this inventor has devised an instrument with curved spring jaws connected with shear-like blades, the jaws meeting only after the blades have made their complete cu

DESIGN FOR A BELT POCKET.-Richard S. Porro, New York City. This design has a shield-tike portion near the top of which is a spring tongue, while below it is a circular figure on the front of the shield.

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

The New York Observer, the first religious newspaper established in New York City, and for nearly three-quarters of a century a recognized exponent of the best thought of the Presbyterian Church, comes to us this week in new form, and, instead of being a huge blanket sheet, its pages are of the small quarto form now becoming more popular, and so much more convenient for reading and reference. The paper was established by Sidney E. and Richard C. Morse, in 1823, and in 1840 Rev. S. Irengus Prime became its editor. with whom was afterward associated his brother Rev. E. D. G. Prime. The present editors are a son and son-in-law of S. Irenæus Prime-Wendell Prime and Charles A. Stoddard. The Observer has always had in its service writers whose attainments were of the highest order in all religious and theological fields, and one of the members of its business department, Mr. T. H. Cuthell, has been with the paper more than half a century. The change of form will cause no change in the purpose and spirit of the paper

# SCIENTIFIC AMERICAN BUILDING EDITION

OCTOBER, 1894.-(No. 108.)

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- 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.
- Plate in colors showing a very attractive stone dwell-ing recently erected for H. J. Peet, Esq., at Buena Park, Ill. Two perspective elevations and floor plans. A pleasing design. Mr. J. L. Silsby, architect, Chicago, Ill.
- 8. 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 pleasing elevations and a well arranged plan. Cost \$6,200 complete. Mr. Edgar Osborne, builder, Stratford, Conn.
- 5. 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
- 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 and floor plans. Cost \$5,620 complete, ready for occupancy. Mr. William H. Mersereau, architect New York City.
  8. A dwelling at Flatbush, L. I., recently completed for
- Richard Ficken. Esq. A design in the Colonial style. Two perspective elevations and floor plans. Messrs. J. C. Cady & Co., architects, New York
- 9. A small Colonial cottage at Bayonne City, N. J. Perspective elevation and floor plan. Cost complete, \$2,800. Mr. Arthur C. Longyear, architect, New York City.
- 10. A residence at Pompton, N. J., built for Wm. F. Hall, Esq. Cost, \$7,500. A good example of an all-the-year-round residence.
- 11. The new Protestant Cathedral at Berlin, Germany, costing \$2,400,000. Designed by Prof. Julius Raschdoff.
- 12. Roman remains at Bath, England
- 13. The Temple of Neptune at Paestum
- 14. Miscellaneous Contents: Mahogany pavement.-Proportion in architecture.—The architect who never exceeded estimates.—Some difference between the English and American plumbers.—Decay of stone.—Wood water main.—Artificial marble.— Art mouldings, illustrated .- Snow guards for roofs, etc., illustrated.—Double tenoning by machinery.— Transparent bricks for hothouses.-The Capital heater, illustrated.—The Poppert patent improved weight sliding blinds, illustrated.-The new decoration in the apse of St. Paul's.-Preparing walls An improved carpenter's clamp, illustrated.-An improved sanitary appliance, illustrated.-Hughes' improved drawing table, illustrated.—Helping the deaf to hear, illustrated.

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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.

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Minerals sent for examination should be distinctly marked or labeled.

(6271) A. E. E., Brunswick, Ga. writes: Inclosed find a sample of a substance which fell from thesky, and which I am told is called "balloon spider's web." It fell in great abundance at four o'clock in the afternoon of September 20, 1892, at Gainsville, Fla., coming form a westerly direction after a series of light showers. I have shown the substance to a number of people in two or three of the Southern States, and while it excited considerable curiosity, no one was able to give me any information concerning it. I am told that the same thing has occurred in Russia and other parts of Europe. Will you kindly enlighten me on this subject or give me the technical name of the same, that I may inform myself 9 A. The substance received was a white silky fibrous material, very soft to the touch. Dr. L. O. Howard, Entomologist. Department of Agriculture, to whom were ferred the matter, says: The substance is, in all probability, spider silk. The falling of this silk in such abundance in the vicinity of Gainsville, File., in the third week of of the false scorpions (Chelifer cancroides, L.) Thi September, 1892, attracted considerable attention at the species is often found on thelegs of flies and of other in time, and samples were received at the department from several residents of Gainsville and Arredondo. The mat-feeding upon the red mite, Astoma (Trombidium) mus ter was carefully investigated by Dr. George Marx, the carum, Riley, which is so frequently attached to the com well known authority on spiders, who in a communication mon house fly. The Chelifer is not uncommon about read before the Entomological Society of Washington old books and in dark places, where it feeds on mite November 3, 1892, published in Volume II. of the Pro- and book lice (Psocus spp.) The female carries her egg ceedings, pp. 385-8, gave it as his conclusion that the in a little bunch under the abdomen.-C. V. R. substance was composed of the matted together webs or threads of gossamerspiders, which sail through the air in such numbers in the sunny days of early autumn. Careful chemical and microscopical examinations confirmed this theory.

(6272) W. C. V., Iowa, writes: Is there an observatory in United States whose latitude and longitude is so accurately known, and whose clock has the time sufficiently correct, and whose telescope is mounted with such accuracy in all its circles and bearings, that the telescope can be set at an altitude and azimuth according to astronomical computations, so that the planet Jupiter will appear in the field at the tick of the clock? Are therecomputations 200 years old or more, that are sufficiently correct to enable the performing of the above feat? A. Yes: every well regulated working observatory in the United States and other countries can set it transit for a computed entrance of a star or planet into the field. Many of the best equipped observatories can also set their equatorially mounted telescopes to cover celestial objects for the past 150 years, which with the quickly absorb the water wasted, and from leakage present observation have well established the position the valve.

and perturbation of all the members of the solar system and the position and changes for many thousands of the starry host.

(6273) E. A. T. asks: 1. What is the voltage of motor 641 wound for dynamo with No. 20 wire? A. We have no record of the factors, and do not recommend the motor as a dynamo. 2. Will small plating dynamo described in Supplement, No. 720, give trouble by heating? A. No. 3. Are toothed washer armatures better than plain washers? A. Each has its own good points; one cannot be pronounced better than the other.

(6274) E. H. writes: 1. I have a small Wimshurst influence electric machine and am much troubled with the plates breaking. They start in the middle and the crack extends until the plate comes in half. They are cemented on to wheels in the center of Universal drawing tables and steel ribbed drawing the plate. Can I stop it in any way, and if not is there oards. Just out. Morse Machine Co., Rochester, N. Y. any other cheap substance that I could use instead of glass. Would hard rubber do? The plates are ten minute. Allsizesin stock. Irvin Van Wie, Syracuse, N.Y. inches across. A. Possibly the crack is started in your plates by the heat used in cementing. They should not act as you describe. Ebonite will answer instead of glass. 2. Could you tell me of any paint that would do to cover the glass in making Leyden jars instead of tin Split Pulleys at Low prices, and of same stren thand foil? A. No. Metallic bronze powder might answer, appearance as Whole Pulleys. Yocom & Son's Shafting but would be very inferior if put on with varnish. 3. Could you light a small incandescent lamp, say 1, 2, or 3

(6275) A. M. F. writes: 1. If two insulated points (copper or other metal) are 1/2 inch apart will a current actuated by a potential of 10,000 volts jump across. A. No. 2. If two points, insulated, are inclosed in a vacuum, and connection is made by quicksilver flowing over the two points, what action will a 10,000 volt current have on the quicksilver? Or, in other words, can quicksilver, under these conditions, be used to com-For the original Bogardus Universal Eccentric Mill, plete circuit? A. There is no such thing as a 10,000 volt or any other volt current. Voltage is a measure of potential, not of current. Quicksilver will conduct a current very well, although it is of rather high resistance.

> (6276) N. M. B. asks: 1. In making armature for motor described in "Experimental Science," can I with advantage use a section of an iron pipe 21/4 inches internal diameter, 2 inches long, and iron \$6 inch thick, instead of wire armature? A. No; it is inferior to wire. 2. Is there any convenient and reliable test for genuine amber? A. Hardlyany can be given; its specific gravity 1 065 to 1 081, hardness 2 to 2%, and its resistance to heat, fusing imperfectly at 550° Fah., are criteria. 3. Does the Scientific American Supplement treat subjects more in detail than the Scientific American? A. The articles in the SUPPLEMENT are longer as a rule, and hence perhaps go more into detail. The SCIENTIFIC AMERICAN SUPPLEMENT represents the scientific life of the world in all departments better than any other publication known to us, and is an invaluable companion to the SCIENTIFIC AMERICAN.

(6277) J. N. T. asks: 1. Will No. 19 American gauge iron wire do for core of armature? A. Yes. 2. You state in body of article that No. 18 American gauge magnet wire is to be used on armature and in summary No. 16. Which is correct? A. Use No. 18 wire for the armature colls. 3. In your diagram you show that coils on field magnet are wound in shape of a pyramid. Must it be wound with one convolution less in each layer or must it be wound same as directions for armature? A. Our diagram shows the preferable way of winding the magnets. The pyramidal winding is no ssential—it is convenient. 4. Can you tell me how to make a plunge battery to run the motor? A. See our SUPPLEMENT, No. 792. 5. Will a gravity battery run its A. Not unless of very large size. We do not recommend it. 6. I have inspected a number of stove pipes made of galvanized iron, and in a number of cases I have noticed a deposit has run down the outside that has a brownish yellow cast. Can you please inform me what it is? Is it creosote from the smoke? A. We think it is largely em pyreumatical matter (creosote, etc.)

(6278) G. P. McD. asks: Is there any hard non-conducting material that will stand the heat of an electric arc without burning for about 2 minutes? A Lime, zirconia or magnesia approaches your require

(6279) W. B. H.—False Scorpion on a House Fly.—The small brown A thropod, with flattene abdomen, and lengthened maxillary palpi, ending like lobster's or scorpion's claws, and which fell from a hous fly which Mr. W. B. Halsey, of Brooklyn, caught, is one sects, allowing itself thus to be transported and perhap

(6280) F. J. M. says: In what wart of bivalves are pearls found? I mean whether they ar situated inside of the body of the pearl oyster, or outside between the body and the shell. A. It is believed has most pearls are formed by the intrusion of some ford; substance between the mantle of the mollusk and shell, which, becoming a source of irritation, determine the deposition of nacreous matter in concentric layer until the substance is completely encysted.-Encycle pedia Britannica.

(6281) W. D. S. asks: Is there any trouble experienced with fire hydrants from freezing And if so, what is the cause? Is it from difficulty getting rid of the water in the hydrant after it is shut of from below? A. When fire hydrants are properly se with a cesspool and waste for draining the hydrant when closed, there should be no trouble from freezing. If the waste hole is not provided, or gets stopped, the hydrar will remain full of water, and will freeze solid in cold of this work have won for it the LARGEST CIRCULATION the position of celestial objects within their field. Ac- weather. In cold climates the valve of a hydrant should of any Architectural Publication in the world. Sold by curate observations have been made on the positions of be 5 feet below the surface, with a pit sufficiently large to

#### Communications Received.

"On the Sun." By T. B. Joseph. "Theory of the Cause of Solar and Planetary Rotations." By I. E. C.

"The Eucalyptus." By J. F. J.

#### TO INVENTORS.

An experience of nearly fifty years, and the preparation of more than one hundred thousand applications for patents at home and abroad, enable us to understand the laws and practice on both continents, and to possess unequaled facilities for procuring patents everywhere. A synopsis of the patent laws of the United States and all foreign countries may be had on application, and persons contemplating the securing of patents, either at homeor abroad, are invited to write to this office for prices which are low, in accordance with the times and our ex-MUNN & CO., office Scientific American, 361 Broadway, New York.

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For which Letters Patent of the United States were Granted

October 16, 1894,

## AND EACH BEARING THAT DATE.

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| ts es rs or y ? in et | Cut-cout, multiple safety J. F. McLaughlin   |
| ts es rs o-           | Cut-out, multi-ple safety J. F. McLaughlin 527,551 Cutter. See Genr cutter. Cutter. See Genr cutter. Cutter head for woodworking machines, E. G. Blaney, T. See Genr cutter. Cutter or trimmer for wood, leather, etc., J. A. Hess. 527,663 Dental tool, J. G. Hollingsworth. 527,663 Dental tool, J. G. Hollingsworth. 527,663 Dental tool, J. G. Hollingsworth. 527,683 Door closer, Fraylty, M. R. Hubbell. 527,585 Door closer, graylty, M. R. Hubbell. 527,585 Door oloser, graylty, M. R. Hubbell. 527,585 Door operating device, juil cell, C. A. Krutsch. 527,589 Door operating device, juil cell, C. A. Krutsch. 527,585 Dougly moulding and dividing machine, Althans & Ruckstinat. Drawing rolls for fibrous material, W. Hinchliffe. 527,554 Drawing rolls for fibrous material, W. Hinchliffe. 527,555 Drawing rolls for fibrous material, w. Hinchliffe. 527,556 Drawing rolls for fibrous material, w. G. See Ciothes drier. Drill. See Rock drill. Drilling machine, J. Sullivan, Jr. 527,462 Earring, C. Babcock. 527,348 Electric cable, T. J. Dewees. 527,446 Electric aconductors, weather protecting covering for E. J. Houston. 527,486 Elevator See Hay elevator. Elevator spearatus, C. W. Hunt. 527,466 Engine. See Gas engine.  |
| ts es rs o-           | Cut-out, nultiple safety J. F. McLaughlin Cutter. See Gear cutter. Cutter head for woodworking machines, E. G. Blancy J. T. See Gear cutter. Cutter of trimmer for wood, leather, etc., J. A. Herry J. G. Hollingsworth. Deak inon, F. D. Chase.  S27,693 Deck iron, F. D. Chase.  S27,693 Device for tradesmen's user, F. L. Bristol.  S27,693 Device for tradesmen's user, F. L. Bristol.  S27,693 Door check or closer, E. I. Bright. Door closer, Fraytly M. R. Hubbell. Door closer, Fraytly M. R. Hubbell. Door operating device, juit cell, C. A. Krutsch.  S27,753 Dought for fibrous material, W. Hinchliffe. Drawing rolls for fibrous material, W. Hinchliffe. Drawing rolls for fibrous material, W. Hinchliffe. Drewell or other structures, meansfor supporting. Drik. See Rock drill. Drill. See Rock drill. Drill. See Rock drill. Drilling machine, J. Sullivan, Jr.  S27,462 Electric cable, T. J. Dewees.  S27,464 Electric cable, T. J. Dewees.  Electric alconductors, weather protecting cover- ing for, E. J. Houstors, W. Hunt. Electric machine, dynamo, E. Faweet.  S27,495 Elevator See Hay glevator. Elevator spearatus, C. W. Hunt.  S27,496 Elevator door operating device, E. O. Church.  S27,496 Elevator spearatus, W. Hinchlife. S27,496 Elevator spearatus, W. Hunt. S27,496 Elevator spearatus, C. W. Hunt. S27,496 Elevator spearatus, W. Hinchlife. S27,496 Elevator spearatus, W. Hinchlife. S27,496 Elevator see Hay glevator.   |