there any kind of oil that can be added to give more body to the varnish, and at the same time have no in jurious effect on the tone? A. Use best French spirit copal or amber varnish. It is much cheaper and more satisfactory to buy than to attempt making either of these. 2. Also a good stain for staining them so they will look well? Have used extract of logwood, but the color is too red. A. Use a warm solution of one ounce bichromate of potash in a pint of water, and touch up with nitricacid diluted with an equal volume of water if necessary. 3. Can you give me any information about the cutting of gear wheels for screw cutting lathes? I mean particularly the size of a train for cutting any particular number of threads to the inch, say, for example, twelve threads. What size should they be beginning with one on spindle? How many teeth to each wheel, and what size mesh? Can you refer me to any good work on the subject, one that is easy understood? A. The makers of lathes arrange the sizes of gears to accommodate the distance between the center of the lathe head and the driving screw. The pitch of the thread on the driving screw must first be decided; then the sizes of the train wheels are to be computed by the number of teeth; then the pitch multiplied by the number of teeth gives the diameters. Much judgment and experience is needed in deciding the pitch or size of the teeth and arranging the best proportion. Would advise you to study the gears on the lathes in a machine shop. See "Notes and Queries," No. 31, page 322, May 20, 1882. Martin on Screw Cutting, and ${\bf Joynson\ on\ Gearing\ are\ good\ works.}$

(17) H. O. T. writes: I would be pleased to have you give the receipt for a paste which is used by binders in making tablets, so that there is no necessity of pasting a strip of paper over the part that is glued together. The paste is colored a high color to suit the taste of the patrons. The tablets are not glued first, only thick paste put on the whole lot to be made, and afterward, when dry, a knife is run through where the tablets are to be parted, making an easy and neat looking job? A., The composition is said to be prepared as follows: Glue, four pounds; glycerine, two pounds; linseed oil, half pound; sugar, one-quarter pound; aniline dyes, q. s. to color. The glue is softened by so aking it in a little cold water, then dissolved together with the sugar in the glycerine, by aid of heat over a water bath. To this the dyes are added, after which the oil is well stirred in. It is used hot. Another composition of a somewhat similar nature is prepared as follows: Glue, one pound; glycerine, four ounces; glucose sirup, about two tablespoonfuls; tannin, one-tenth ounce. Give the compositions an hour or more in which to dry or set before cutting or handling the pads.

(18) H. H. H. writes: I am engaged in making artificialice, and on account of alkali and other impurities in the water the ice is not clear. The water is frozen in cans one foot square and three feet long, making a block of ice the same size. The center of the block is not good, owing to the outside freezing first, and the impurities in the water going to the center and freezing last. Now I wish to know what to put in the water to precipitate it that will not make the water taste or be injurious, as the ice is used for a great many purposes. Or, how can I purify the water to make my ice clear? A. It is very difficult to purify water economically so that it may be artificially congealed in clear cakes. Perhaps the most effectually remedy is to boil the water and then filter it through charcoal. Ordinarily no simple addition to or doctoring of the water will

MINERALS, ETC.—Specimens have been received from the following correspondents, and examined, with the results stated:

A. G.-1. Quartz with silver glance. 2. Obsidian .-D. J. C.-Both are fine grained sandstones, and No. 1 would make a fine building material, as it contains but little iron. No. 2 is inferior for this purpose. - J. S. R. -No. 1. Quartz, holding a green mass of hornblende. No. 2. Crystals of calcite-carbonate of lime. No. 3 was not large enough to test. No. 4. Carbonate of copper, malachite, and red oxide of copper, with a small proportion of silicate of copper, crysocolla. No. 5. Mispickel, sulpho-arseniate of iron-sulphur, arsenic, and iron -C. E. P.-Sample A, Copper pyrites-zinc blende and iron pyrites in quartz, probably contains gold and silver, but not in quantity. An assay would be advisable. B, Crystals of chondrodite in granular limestone, of no metallurgical value. C, Crystals of quartz in a quartz gangue, containing gold and possibly silver. An assay will be necessary to determine the amounts. D, Copper pyrites, with malachite in quartz, which holds silver. Small unlabeled piece in package with D, chondrodite and rutile on granular limestone (of no value).

[OFFICIAL.]

INDEX OF INVENTIONS

Letters Patent of the United States Were Granted in the Week Ending October 24, 1882,

AND EACH BEARING THAT DA'TE.

[Those marked (r) are reissued patents.]

A printed copy of the specification and drawing of any patent in the annexed list, also of any patent issued since 1866, will be furnished from this office for 25 cents. way, corner of Warren Street, New York city. We also furnish copies of patents granted prior to 1866;

But at increased cost, as the specifications not be a specification not patent desired and remit to Munn & Co., 261 Broadalso furnish copies of patents granted prior to 1866; Buell 266.579 F but at increased cost, as the specifications not being Fire extinguisher for railway cars, H. Purdy ... 266.311 printed, must be copied by hand.

Abrading disk, E. B. Call..... 266,346 Fork. See hay fork.

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y e	Bath tub, W. W. Rosenfield	266,531	G
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r	Bird perch, G. B. Thorpe	266,555	G
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Bushing material, G. F. Senter, New York city. Clock, J. Lindauer, New York city. Elastic fabric, manufacture of, T. H. Ball, Chicago, Ill. Elevator, A. D. Fox, New York city.

Frame for bedsteads, etc., B. J. La Mothe, M.D., New York city.

Grain drier. H. Cutler et al., N. Wilbraham, Mass.

Hides, machine for scouring, C. Holmes, Boston, Mass. Hides, treating, W. Maynard, New York city. Horseshoe calk sharpener, F. A. Roe, New York city. Paper bag machinery, M. N. Stanley, New York city. Spinning machinery, F. Gebhart, New Albany, U. S. Sulphuric acid, concentrating, J. Gridley, Brooklyn,

Telephone, J. P. Stabler, Sandy Spring, Md. Tricycle, H. C. Bull, Brooklyn, N. Y.

Adrertisements.

Inside Page, each insertion - - - 75 cents a line. Back Page, each insertion - - - \$1.00 a line.

(About eight words to a line.)

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THE "RIGHT SPEEDY Corn Sheller.

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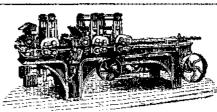
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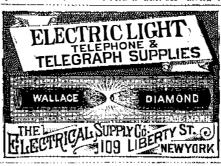
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