

Examples for the Ladies.

Anna G. P. Inskeep, of Urbana, Ohio, says she and her two sisters have earned their entire livelihood for 7 years with a Wheeler and Wilson Machine without any repairs, although it has often been loaned to friends, and played with by many children.

"Of late years advertising has assumed a very important phase—in fact, has become a science in business, and no one has done more, or as much, to make it so, as Geo. P. Rowell & Co. of New York. Their prompt and systematic mode of transacting their business has gained the confidence of all large advertisers, and has raised them in a few years from one of the smallest to the leading advertising house in the world.—Maple Leaves.

Burnett's Cocaine promotes the growth of the Hair. Free from irritating matter.

Improved Universal Wringer.

The latest improved Universal Wringer has movable metal clamps and thumb screws for fastening to any sized tub; a folding shelf or apron, for carrying the clothes over the edge of the tub or machine; compound wooden spring-bars, to equalize the pressure of the rolls; a patent stop, to prevent the rolls from letting the cogs out of gear;—in short, everything which ingenuity can invent, has been pressed into service, to make The Universal a complete Wringing Machine.—Moore's Rural New Yorker, Sept. 9, 1867.

Business and Personal.

The Charge for Insertion under this head is One Dollar a Line. If the Notices exceed Four Lines, One Dollar and a Half per Line will be charged.

The paper that meets the eye of manufacturers throughout the United States—Boston Bulletin, \$1 00 a year. Advertisements 17c. a line. Presses, Dies, and all Can Tools—Ferracute Works, Bridgeton, N. J.

Wanted—One Brown & Sharp's or Pratt & Whitney's Screw Machine. Manhattan Brass and Man'g Co., 27th street and 1st avenue.

Peck's Patent Drop Press. Milo Peck & Co., New Haven, Ct
Glynn's Anti-Incrustator for Steam Boilers—The only reliable preventive. No foaming, and does not attack metals of boilers. Price 25 cents per lb. C. D. Fredricks, 587 Broadway, New York.

The Greenleaf Grate Bar saves fuel, and lasts much longer than the ordinary bar. Address Greenleaf Machine Works, Indianapolis, Ind.

Diamond Carbon, of all sizes and shapes furnished for drilling rock, sawing and turning stone, conglomerates, or other hard substances also Glazier's Diamonds, by John Dickinson, 61 Nassau st., New York.

Refined Paraffine Wax, any kind and quantity. C. C. Beggs & Co., Pittsburgh, Pa.

The Eccentric Elliptic Geared Power Presses save power, time labor, and save Punches and Dies. For Circulars, address Ivens & Brooke Trenton, N. J.

Vinegar—how made—of Cider, Wine, or Sorgo, in 10 hours. F. Sage, Cromwell, Conn.

Copper and Brass Seamless Tubes (from 3-8 to 5 in. outside diameter). Merchant & Co., 507 Market st., Philadelphia.

Patent English Roofing Felt, ready coat, thick, durable, and cheap. Merchant & Co., 507 Market street, Philadelphia.

See advertisement of Wilkinson's Combination Pocket Tool.

Send to E. & A. Betts, Wilmington, Del., for list of nice Machinists' Tools, on hand, and making.

For best Lubricating Oil, Chard & Howe, 134 Maiden Lane, N. Y.

To Cotton Pressers, Storage Men, and Freighters.—35-horse Engine and Boiler, with two Hydraulic Cotton Presses, each capable of pressing 35 bates an hour. Machinery first class. Price extremely low. Wm. D. Andrews & Bro., 414 Water st., New York.

L. & J. W. Feuchtswanger, Chemists, 55 Cedar st., New York, manufacturers of Silicates of Soda and Potash, and Soluble Glass.

Send your address to Howard & Co., No. 865 Broadway, New York, and by return mail you will receive their Descriptive Price List of Waltham Watches. All prices reduced since February 1st.

Self-testing Steam Gauge.—The accuracy of this gauge can be tested without removing it from its connection with the boiler. Send circular. E. H. Ashcroft, Boston, Mass.

Ashcroft's Low Water Detector. Thousands in use. Price, \$15. Can be applied for less than \$1. Send for Circular. E. H. Ashcroft, Boston, Mass.

Lord's Boiler Powder is only 15 cts. per pound by the bbl., and guaranteed to remove any scale that forms in steam boilers. Our Circular with terms and references, will satisfy all. Geo. W. Lord, 107 W. Girard ave., Philadelphia, Pa.

Brown's Coal-yard Quarry & Contractors' Apparatus for hoisting and conveying material by iron cable. W. D. Andrews & Bro., 414 Water st., N. Y. Presses, Dies, and Tanners' Tools. Conor & Mays, late Mays & Bliss, 4 to 8 Water st., opposite Falton Ferry, Brooklyn, N. Y.

Over 1,000 Tanners, Paper-makers, Contractors, &c., use the Pumps of Heald, Sisco & Co. See advertisement.

For Solid Wrought-iron Beams, etc., see advertisement. Address Union Iron Mills, Pittsburgh, Pa., for lithograph, etc.

Mining, Wrecking, Pumping, Drainage, or Irrigating Machinery, for sale or rent. See advertisement, Andrew's Patent, inside page.

Bliss & Williams, successors to Mays & Bliss, 118 to 122 Plymouth st., Brooklyn, manufacture Presses and Dies. Send for Catalogue

Improved Mode of Grafting Wood with Metallic Plates, patent July 5th, 1870, by J. J. Callow, Cleveland, O. Sample plate sent for \$3.

Superior Belting—The best Philadelphia Oak Tanned Leather Belting is manufactured by C. W. Army, 301 Cherry Street, Philadelphia.

Improved Foot Lathes, Hand Planers, etc. Many a reader of this paper has one of them. Selling in all parts of the country, Canada Europe, etc. Catalogue free. N. H. Baldwin, Laconia, N. H.

Bailey's Star Hydrant, best and cheapest in the world. All plumbers send for a circular to G. C. Bailey & Co., Pittsburgh, Pa.

Wanted—To invest \$500 to \$5,000 in a good paying Manufacturing or Mercantile Business. Address Box 574, Pittsburgh, Pa.

Copper and Brass Seamless Tubes (from 3-8 to 5 in. outside diameter). Merchant & Co., 507 Market st., Philadelphia.

Patent for sale, or Partner wanted with capital to introduce the same. Please address Philip Marquard, 468 Swan st., Buffalo, N. Y.

Wanted, a good salesman to take charge of a new branch machinery store we are about opening—one who is familiar with Wood-working Machinery, and can furnish good references. Address J. A. Fay & Co., Cincinnati, Ohio.

\$4.00. Stephens' Patent Combination Rule, Level, Square, Plumb, Bevel, Slope Level, etc. See advertisement in another column.

To Ascertain where there will be a demand for new machinery or manufacturers' supplies read Boston Commercial Bulletin's Manufacturing News of the United States. Terms \$4 00 a year.

Answers to Correspondents.

SPECIAL NOTE.—This column is designed for the general interest and instruction of our readers, not for gratuitous replies to questions of a purely business or personal nature. We will publish such inquiries, however, when paid for as advertisements at 100 a line, under the head of "Business and Personal."

ALL reference to back numbers must be by volume and page.

CONE PULLEYS.—D. L. B., in your issue of Aug. 26, explains cone pulleys; allow me to simplify his method. Let him make his driving cone, say 12, 13, and 14 inches, then put it up in the place desired. If the size of the smaller cone to be driven is 1 inch, get a casting for said cone, so that it will finish 1, 2, and 3 inches. Then turn the smaller pulley to the size of 1 inch, and place the same in the lathe where it is to be used. Put a gross line around from the driving cone to the lower one, and tie it taut; then shift to the next pulley, and with one or two trials he can turn it to correspond with the first, by means of the line; so on with the third. The line also will give the length of belt. Any machinist will find this a simple, easy, and perfect way of making cone pulleys. It is D. L. B.'s theory simplified, and put where any practical workman can easily understand it.—F. H. M., of Mass. [This is a good practical method, as we know by experience. The calculation of sizes mathematically, is for all cases difficult, and the method given by F. H. M. is accurate enough for most purposes. With these remarks we shall drop the subject of cone pulleys for the present.—Eds.]

RIGHT ANGLED TRIANGLE.—Briefly, let the three sides be H, B, P. Let the cosines of the angles opposite B and P be severally b and p. It can be shown that

P ÷ B = b ÷ p

is true for all right angled triangles; and this suffices to solve the problem; we modify the equation thus:

P = (B × b) ÷ p

which is, indeed, a "solution." Multiply the known side by the cosine of the opposite angle, and divide by the cosine of the angle opposite the side sought. This will solve so much of the problem as relates to the two sides B, P, one of which is known. Having both B and P, find the square root of the sum of their squares for the value of the side, H.—J. L., of N. Y.

DIMENSIONS OF RIGHT ANGLED TRIANGLE.—C. E. C., query No. 4, Sep. 2, asks: "Given the three angles and the length of the base, to find the length of the hypotenuse, or the perpendicular, of a right angled triangle." As the angles are given, the solution is in the use of natural sines, that is, sines, cosines, tangents, cotangents, etc. See Davies' "Legendre, Plane Trigonometry," page 28, where will be seen six principles applicable to the solution of right angled triangles in any case required. Rule No. 3 applies to C. E. C.: "Perpendicular is equal to base by tangent of angle at base." To find hypotenuse, rule No. 1: "Perpendicular equals hypotenuse by sine of angle at base;" or, according to proportion, transposing the factors and using logarithms, we have log. of hypotenuse equals log. of perpendicular (plus ten) minus log. sin. C. The hypotenuse is easily found without the use of trigonometry, as follows: Multiply the square of the base by the square of the perpendicular, extract the square root of the result, and it is the hypotenuse of a right angled triangle.—N. F. P., of —

RIGHT ANGLED TRIANGLE.—If C. E. C. (Sep. 2) has a table of logarithms, he can find his hypotenuse by the following rule: Sine of vertical angle is to base as the radius is to hypotenuse. If not, let him lay down his base line from any rule, and construct the adjacent angles; then the intersection of the two other sides will mark the third angle, and he can measure either side by the same rule.—T. E. N. E., of Mass.

ROLLING BODIES.—Of three balls: one of gold, one of iron, and a third of some lighter material than iron, to be perfect globes, of equal diameters, and coated over with paint, or otherwise, so that they shall be exactly alike, to all external appearance, and all of the same weight—the gold one being quite hollow, the iron one less hollow, and the lighter material solid or but a little hollow—the question is how to tell which is the gold and which the iron, without defacing the surface. The answer given is that the use of an inclined plane will decide; for the gold ball, having all the weight at or near its circumference, will roll the most rapidly down the incline, and the iron one next, and the lighter material slowest. Many people possessed of considerable scientific knowledge believe this answer to be correct. Is it correct or erroneous?—S. H. B., of Pa. Answer: Incorrect. The balls will roll down in equal times.

JAPANING ZINC.—In reply to your correspondent, M. D., query No. 9, in your paper of August 5th, I do not think he can get any Japan which will adhere to zinc, whether stove or not. The only article which I know of that will permanently adhere to zinc, is Webster's Patent Zinc Metal Paint. This is not the oxide of zinc, but the spelter itself reduced into a friable form by a patent mechanical process. I have seen a piece of sheet zinc coated with this preparation, and after being exposed to the atmosphere for more than two years, was as firmly attached to the zinc as possibly could be.—J. McH., of Birmingham, England.

RETURN PIPE OF STEAM HEATER.—A. S. wishes to know why the return pipe is connected to the boiler below the water line. In my opinion that is the correct and scientific principle. The operation seems to be as follows: When steam generates, its specific gravity being so much less than that of water, it seeks its outlet from the upper end of the boiler through the steam pipe to the radiators, where it condenses, and returns by the return pipe to the lower end of the boiler; this establishes a complete circulation. A. S. can return by the same pipe (steam pipe), but at the expense of fuel, from the fact that the live steam comes in contact with the condensed steam, and lowers its temperature before reaching the radiators. The best way is to place a check valve in the return pipe, just above the boiler; then, as the condensed steam collects (say eighteen or twenty inches above), the valve will open and let it in, and so on, opening and closing as the steam condenses.—J. A. Mc.

WATERPROOF CLOTH.—A. L. S., of Ga.—To render cloth waterproof, immerse in a mixture of the solutions of sulphate of alumina and acetate of lead, using about five parts of the first named salt to six parts of the latter, by weight.

J. A. Mc.—Your theory of circulation in steam heating apparatus is correct.

C. S., of Ontario.—The price of the SCIENTIFIC AMERICAN, postpaid to Canada, is \$3-25.

O. W. C., of Mo.—The gum used on postage stamps and envelopes is gum dextrin.

R. H. A., of Md.—We cannot give the address desired.

M. H. B., of Mass.—It is impossible to tell what is the defect in your pump, without any knowledge of the circumstances under which you are trying to make it work.

J. E. M., of Pa.—There are plenty of authorities that have investigated the flow of steam through orifices. Get Box's "Practical Treatise on Heat," which contains full information, tables, and formulae.

DIMENSIONS OF A RIGHT ANGLED TRIANGLE.—C. E. C. (Sep. 2) will find, if he studies the 47th proposition of the first book of Euclid's "Elements," that the length of the hypotenuse, and of the perpendicular, will vary with the proportions of the two smaller angles. The squares of the two sides containing the right angle will be proportioned to each other inversely as the two angles are. Thus, if A B C be the triangle, A B being the hypotenuse, the square of the line, A C, will be to the square of the line, B C, as the angle A B C is to the angle B A C. C. E. C. has only to apply the proposition to any given data to find what he wants to know.—D. B., of N. Y.

BED SPRINGS.—Does E. S. B. use copper springs, or are they iron slightly coppered? If of iron, immersion in solution of sulphate of copper will restore the covering which has been burned off. They must be first thoroughly cleaned.—M. P., of Conn.

CONDENSATION OF STEAM IN LONG PIPES.—Y. S. (Sep. 2) should know that the rate of condensation will vary with the diameter of the pipe, and thickness of the metal of which it is made. No rule can be given, as an answer to his query.—D. B., of N. Y.

ROLLING THIN METAL.—Current volume No. 9, page 138, query 8.—Gold can be so worked that 200,000 sheets will be but one inch in thickness; silver and platinum can be worked considerably thinner than 4,800 sheets to one inch; this process is done by beating between goldbeater's skin. "If it can be done by rolling?" as the question asks, I do not know, but suppose it could, provided the metal is protected from touching the rollers directly.—A. K., of N. Y.

KILLING TREES.—Current volume No. 9, page 138, query 12. If S. H. L. will take a concentrated solution of sulphate of iron and apply it to a tree by making a cut with an ax in the same, and pouring some of the solution in it, he will see a wonderful effect. I saw this receipt about six years ago in Germany, in some book, and believing in its efficacy, I undertook a trial. I made a solution of the above mentioned salt, dipped a knife in it, and cut off the half of a leaf of a rare house plant. To my regret, the whole plant died, which was a rather costly experiment. The cost of the material is very low.—A. K., of N. Y.

WRITING ON CHINA.—In answer to query of R. T.: Take liquid silicate of soda, of 1-5, incorporate with red lead, to give it a bright color. Write with a small brush, and set the pottery in the heated oven of a stove for 48 hours. Do not put on too thick.—P. M., of N. Y.

GRINDING CLAY.—Let D. H. S., Jr., crush his clay between two rollers of cast iron. Grind afterward in pug mill.—P. M., of N. Y.

FOUNTAIN.—G. M. G. should use two 3/4 inch supply pipes, and 1/2 inch pipe (all of lead), and use the double acting ram; as it has two valves, it gives a steady even pressure of the water. He will not need a reservoir, as he has all the pressure that can be had on the water.—C. H. of N. H.

W. F. W., of N. Y.—An American patent is invalid if granted for a process or device identical with that which has been in practice in Europe for twenty five years, as you state. Such a patent cannot be sustained in the courts.

J. R. D., of Miss.—We know of no way by which your imperfectly burned bricks can be converted into good bricks.

HAIR DYE STAINS.—In answer to L. D., query 12, page 154, nitrate of silver, or hair dye stains can be removed by a solution of ten grains of cyanide of potassium, and five grains of iodine to one ounce of water; or a solution of 8 parts of perchloride of mercury and muriate of ammonia in 125 parts of water.—T. J. D., of Pa.

QUEEN BEES.—In answer to J. E. R., as to the death of queen bees, in No. 7, current volume of the SCIENTIFIC AMERICAN, I have to say that when bees throw off their first swarms, they generally raise up a number of queens to take the old one's place. These leave with the swarm and as only one queen is permitted to stay in a hive, the others are killed and thrown out on the lighting board.—J. M. C., of Ill.

PLATED WARE.—If "Plater," query 18, September 2, will make a paste of whiting and alcohol, apply it to his plated ware, and allow it to dry, rubbing it with a brush if rough, or with a soft rag if smooth, he will have no more trouble in cleaning plated goods.—S. S., of N. Y.

FIBRIN FROM BLOOD.—S. G. D. (Sep. 2) can obtain fibrin of tolerable purity by whisking the blood with a bundle of twigs. The fibrin coagulates in elastic strings, of an opaque white color. It should be washed in water, and can then be pressed into a doughy substance. It dries to a horny texture, and becomes yellow in color.—D. B., of N. Y.

GAS FOR BALLOONS.—T. J. W. is informed that fifteen cubic feet of hydrogen will raise a weight of one pound; but more of the carbureted hydrogen of the gas works will be required, and the quantity will increase with the various impurities in the gas.—D. B., of N. Y.

Declined.

Communications upon the following subjects have been received and examined by the Editor, but their publication is respectfully declined:

- BOILER EXPLOSIONS.—A. A. W.—B. M. J.—S. F. R.
- CANAL NAVIGATION.—D. P.—S. D. C.
- CIRCULATION IN BOILER.—P. R.
- CONSUMING SMOKE.—P. S.
- DARWINISM.—J. E. S.
- DESCRIPTION OF THE UNIVERSE.—J. S.
- FORMATION OF THE WORLD.—S. C. C. C.
- GRAVITY A PROPERTY OF MATTER.—W. L. W.
- LOW PRESSURE ENGINES.—T. B. W.
- PRESSURE OF FLUIDS.—C. H. P.
- REFLEX INFLUENCE OF MACHINES.—D. S.
- SAFETY VALVES.—O. R.
- ANSWERS TO CORRESPONDENTS.—A. D.—D. & R.—H. S. W.—T. S. B.
- QUERIES.—A. D.—A. E. M.—A. J.—C. H. L.—J. A. G.—W. L. C.

Inventions Patented in England by Americans.

August 15 to August 18, 1871, inclusive.

[Compiled from the Commissioners of Patents' Journal.]

- AUXILIARY SPRING.—H. Lull, Hoboken, N. J.
- BALE TIE.—S. Brett, New York city.
- CLEANSING FIBER.—W. Adamson, Philadelphia, Pa.
- GAS LIGHTER.—F. Bean, Somerville, Mass.
- LABELLING MACHINE.—E. Tyrrell, Brooklyn, N. Y.
- LOOM.—A. Nimmo, T. Moran, V. Stausse, G. W. Ensinger, Philadelphia, Pa.
- PHOTOGRAPHIC PLATE.—H. M. Hedden, C. A. Hill, Worcester, Mass.
- PREPARING GRAIN FOR FOOD.—R. B. Fitts, Philadelphia, Pa.
- SIGNAL.—T. S. Hall, West Meriden, Conn, and A. L. Van Blarcom, Summit, N. J.
- STEAMING CLOTH, ETC.—L. M. Heery, Hinsdale, Mass.
- TANNING.—W. A. Hacker, Lynn, Mass.

Value of Extended Patents.

Did patentees realize the fact that their inventions are likely to be more productive of profit during the seven years of extension than the first full term for which their patents were granted, we think more would avail themselves of the extension privilege. Patents granted prior to 1861 may be extended for seven years, for the benefit of the inventor, or of his heirs in case of the decease of the former, by due application to the Patent Office, ninety days before the termination of the patent. The extended time inures to the benefit of the inventor, the assignees under the first term having no rights under the extension, except by special agreement. The Government fee for an extension is \$100, and it is necessary that good professional service be obtained to conduct the business before the Patent Office. Full information as to extensions may be had by addressing

MUNN & CO., 37 Park Row.