

What they think at the White House of the United States Watch Company's MARION WATCHES.

The following is from General PORTER, President GRANT'S Private Secretary:

EXECUTIVE MANSION, WASHINGTON, D. C., October 18th, 1871.

DEAR SIR—My watch has kept excellent time since I have carried it. Yesterday, in some unaccountable way, the crystal was broken. Will you please replace it, and oil the works? they have never been oiled or examined since the watch left the factory. I expect to be in New York a day, about Thursday or Friday of next week, and I shall call at your place, 13 Maiden Lane, for the watch.

Yours very truly,
(Signed) HORACE PORTER.

F. A. GILES, Esq.

The Watch referred to above, is No. 27,335, Stem Winder, Trade Mark "John W. Lewis—manufactured by the United States Watch Co., (Giles, Wales & Co.,) Marion, N. J."—and has been carried by Gen. Porter for over a year. We are glad to see that our officials in high places appreciate fine American mechanism, and set the example of patronizing home productions instead of sending our gold abroad for inferior articles.

Examples for the Ladies.

Mrs. T. M. Scullin, Troy, N. Y., has used her "dear friend," a Wheeler & Wilson Machine, since 1858, in dress and cloak-making. The last six months she earned \$332, and the year before, \$417.

Mrs. C., of New York, has used a Wheeler & Wilson Machine since 1857, never averaging less than \$700 a year, and for the last five years \$1,000. She used the same needle during 1870, and earned with it over \$1,000.

For Irritation of the Scalp, apply *Burnett's Cocoaine* night and morning.

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.

Dry Steam, dries green lumber in 2 days; tobacco, in 3 hours; and is the best House Furnace. H. G. Bulkley, Patentee, Clevelândia, Ohio.

To Ascertain where there will be a demand for new Machinery, mechanics, or manufacturers' supplies, see *Manufacturing News of United States in Boston Commercial Bulletin*. Terms \$4.00 a year.

Manufacturers and Mill Supplies of all kinds. Greene, Tweed & Co., 18 Park Place, New York.

The "Safety" Hold Back for Carriages prevents runaway accidents. See Sci. Am. Feb. 21, 1872. Undivided Interest, or State and County Rights, for sale. Address N. W. Simons, Williamsfield, Ohio.

Lord's improved Screen or Separator—also Watchman's Time Detector. For particulars, address Geo. W. Lord, 232 Arch St., Phila., Pa.

Scale in Steam Boilers. We will remove and prevent Scale in any Steam Boiler, or make no charge. Geo. W. Lord, 232 Arch Street, Philadelphia, Pa.

Walrus Leather for Polishing Steel, Brass, and Plated Ware. Greene, Tweed & Co., 18 Park Place, New York.

The Exeter Machine Works, Exeter, N. H., manufacturers of Sectional Boilers and Steam Engines, will soon open, in Boston, Mass., a centrally located sales room, in connection with their works; and are willing to take the agency of a few first class Machines and Tools not already introduced in that city.

For Diamond Turning Tools for Trueing Emery Wheels and Grindstones, address Sullivan Machine Co., Claremont, N. Hamp.

Standard Twist Drills, every size, in lots from one drill to 10,000, at 1/2 manufacturer's price. Sample and circular mailed for 25c. Hamilton E. Towle, 176 Broadway, New York.

Hydraulic Jacks and Presses, New or Second Hand, Bought and sold, send for circular to E. Lyon, 470 Grand Street, New York.

All kinds of Presses and Dies. Bliss & Williams, successors to Mays & Bliss, 118 to 122 Plymouth St., Brooklyn. Send for Catalogue.

Brown's Coal Yard Quarry & Contractors' Apparatus for hoisting and conveying material by iron cable. W. D. Andrews & Bro., 114 Water St., N. Y. Presses, Dies, and Tinner's Tools. Conor & Mays, late Mays & Bliss, 4 to 8 Water St., opposite Fulton Ferry, Brooklyn, N. Y.

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

In the Wakefield Earth Closet are combined Health, Cleanliness and Comfort. Send to 38 Dey St., New York, for descriptive pamphlet.

Enameled and Tinned Hollow-Ware and job work of all kinds. Warranted to give satisfaction, by A. G. Patton, Troy, N. Y.

For Circular of the largest variety of Wood Planing and Miter Dovetailing Machinery, send to A. Davis, Lowell, Mass.

Rubber Valves—Finest quality, cut at once for delivery; or moulded to order. Address, Gutta Percha & Rubber Mfg Co., 9 & 11 Park Place, New York.

Best and Cheapest—The Jones Scale Works, Binghamton, N. Y. Grist Mills, New Patents. Edward Harrison, New Haven, Conn.

Taft's Portable Hot Air Vapor and Shower Bathing Apparatus. Address Portable Bath Co., Sag Harbor, N. Y. Send for Circular.

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

For Steam Fire Engines, address R. J. Gould, Newark, N. J. For Solid Wrought-iron Beams, etc., see advertisement. Address Union Iron Mills, Pittsburgh, Pa. for lithograph, etc.

Belting as is Belting—Best Philadelphia Oak Tanned. C. W. Arny, 301 and 303 Cherry Street, Philadelphia, Pa.

Boynton's Lightning Saws. The genuine \$500 challenge. Will cut five times as fast as an ax. A 6 foot cross cut and buck saw, \$6. E. M. Boynton, 80 Beekman Street, New York, Sole Proprietor.

Peck's Patent Drop Press. Milo Peck & Co., New Haven, Ct. Vertical Engines—Simple, Durable, Compact. Excel in economy of fuel and repair. All sizes made by the Greenleaf Machine Works Indianapolis, Ind. Send for cuts and price list.

Millstone Dressing Diamond Machine—Simple, effective, durable. For description of the above see *Scientific American*, Nov. 27th 1869. Also, Glazier's Diamonds. John Dickinson, 64 Nassau St., N. Y.

Presses, Dies & all can tools. Ferracute Mch Wks, Bridgeton, N. J. For 2 & 4 Horse Engines, address Twiss Bros., New Haven, Ct.

Opium Eaters—If you wish to be cured of the habit, address T. E. Clarke, M. D., Mount Vernon, Ohio.

Blake's Belt Studs. The best fastening for Leather or Rubber Belts. 40,000 Manufacturers use them. Greene, Tweed & Co., 18 Park Place, New York.

Wanted—An agent to sell territory for a new and valuable patent. Address, for circular and terms, P. O. Box 773, New York.

Hoisting Engines. Simplest, cheapest, and best. Send to John A. Lighthall, Beekman & Co., Office 5 Bowling Green, New York.

L. & J. W. Feuchtwanger, 55 Cedar St., New York, Manufacturers of Silicates, Soda and Potash, Soluble Glass, Importers of Chemicals and Drugs for Manufacturers' use.

New & Improved Bolt Forging Machines, J. R. Abbe, Prov., R. I. File Grinders' Grindstones, coarse grit—Mitchell, Phila., Pa.

Independence Grindstones—J. E. Mitchell, Phila., Pa. Well auger which will bore at the rate of 150 ft. per day. Send 10c. for circular to W. W. Jitz, St. Joseph, Mo.

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. E. Baldwin, Laconia, N. H.

Parties wishing to go S. W. with cotton or woollen machinery, address Isaac Sharp, Evening Shade, Sharp County, Ark.

Wanted Situation, by a Draughtsman—competent to design any kind of Engines or Machinery; or would be found expert in carrying out designs for Engineers, and good Practical Mechanic. Good reference. Address E. M., Box 157, Mansfield, Ohio.

A young man desires a situation in a Civil Engineer Corps—understands leveling. Good references. Address Engineer, Camptown, Bradford County, Pa.

For Sale—A 2 1/2 H.P. Stationary Engine. Address J. Abbot, Fitchburg, Mass.

Wanted, to correspond with owners of Patents—Picture Frames, Hangers, or other light metal work—view to manufacturing. Address H. J. Dorchester, 618 North Main Street, St. Louis, Mo.

For the best Match Splint Machinery made, address H. M. Underwood, Kenosha, Wis.

Manufacturers of Spoke and Last Machines, send description and price list to William Graham, Smiths Falls, Ont.

Parties desiring articles prepared for the press, describing really meritorious and useful inventions or processes, may find it to their advantage to communicate with Richard H. Buel, Consulting Mechanical Engineer, 7 Warren Street, New York.

Get your steam boilers and pipes covered with the best non-conductor in the world. Call for Circular. Asbestos Felting Company, 45 Jay Street, New York City.

The paper that meets the eye of manufacturers throughout the United States—*Boston Bulletin*. \$4 00 a year. Advertisements 17c. a line.

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19.—HEATING BY STEAM.—How large a boiler will it need to heat a building 60x30 feet, and four stories high? How can I calculate the size of a boiler required to heat any particular building?—J. C.

20.—MICROSCOPY.—I have a microscope (non-achromatic lenses) which, though it shows a transparent object clearly enough, gives little more than the outlines of an opaque one. How can this difficulty be overcome? Will a condenser make the whole top of an object plain?—A. M.

21.—MATCHES FOR MOLDING.—Can any of your readers inform me how to make sand and oil matches to mold from, and how to prevent plaster matches from softening with work?—O. K.

22.—LETTERS FOR PATTERN MAKERS' USE.—What kind of metal is used, what are the proportions of mixture, and what is the best way to make, letters, figures, etc., for model and pattern makers to use on their work?—J. M. S.

23.—PIN SPOTS IN STEEL.—How can I treat steel so as to soften the hard spots or pins in it? I have bars of the finest steel I could purchase in New York, but it all has had spots in it. I have tried many different ways to soften them and failed. How can I make steel as soft as possible without hurting its quality?—H. M. H.

24.—IRON CASTINGS.—Is there any process by which soft iron castings can be made from old castings, without the addition of new iron?—H. M. H.

25.—SUCTION FAN.—What is the best shape for the wings of a suction fan, intended to draw the shavings from four or five planing machines? What should be the shape of the spouts, and the proportionate sizes of inlet and outlet?—J. E. G.

26.—CARBON BATTERY.—In your paper of Jan. 6th, 1872, there are directions for making a carbon battery, and also for making the carbon plates. I have been experimenting in electricity, and I was anxious to try the different kinds of batteries, so I tried to make a carbon battery. I made the plates all right, but when I came to set the battery to work, it would not go; and I have failed to make it go. Can any one give me definite instruction as to what are the component parts and quantities necessary to make a carbon battery?—L. E. H.

27.—TEMPERING STEEL.—Is there any way in which I can bring a large number of small steel articles to a uniform degree of hardness, other than the slow process of "drawing"? Will dropping them into some liquid, heated to a high temperature, prevent them from becoming too hard?—E. B. T.

28.—BURNING CHARCOAL.—I am engaged in the manufacture of charcoal. I burn about sixteen cords in a pit. The wood is cut four feet in length, set up endwise, two tiers high, to form a conical shaped pit, and covered with earth in the usual manner. I have experienced difficulty in charring the ends of the lower tier, which rest on the ground, having a loss of 8 to 15 per cent in "uncharred butts" left in the pit. Will some one give me the best mode of burning? Also, tell me if any have tried or seen ovens used similar to cooking ovens for burning charcoal?—B. C. C.

29.—MEASURING FLOW OF WATER.—How can I ascertain how much water would flow over a given point, in a given time (say one minute) in a creek? The minimum of water flowing in the creek is 45 square inches. Its descent is as much as 20 feet in 30 rods. The plan given in your valuable paper a year or two ago for this purpose is useless to me, because there are so many short turns and obstructions (fallen trees) in the creek.—C. B.

30.—PLASTIC SLATE ROOF.—Is there any way of repairing a plastic slate roof which has, in three and a half years, become so cracked and torn as to be exceedingly dangerous? The roof originally consisted of a heavy coat of felt, covered with some composition which is now, with the felt, highly inflammable.—J. M.

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 10c a line, under the head of "Business and Personal."

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

F. B., of Conn.—Your question about fire from steam pipes has been repeatedly answered in these columns, both in editorial articles and answers to queries. We do not wish to reopen the subject at present.

D. B. H., of S. C.—We have met with no explanation of the statement that the eyes are affected in ice boating when running with the wind at high speed. We have, in our own experience, suffered no such inconvenience.

W. K. R.—Sound is the vibration of the air; the rubbing of a goblet with wet fingers produces vibration in the glass which communicates it to the air and to the ear. Let him rub a goblet in a vacuum, and listen if he hears anything.—J. A. L., of O.

VOLTAIC PILE.—Let T. F. G. take disks of copper, zinc, and woolen cloth of any size, soak the cloth in a solution of sal ammoniac, then pile them up in the following order: copper, zinc, cloth, and so on; then connect the outer disks with a copper wire. The larger the disks and the greater their number, the greater is the intensity of the current.—J. A. L., of O.

VOLTAIC LIGHT.—It will take a battery of forty cells of Grove's elements to make an electric light of any considerable size. If, however, you have a battery of another kind, you can take as follows: Forty-five Bunsen's, fifty-five Daniell's, or seventy-five Smee's. Grove's battery is the cheapest and best for the more striking effects of electricity. The carbon pencils should be made of the same kind of coke as the carbon in Bunsen's battery. Browning's lamp is the cheapest lamp for exhibiting the light.—E. X., of Mass.

RAISING NUMBERS TO FRACTIONAL POWER.—T. M. N., query No. 6, Feb. 24. The best way to raise a number to the power of a fraction is to take the logarithm of the number from a table of logarithms, multiply that logarithm by the fraction, and find in the table the number corresponding to that product. The number, expressed in whole numbers and decimals, will be practically accurate.—

BREAKING OF CAST IRON PULLEYS.—The explanation of C. M. R.'s broken pulley is this: Cast iron is always crystalline, and wrought iron often becomes so by constant jarring. That pulley was crystalline in the interior while the surface was not. This caused the interior to expand or rather to attempt to. So long as the surface was whole, the interior was bound, so that it could not expand freely. But when the surface was broken the tension was removed, the piece expanded fully, and became too large to be replaced.—

CARBONIC ACID GAS IN WELLS.—With regard to carbonic acid gas in wells, the most simple plan to get rid of it is to get a blacksmith's bellows—an old one could be borrowed in almost any town—and a tin or lead gas or steam pipe. Attach it to the nozzle of the bellows and run it to the bottom of the well; so long as the bellows is worked the well will be free from gas. A well digger in this place burned shavings in a well he was digging every hour; still his workmen were so affected they were about abandoning the work, when the contractor came to me to see if I could tell him how to get rid of the gas; I told him of the bellows; he borrowed one and set a boy to working it, and his men worked for and finished the well without further trouble.—M. W., of N. J.

Notes & Queries.

[We present herewith a series of inquiries embracing a variety of topics of greater or less general interest. The questions are simple, it is true, but we prefer to elicit practical answers from our readers.]

1.—CUTTING GLAZIERS' DIAMONDS.—Can any of your correspondents tell me how to cut worn glaziers' diamonds to a new point?—W. K.

2.—FLUID AND LIQUID.—Will some one tell me the proper and fine distinction between a fluid and a liquid? Can a substance be both at once? I assume that the difference is great, and would like to have other opinions.—H. W. H.

3.—COLORING SHELLS.—Is there any way of coloring these a bright red?—C. H.

4.—HYDROGEN GAS.—Is there any process yet discovered by which illuminating gas can be made over into pure hydrogen? Has the metallic base of hydrogen ever been discovered?—E. X.

5.—NITRIC ACID IN BATTERY.—Is the nitric acid, in the porous cup of a Grove or Bunsen battery, raised any degrees of temperature; and if so, about how many, if the acid is put in at about 60 degrees Fahr.?—E. X.

6.—FROZEN WATER MAIN.—Will some of your readers please inform me which is the quickest and cheapest way to thaw out 160 feet of frozen water main, 4 feet under ground?—C. H. J.

7.—COMPRESSION OF WOOD PULP.—Is there any way by which wood pulp can be compressed so as to be impervious to liquids, without destroying the elasticity of the wood?—H. B.

8.—FAST COLORS.—Will some of your readers inform me how I can make a dye of log wood and copperas "fast" so that it will not rub off?—F. W.

9.—BRASS COLORED PAINT.—Can any one tell me if there is any paint of the same color as brass, and of what is it made?—O. W. V.

10.—ELASTIC CEMENT.—I have broken an india rubber gas bag; will some one please give me a recipe for a good, durable elastic cement, suitable for mending it?—W. M. S.

11.—W. B. D., of N. J.—Please give us the title of the book you refer to containing notice of asbestos packing. Also extract, if convenient.

12.—BATTERY FOR PLATING.—I would like to know how to make a good galvanic battery for plating with gold and silver. I want some one to tell me how to get up the cheapest and best for that kind of work.—W. B. J.

13.—CRACKED FLUTE.—Will some one please inform me how to keep a flute from cracking, and how to stop cracks that have already appeared?—A. E. T.

14.—TANNING BUFFALO HIDES.—Can any one inform me how the Comanche Indians tan the hides of buffaloes, so that the leather does not get hard and horny, nor does the hair come out?—B. F. B.

15.—PAINTING IRON BATH TUB.—Will some one inform me what kind of paint I can use for painting my iron bath tub, that will adhere and not scale off in a short time? I have had it painted several times with pure white lead mixed with raw and boiled oil; but it scales off.—C. A. H.

16.—DISCOLORED GLASS.—Last summer I had some large glass panes put in my front windows; they have a smoky appearance. It seems to be on the surface and not all through the glass. Is there anything that will remove it? It is not smoke; if it were, I could remove it with turpentine.—W. G. E.

17.—STAINS ON MARBLE.—What is the best method by which weather, tobacco, grease, iron rust, and other stains can be removed from marble; and by which the original polish can be restored?—A. P.

18.—PAINTING SHEET IRON.—Will some of your correspondents give me a recipe for some kind of paint or substance for coating a sheet iron smoke stack, to prevent its rusting and to stand the heat?—J. C.