required, for packing or removing goods.

BAG.-William H. Field, Port Chester, N.Y. A strong and very cheap bag is made by this inventor, for carrying coal, etc., by forming the bag with a double bottom and relatively light sides, flat handles on the sides at the top connecting with the double bot-tom in such way that the bag will withstand the strain and may be easily carried.

DISPENSING LIQUORS, ETC. - James Tomlinson, Granby, Canada. This is an apparatus for registering the amount sold, and consists of reservoirs in a case, each having a discharge pipe terminating in a faucet provided with a filter, induction pipes being graduated to show the level of the liquor in the reservoir. Tell-tale tubes connected with the faucets are curved at their upper ends and provided with cups for receiving any liquor that may be forced out of the pipes. The invention covers three forms of register, one for the drachm or glass only, one for wine measure only, and one combining both the drachm and wine measure scales

BOTTLING MACHINE.—August Werner, Brooklyn, N. Y. Connected with the storage cask are a liquid supply pipe and a gas supply pipe, while a bottle-filling valve of especial construction is connected with the bottle, the liquid supply pipe, and the gas supply pipe, in such manner that on first opening the valve plug the gas passes into the bottle to drive out the air and on further opening the valve the air escape is cut off and the bottle filled with the liquid, the gas in the bottle receding to the storage cask. The machine is comparatively simple and fills beer and other liquids into sterilized bottles without waste and so that the beer will retain its valuable properties without danger of , spoiling

ICE SHAVER AND PICK.-William M. Seaman, Goldman Landing, La. This shaver comprises a casing having a slotted bottom, a cutter projecting an adjusted distance through the slot, and a hinged cover having on its pivot end an extension within the casing, to push the accumulated ice forward on opening the lid. The casing forms a handle for a pick of the ordinary kind, which is removably secured to the casing by a wing nut.

ICE CREAM FREEZER. - Edward L. Weston, Washington, D. C. Two or more kinds of cr am can be frozen at once in this freezer, with no greater labor than that of freezing one kind in an ordinary freezer. Independent freezers or cylinders are located in a single tube, surrounded by the necessary ice, and the handle shafts are journaled in a shaft frame, the shafts being geared and a detachable coupling employed by which the sections may be locked together or freed to move independently.

GARMENT FITTING PATTERN.-Simon Christiansen, New York City. Two patents have been granted this inventor under this title, both showing improvements upon a former patented invention of the same inventor. One patent provides a plate of flexible material, with angular edge, the plate having a border incision to form a flexible edge strip connected at one end only, tabs connected to the strip to be adjusted toward and from the plate, while other tabs are also adjustably secured to the plate and carry a flexible marginal strip. According to the other patent the pattern plate has an edge with angular outline, and pivotally secured to its outer edge is a series of independent articulated links extending outwardly, each consisting of a plurality of pivotally connected members, a flexible strip being connected with the outer ends of the outer members, whereby any portion of the strip may be moved toward or from the plate. The improvement is designed to facilitate taking correct measures, and enable the operator to at once cut the material from the pattern.

SLEEVE PATTERN.—This is a further patent of the same inventor for an improvement facilitating the taking of the proper measure of the arm and the convenient cutting of the material into upper and under sleeve parts. The pattern comprises a series of sections in sets of two pivotally connected by links, and also pivotally connected with each other, a rod engaging 13. The Temple of Neptune at Paestum. the several pivotal connections, while a second rod 14. Miscellaneous Contents : Mahogany pavement .- Pro- chamber is removed and water allowed to escape. When held onione of the pattern sections has a sliding connection with the first rod. No especial skill is required

a knife, spring actuated, but held normally stationary

by a trigger, below which is a tilting platform adapted to be depressed by the weight of the animal. On the depression of the platform the trigger is disengaged and the knife swings around, the trigger being then again in position to engage its shank, while the knife kills the animal and sweeps him from the platform during its revolution.

GAME APPARATUS. - William A Barnes, New York City. This is an apparatus for use in connection with billiard, pool, or bagatelle tables. The balls are set up on the table in substantially circular arrangement, and then inclosed by a ring of tissue paper or similar mat rial and covered by a piece of card-board, or other substance, that the numbers on the different balls may not be seen. With the impact of the cue ball the paper envelope is broken and the balls scattered over the table, and if any drop into a pocket, the player holding a similarly numbered small ball, of those previously distributed, wins the game.

DOLL. - Frederick B. Schultz, New York City. This is an improvement in jointed dolls previously patented by the same inventor, the present invention providing a doll in which the articulated members can be readily turned without danger of breaking or dislocating the jointed parts. The parts are joined by ball and socket joints, and an individual chain is used for each articulated member, each chain being provided with yielding devices to permit of exerting pulls on the parts of the members, and also permit of turning them.

Norre.-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

# SCIENTIFIC AMERICAN BUILDING EDITION OCTOBER, 1894.-(No. 108.)

TABLE OF CONTENTS.

1. Elegant plate in colors showing a Colonial residence at Plainfield, N. J., recently erected for B. A. Hegeman, Jr. Two perspective elevations and floor plans, also an interior view. Cost \$6,000. A pic turesque design. Mr. Frank W. Beall, architect, New York City.

- 2. Plate in colors showing a very attractive stone dwelling recently erected for H. J. Peet, Esq., at Buena Park, Ill. Two perspective elevations and floor plans. A pleasing design. Mr. J. L. Silsby, archi tect, Chicago, Ill.
- 3. A dwelling at Bridgeport, Conn., recently erected for Frank Fowler, Esq, Two perspective elevations and floor plans. Cost complete \$5,600. Mr. A. H. Beers. architect, Bridgeport, Conn.
- 4. A cottage at Stratford, Conn., recently completed for Robert Wheeler, Esq. Perspective elevation and floor plan. A unique design presenting pleas-ing elevations and a well arranged plan. Cost \$6,200 complete. Mr. Edgar Osborne, builder Stratford, Conn.
- The residence at Belle Haven, Conn., recently completed for J. E. Kent, Esq. An attractive design in the modern Colonial style. Two perspective elevations and floor plans. Cost \$6,850 complete. Messrs. Rossiter & Wright, architects, New York City.
- 6. A Colonial double house recently completed at Bayonne City, N. J. Perspective elevation and floor plans. Cost \$4,800. Mr. Arthur C. Longyear, architect, New York City.
- 7. A dwelling at Bensonhurst, L. I., recently erected for John P. Jepson, Esq. An excellent example for a suburban home. Two perspective elevations
- 8. A dwelling at Flatbush, L. I., recently completed for
- 9.
- 10.
- 11.
- 12. Roman remains at Bath. England.

# Business and Personal.

Scientific American.

The charge for Insertion under this head is One Dollar a line for each insertion : about eight words to a line. Adver. soments must be received at publication office as early as Thursday morning to appear in the following week's issue

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HINTS TO CORRESPONDENTS.
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(6263) J. D. F. says : Please tell me how to color old gun barrels where the color has worn off. Want blue and brown. A. Bluing barrels.—The bluing of gun barrels is effected by heating evenly in a muffie until the desired blue color is raised, the barrel being first made clean and bright with emery cloth, leaving no marks of grease or dirt upon the metal when the bluingtakes place, and then allow to cool in the air. It requires considerable experience to obtain an even clear blue. Browning guns .- The following recipe for browning is from the United States Ordnance Manual: Spirits and noor plans. Cost \$5,620 complete, ready for occupancy. Mr. William H. Mersereau, architect, New York Cify.
A dwelling at Flatbush, L. I., recently completed for plans. Messer. J.-C. Gauly at Flatbush, L. I., recently completed for plans. Messer. J.-C. Gauly & Co., architects, New York Cify.
A small Colonial cottage at Bayonne City, N. J. Perspective elevations and floor plans. Cost completed for letters, etc., I. C. Gould.
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A small Colonial cottage at Bayonne City, N. J. Perspective elevation and floor plan. Cost completed for letters, etc., I. C. Gould.
A residence at Pompton, N. J., built for Wm. F. Hall, Esq. Cost, \$7,500. A good example of an alt-be-grarround residence.
The new Protestant Cathedral at Berlin, Germany, costing \$2,400,000. Designed by Prof. Julian Raschoff.
Roman remains at Bath, England.
The Temple of Neptone at Pasetm.
Miscellaneous Contents : Mahogany pavement.—Proportion in architecture.—The architect who never exceeded estinates.—Some difference between the Banglish and American Jhumbers.—Decay of stome ry hard, as though it was train that conduction, the value on operating the chamber is in that conduction, the value on operating the chamber is in that conduction the value on operating the chamber is in that conduction the value in operating south water that is accred by the water under pressure. When the water has a barbored by the water under for letters, etc., I. C. Gould.
Costing \$2,400,000. Designed by Prof. Julian Raschoff.
Roman remains at Bath, England.
Miscellaneous Contents : Mahogany pavement.—Proportion in architecture.—The architect who never and the acases the chamber is in that condition, the value in the aris chamber is absorbed by the water under pressure. When the water has a barbord by the water under the storage of th of wine, 11/2 ounce; tincture of iron, 11/2 ounce; corrosive sublimate, 11/2 ounce; sweet spirits of niter, 11/2 ounce;

non-elastic produces a sharp concussion of the valve as observed. The air chamber should have an air cock at heater, illustrated .-- The Poppert patent improved | the bottom to let out the water and allow air to draw in when the air in the chamber has been absorbed. 2. Can I make an earth battery in the following manner. First dig a deep trench in moist earth, then stand a copper plate  $4 \times 4$  feet upright in one end of the trench, then a zinc plate. same size, a short distance from the copper, and so on, copper and zinc alternately. indefinitely; the space between the plates to be filled with moist earth ? Would the current become stronger if salt deposits were 25 cents. Forty large quarto pages, equal to about made between the sheets of metals? A. This will make two hundred ordinary book pages; forming, practi-tan earth battery if you connect all your zincs together an earth battery if you connect all your zincs together and all your copper plates together. No zinc and cop-TURE, richly adorned with elegant plates in colors and p r must touch. The battery will be very feeble, and will if used soon polarize. No reliable calculation of its power in watts can be given. Salt water poured on the surface would increase the power. (6265) J. M. S. asks if there is any way of prolonging the life of a fish 20 or 24 hours in a small quantity of water sufficient to cover them in a bucket. If the matter consumed by them to retain life could be artificially supplied, and if so how? A. Fish

may live for several days in a very small quantity of water if it is aerated sufficiently to keep up the supply of air drawn from the water by the fish. A small tube reaching to the bottom of the pail and air blown into the water by a bellows for a few minutes, every few hours is all that is necessary. A very little food only is required, so as not to contaminate the water by the dissolved food.

## TO INVENTORS,

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## October 2, 1894,

AND EACH BEARING THAT DATE.

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# of this paper.

in using the pattern to obtain simultaneously the proper shape of both the upper and under sleeve parts.

UNDER COAT SLEEVE HOLDER. James Hoffman, New York City. This is a device for holding a coat sleeve close to the cuff while an overcoat is being put on, preventing the sleeve of the under coat from slipping upward. It consists of a curved body plate having one end upturned to form a hook, an elastic with double loops being fastened to the plate. The device is quickly applied and may be folded to occupy but little space in the pocket.

ANIMAL TRAP.-John Ross, Halifax, Canada. This is practically a double trap, and has pro- Edition is issued monthly. \$2.50 a year. Single copies, vision for holding animals at each end. It has doors on its upper side near the ends, and downwardly inclined gates beneath the doors, in connection with tubular end. sections in which are sliding pistons to forcibly eject animals through the doors. There are trap doors in the top, upon which tilting platforms mounted on the top of the box deliver, a bait rod sustaining bait near the platforms.

ANIMAL TRAP. - Charles A. Snow, Lime Springs, Iowa. This trap when sprung actuates a | of any Architectural Publication in the world. Sold by knife which kills the animal, the trap afterwardresetting all newsdealers. itself: It is made with a cylindrical case, cut away in

etc., illustrated, -Double tenoning by machinery.-Transparent bricks for hothouses. -The Capital weight sliding blinds, illustrated.-The new decoration in the apse of St. Paul's .- Preparing walls for papering .- An improved carpenter's clamp, illustrated.-An improved sanitary appliance, illustrated .- Hughes' improved drawing table, illustrated.-Helping the deaf to hear, illustrated. The Scientific American Architects and Builders cally, a large and splendid MAGAZINE OF ARCHITECwith fine engravings, illustrating the most interesting xamples of Modern Architectural Construction and allied subjects.

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