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 1·00 a line, under the head of "Business and Personal."

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

F. E. R., of Cal.—Fresenius gives the following formula for making sulphocyanide of potassium: ($K, C_2 N S_2$ or $K, Cy S_2$). Mix together 46 parts of anhydrous ferrocyanide of potassium, 17 parts of carbonate of potassa, and 32 parts of sulphur; introduce the mixture into an iron pan provided with a lid, and fuse at a gentle heat; maintain the the same temperature until the swelling of the mass which ensues at first has completely subsided and given place to a state of tranquil and clear fusion; increase the temperature now, towards the end of the operation to dull redness, in order to decompose the hyposulphite of potassa which has been formed in this process. Remove the half refrigerated and still soft mass from the pan, pulverize it, and boil with alcohol. Let the alcoholic solution cool, when part of the sulphocyanide of potassium will separate in colorless crystals; to obtain the remainder, distil the alcohol from the mother liquor. Dissolve 1 part of the salt in 10 parts of water for use.

J. B A., of Ohio, says: "I enclose you a small specimen of ore found in this vicinity, supposed by many to contain silver, discovered in the first place by the plow turning up a piece of the rock. The owner of the land dug around the mass of rock to some extent. On one edge he found that some people had had a charcoal fire, for the purpose, no doubt, of smelting it. It has been stated by the Indians that there are valuable minerals near this place. Please let me hear from you through your columns." We have examined your specimen. It is not an "ore," but a variety of hornblende, without a trace of silver.—EDS.

W. C. C., of Md.—The mineral you send is disintegrated steatite. It may be useful for diminishing friction, for polishing marble and glass, and in the manufacture of porcelain.

J. C. of Pa.—What you call the magnetic fish is simply a shape of a fish cut from a very thin piece of gold beater's skin, horn, whalebone, or other material which is readily affected by moisture. Its motion when laid in the palm of the hand, is caused by the moisture of the skin.

R. B., of N. Y.—We doubt that any screw steamer ever sailed fifteen miles an hour, under canvas alone. What a steamer would average, with canvas and steam both employed, depends upon too many and variable circumstances to be definitely answered. No two vessels have the same sailing qualities, and winds are proverbially fickle.

J. C. G., of N. Y.—The actual flow of a liquid from an orifice in the side of a vessel is only about two thirds that of the theoretical flow, or that amount of flow which would take place were there there no contracted vein. This has been determined by a great number of observations, and is the usual estimate in calculating the flow of liquids through such orifices.

C. K., of Texas.—Find answer to your query about hardening tallow, on page 201, last volume.

D.—The mineral you send is an ore of iron. If found abundant and in *situ*, that is, not accidental (of which we are suspicious) it might be worth while to test its commercial value by a large experiment.

ANNEALING STEEL.—1st. For a small quantity. Heat the steel to a cherry red in a charcoal fire, then bury in sawdust, in an iron box, covering the sawdust with ashes. Let stay until cold. 2nd. For a larger quantity, and when it is required to be very "soft." Pack the steel with cast iron (lathe or planer) chips in an iron box, as follows: Having at least ½ or ¾ inch in depth of chips in the bottom of box, put in a layer of steel, then more chips to fill spaces between the steel, and also the ½ or ¾ inch space between the sides of box and steel, then more steel; and, lastly, at least 1 inch in depth of chips, well rammed down on top of steel. Heat to and keep at a red heat for from two to four hours. Do not disturb the box until cold.—B.P.G., of Mass.

CLOTH ROLLS.—Cover cloth rolls with No. 3 sand paper. To prepare it, go over each sheet on the back side, with a sponge wet enough so to damp stretch the paper, piling the sheets back to back, and face to face as fast as dampened, that they may get seasoned. The sheets being all ready, turn the pile upside down, and if the paper feels only slightly damp, proceed with the glueing on, taking care that the sheets are well matched. Much better than emery.—B.P.G., of Mass.

TEMPERING SPIRAL SPRINGS.—Heat to a cherry red in a charcoal fire, and harden in oil. To temper, blaze off the oil three times, the same as for flat springs.—B.P.G., of Mass.

BLUEING SMALL ARTICLES.—Pistol barrels and articles of that kind, are blued as follows: Having a quantity of charcoal ashes on an iron plate, or in a box, place over the fire, and heat slowly. Put the articles to be blued in the ashes, and as they get heat up, take out occasionally to see how the color is drawing. When the color is a blue, do not take them out, but leave them until they have become white again, when they should be taken out and allowed to cool. Now, by returning the articles and reheating, you will have the "second blue." The first blue will rub off easily, the second blue will wear quite a long time, but in order to get a good color, the articles should be highly polished, and free from grease of any kind, and in no case should the articles be dipped in oil or water, before or after blueing, unless you wish to spoil the color.—B.P.G., of Mass.

NOISY GEARS.—I think that the trouble with S. B.'s gears is in the teeth not being of the proper curve, or being irregular. If he will measure some of the teeth and spaces, I should not be surprised if he found quite a variation in them, and if so, the remedy would be a new pair that are right.—B. P. G., of Mass.

EXPLANATION WANTED.—If K. will key a 12 inch cast iron head on his boring bar, using a side tool with the cut of the tool ground at an angle of about 30° with the shank, clamped on the head in such a position that it cannot spring into the work, I think that he will not have any trouble in boring his cylinder, provided that his cylinder is firm.—B. P. G., of Mass.

NOISY GEARS.—If it is a ringing noise that S. K. wishes to stop, let him wind the arms of his gear wheel with strips of cloth.—R. S.B.

LATHE.—The only trouble with K.'s lathe is, that the Λ in the sliding carriage fits the Λ on the shears too tight; they bind on each other's sides, instead of on the top and bottom. If he will plane the sides of the Λ of the carriage off so that it will bind on top of the Λ, he will find his trouble from breaking feed gearing will end, as the friction will be less. —R. H., of Mass.

S. R. and D. R. R., asks: Can a locomotive engine with five feet driving wheels, run sixty miles per hour? and says further: "I know that higher speed has been obtained, but with much larger drivers. We have new straight boiler, double dome Baldwin engines, 15 x 24 and 16 x 24 cylinders. A hundred miles of the track is new fish bar iron, and the road is in good order. I don't believe an engine will feed with the ordinary pump (attached to the crosshead) running at that rate, nor do I believe that the drivers can be made to run five revolutions per second, which, if done, would only carry the engine 4,710 feet, or 570 feet less than a mile in one minute. Six revolutions per second amounts to only 372 feet more than a mile in one minute. An answer will settle the argument for and against, and your authority will be conclusive."—We do not believe the speed named was ever attained with five foot drivers.

POUNDING IN CYLINDER.—I am running a 75 horse engine Dunbar packing, Judson governor, and globe valves in the ends of cylinder. My engine commenced pounding in the cylinder. I took off the follower, and found the rings too loose between the piston and follower. I had new ones put in, and the trouble ceased. Am inclined to think the same is the trouble with S. E.'s engine.—E. F. S., of Conn.

INK.—Let A. S. take 2 ounces of Arnold's Japan ink, 1 ounce of a very pale preparation of India ink, 1 ounce of best carmine ink. Let it stand one week before using. Thin, when necessary, with weak tea, never with water.—R. W. B., of Wis.

FIXING PENCIL OR CHALK MARKS.—J. H. R. asks for a ready way of fixing pencil marks. The following rule will render chalk or pencil drawings permanent. Lay the drawing on its face, and give the back two or three thin coats of the following, No. 1, mixture; let it dry and turn it with the chalk or penciling upwards, and give that side one or two coats also. Lastly, give it one or two coats of No. 2. This last is optional: the first doing the required work. No. 1. Isinglass or gum arabic, 5 parts; water, 12 parts. No. 2. Canada balsam, 4 parts; turpentine, 5 parts.—G. G. R.

PLUMB RULE.—I see "A Maine Carpenter" asks if the Southern and Middle States use the old time honored implement, the plumb bob. I can answer in the negative. We sometimes see them used by brick and stone layers, and I suppose they prefer them because the roughness of their materials so quickly destroys the edges of the tool. I use the most improved adjustable spirit level and plumb, and when I wish to prove it, I use the same plan I gave in a former letter, which I thank you for publishing, and which I see the "Maine Carpenter" admits as good, though he speaks of a better one; which you have asked for, and which I hope soon to see.—A GA. CARPENTER.

DRAWING INK.—W. R. S. can make a very black and indelible drawing ink by dissolving shellac in a hot aqua solution of borax, and rubbing up in this solution a fine quality of Indian ink. After using, he should dip his drawing pen in alcohol, and wipe dry to keep it clean and bright.—W.W.

BELTS.—I answer F. E. H. that belts run to the highest parts of pulleys, because they are tighter on those parts.—J. B. L., of Mass.

ROACHES.—Borax is a sure roach killer, and is perfectly harmless to children. Sprinkle powdered borax about roach holes, and they will disappear in a few weeks.—W.E.S.F.

DITCH FOR FISH POND.—Make the grade not more than one in two hundred (1-200), else the water will be muddy, and will rapidly ruin the ditch.—W.E.S.F.

SOLVENTS FOR RUBBER.—Rubber will dissolve in spirits of turpentine, in ether, or in bisulphide of carbon.—W.E.S.F.

STAINS OF IRON AND QUININE.—Wash with dilute muriatic acid, and rinse thoroughly with water. This will remove all iron stains.—W. E. S. F.

FIREPROOF WHITEWASH.—Make ordinary whitewash and add one part silicate of soda (or potash) to every five parts of the whitewash.—W. E. S. F.

SOLDERING OLD WARE.—Let L. E. A. use sal ammoniac instead of zinc and muriatic acid, and the difficulties mentioned will be overcome.—W.E.S.F.

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.

APPLICATIONS FOR EXTENSION OF PATENTS.

DOOR SPRING.—Edward P. Torrey, of Jersey City, N.J., has petitioned for an extension of the above patent. Day of hearing, August 23, 1871.

MACHINE FOR CLEANING RICE.—Wilson Ayer, Washington, D.C., has petitioned for an extension of the above patent. Day of hearing, August 30, 1871.

GAS GENERATOR.—John Butler, New York city, has petitioned for an extension of the above patent. Day of hearing, August 30, 1871.

EDGE PLANE FOR TRIMMING BOOT AND SHOE SOLES.—Isaac A. Dunham, North Bridgewater, Mass., has petitioned for an extension of the above patent. Day of hearing, September 6, 1871.

STEAM GENERATOR.—Finley Latta, of Cincinnati, Ohio, has petitioned for an extension of the above patent. Day of hearing, October 4, 1871.

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.

Inventions Patented in England by Americans,

May 16 to May 29, 1871, inclusive.

[Compiled from the Commissioners of Patents' Journal.

EYELET.—H. N. Smith, B. F. Carver, C. W. McCune, New York city.
HEATER.—S. A. Hill, C. F. Thumm, Oil City, Pa.
LOCK SEAL.—F. W. Brooks, New York city.
PRINTING BLOCKS.—M. Laemmel, New York city.
PRINTING TELEGRAPH.—M. Lefferts, New York city.
TELEGRAPH.—T. M. Foote, C. A. Randall, Brooklyn, N. Y.
VISE.—J. Simpson, Cleveland, O.
WIRE FASTENING.—H. W. Putnam, Bennington, Vt.
WORKING STONE.—T. W. Baxter, Chicago, Ill.

Foreign Patents.

The population of Great Britain, is 31,000,000; of France, 37,000,000 Belgium, 5,000,000; Austria, 36,000,000; Prussia, 40,000,000; and Russia, 70,000,000. Patents may be secured by American citizens in all of these countries. Now is the time, while business is dull at home, to take advantage of these immense foreign fields. Mechanical improvements of all kinds are always in demand in Europe. There will never be a better time than the present to take patents abroad. We have reliable business connections with the principal capitals of Europe. A large share of all the patents secured in foreign countries by Americans are obtained through our Agency. Address MUNN & Co., 37 Park Row, New York. Circulars, with full information on foreign patents, furnished free.