New fork, N. Y. The intention of these inventors is to provide a price-tag for merchandise which is simple in construction, cheap to manufacture, easily applied, and arranged to prevent injury to the merchandise, especially when using the tag on handkerchiefs, lace goods, and like frail articles.

BOTTLE-CAP.—A. L. BERNARDIN, Evansville, Ind. The improvement relates to that class of caps which are made of hard metal and comprise an inner corrugated section to screw on the bottle-neck and an outer unthreaded section which is held to and from rotary movement upon the inner threaded section; and relates to the construction of the cap with the inner and outer sections fitted together, the inner being rather a tight fit within the outer shell, so that when the inner shell is pressed into the outer the latter will be held to and from rotary movement upon the inner threaded section.

TROUSERS-PRESS.—E. GRAHAM, Orangeburg, S. C. In this apparatus legs of trousers are creased and pressed without the aid of a hot iron. It is an improvement upon a former device for which Mr. Graham obtained Letters Patent. The present invention relates particularly to means for hinging the two frames together and providing for vertical adjustment of the upper one relative to the lower for the purpose of adapting the apparatus for pressing trousers of varying thickness or pressing two or more simultaneously.

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. 5575.**—For a machine for preparing Spanish moss to be used in stuffing furniture and mattresses, instead of hair.

AUTOS.—Duryea Power Co., Reading, Pa.

**Inquiry No. 5576.**—For the present address of the Farmers Mfg. Co.

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

**Inquiry No. 5577.**—For machinery for extracting turpentine from pine stumps.

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

**Inquiry No. 5578.**—For makers of small German silver spring wire.

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

**Inquiry No. 5579.**—For manufacturers of oil-making machinery.

American inventions negotiated in Europe. Wenzel & Hamburger. Equitable Building, Berlin, Germany.

**Inquiry No. 5580.**—For makers of machinery patented by M. M. Lyall, for making seamless bags.

Patent rights for driving chain for sale. German invention. Fully protected in America. Address inquiries to J. J. Kirberg, 114 Broadway, Paterson, N. J.

**Inquiry No. 5581.**—For parties to manufacture a display card for lace trimmings, dress goods, etc.

The largest manufacturer in the world of merry-go-rounds, shooting galleries and hand organs. For prices and terms write to C. W. Parker, Abilene, Kan.

**Inquiry No. 5582.**—For makers of a dust protector for the eyes and nose.

We manufacture anything in metal. Patented articles, metal stamping, dies, screw mach. work, etc., Metal Novelty Works, 43 Canal Street, Chicago.

**Inquiry No. 5583.**—For information regarding the lockout system in telephones.

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. 5584.**—For parties dealing in the seeds of catalpa trees or the trees themselves.

Partners for Foreign Patents Wanted.—Incubator-brooder, a money-making combination. Entirely new principle. Half interest. Chas. H. Sperle, Bound Brook, New Jersey.

**Inquiry No. 5585.**—For manufacturers of steel collar springs.

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

**Inquiry No. 5586.**—For manufacturers of a pocket lighter or lamp, shaped like a pencil.

**Inquiry No. 5587.**—For manufacturers of souvenir novelties made from photos.

**Inquiry No. 5588.**—For makers of glass bottles with a cork and metal screw top.

**Inquiry No. 5589.**—For manufacturers of punches and dies for lamp burners.

**Inquiry No. 5590.**—For the manufacturers of the "Gem Egg Separator."

**Inquiry No. 5591.**—For the manufacturers of Cole's patent geared crank lift for drop stamp.

**Inquiry No. 5592.**—For a gun for testing the breech pressure of gunpowder.

**Inquiry No. 5593.**—For manufacturers of coin-counting and wrapping machines.

**Inquiry No. 5594.**—For an apparatus for heating furnaces with liquid fuel.

**Inquiry No. 5595.**—For a brass, nickel or aluminium case, constructed similar to a match box, opening near top of case, but must be a trifle larger than a match safe, about 3 inches long, 2 inches wide and ¾ inch through.

**Inquiry No. 5596.**—For parties engaged in metal stamping and forming, cut with dies.

**Inquiry No. 5597.**—For machines for weaving hats of straw or palm leaves.

**Inquiry No. 5598.**—For a small rock crusher

**Inquiry No. 5599.**—For manufacturers of leather satchels, such as upholstered tool bags, 20 inches long.


### HINTS TO CORRESPONDENTS.

**Names and Address** must accompany all letters or no attention will be paid thereto. This is for our information and not for publication.
**References** to former articles or answers should give date of paper and page or number of question.
**Inquiries** not answered in reasonable time should be repeated; correspondents will bear in mind that some answers require not a little research, and, though we endeavor to reply to all either by letter or in this department, each must take his turn.
**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.

(9401) E. G. says: I am perplexed with the following problems, and so take advantage of your notes and query column. 1. In photo-trichromatic printing: (a) Kindly explain what Koenig's diagrams (corrected by Capt. Abney) of the three primary color sensations really try to show. How are the curves constructed? (b) Images that we look at are formed inverted on the retina. How is it then, that we see them correctly? A. We have not at hand any description of Koenig's "Diagram Corrected by Captain Abney, of the Three Primary Color Sensations," and so are unable to give you the information concerning it which you ask. (b) It is true, as you say, that the images formed upon the retina in the eye are inverted with reference to the objects from which they are derived, but no person has ever come to the knowledge of that fact except by instruction. He could never have found it out by himself alone, from his own sensations or experience. The explanation commonly given to this curious phenomenon is that we are conscious of our own erect attitude and call the directions up and down as they seem to us, and therefore we consider up and down with reference to other objects the same as up and down with reference to our own person. 2. In physics: Why is it that a pendulum will not describe a plane surface but a conical one in its oscillations? A. The reason why a pendulum ball hung by a cord usually changes its swing into a conical surface, is that the place of the suspension of the cord in some way acts upon the pendulum unequally. Thus, if we could drill a perfectly round hole in a plate, equally smooth on all its edges, and pass through it a cord or wire which exactly filled and fitted the hole, so that the pendulum in all parts of its swing would bear equally upon the hole, it is not at all likely that the pendulum would change from swinging back and forth in a true plane. We should answer your question then, "Why is it that a pendulum will not describe a plane surface but a conical one in its oscillations?" by saying that it will, if you will give it a chance to do so. Of course, a pendulum hung by a rigid rod is forced to describe a plane surface in its oscillations. Only a pendulum hung by a flexible cord or wire can change to a conical swing. 3. If a resistance box be introduced in an electrical circuit, how will the potential of the current before entering and after leaving the resistance box be effected? A. The introduction of the resistance box into an electric circuit does not change the potential of a current in any way. It does, however, change the resistance between the two poles of the circuit, so that the drop of potential along that portion of the circuit in which the box is placed is changed. Thus, if the resistance of the piece of apparatus were 50 ohms, and the circuit is one of 110 volts, in order that 1 ampere should flow, we must have a total resistance of 110 ohms, and as there are but 50 in the apparatus there must be 60 ohms, added from the resistance box to produce this effect. The principles upon which this acts are, first, that the drop of potential in any part of an electric circuit is proportional to the resistance of that part of the circuit, and second that the current depends upon the ratio of the voltage to the resistance, according to Ohm's law. Now to answer your question: The resistance box forms a part of the circuit. Its resistance, plus the resistance of the rest of the circuit, constitutes the total resistance over which the drop of potential is to be distributed, and according to the first principle stated, the drop of potential in each of these two portions is proportional to the resistance of each portion of the circuit. As an illustration, if a circuit has its resistance in two parts 20 ohms and 30 ohms, there will be 50 ohms in the total circuit, and two-fifths of the drop will be in the 20 ohms and three-fifths in the 30 ohms. If, now, the voltage is 100, the drop in the 20 ohms will be two-fifths of 100, or 40 volts, and the drop in the 30 ohms will be three-fifths of 100 or 60 volts. 4. When a wire on the armature of a dynamo makes an angle of 0 deg. with the lines of force of the magnets, is the induced current in the wire at its maximum or minimum? A. The induced E. M. F. of a coil of the armature of a dynamo is at its minimum when the coil is under the brushes of the commutator. It is at a maximum at 90 deg. from this position, since there the number of lines of force are changing most rapidly. This coil makes an angle 0 deg. with the lines of force between the pole pieces. As the E. M. F. is at a maximum, so also, the current may be said to be at a maximum in a coil at 0 deg. with the lines of force.

(9402) E. L. A. says: Will you, through your inquiry column of the SCIENTIFIC AMERICAN, give me the easiest and best process for dissolving flower of sulphur? A. Sulphur dissolves easily in carbon bisulphide and readily in chloroform, benzole, and turpentine.

### NEW BOOKS, ETC.

THE MANUFACTURE OF IRON AND STEEL TUBES. By Edward C. R. Marks, Associate Member of the Institution of Civil Engineers, etc. Manchester, England: The Technical Publishing Company, Ltd., 1903. 12mo.; pp. 156. Price, $2.

The writer confines his discussion to butt and lap welded tubes of iron, open or close jointed and consolidated tubes, and processes and appliances for the production of seamless steel tubing. The many illustrations appearing throughout the work were prepared from the drawings attached to the printed patent specifications. In addition to the table of contents there is a comprehensive index which makes any desired information readily accessible. The work is an outgrowth of a series of lectures delivered by the author before the Birmingham Municipal Technical School. It should prove a useful handbook for manufacturers and others interested in the subject of iron and steel tubes.

ELEMENTE DES WASSERBAUES. Fuer studierende an hoeherer Lehranstalten und juengere Teckniker. Bearbeitet von Eduard Sonne und Karl Esselborn. With 226 illustrations. Leipzig: Wilhelm Engelman, 1904. 8vo.; pp. 337.

DER WASSERBAU. Nach den Vortraegen gehalten am Finnlaendischen Polytechnischen Institute in Helsingfors. Von M. Strukel. IV. (letzter) Teil. Leipzig: A. Twietmeyer. 1904. Sq. 8vo.; pp. 200 and 37 plates.

Both of these works cover pretty much the same field and are written quite in the same vein. Both are intended for post-graduate students and young engineers. We are unable to judge of the relative merits of the two works, for the reason that we have before us only the fourth part of Prof. Strukel's papers, discussing dikes, harbors, and the like. The work of Prof. Sonne and Prof. Esselborn seems to us in every way a most excellent text book, prepared with characteristic German thoroughness and in every way adapted for the purpose for which it was written. Prof. Strukel's discussion is considerably fuller and will for that reason probably find no slight appreciation among practising engineers.

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