Business and Personal.

The Charge for Insertion under this head is One Dollar a line for each insertion; about eight words to a line. Advertisements must be received at publication office as easily as Thursday morning to appear in next issue.

Assays and Analyses of ores and all commercial products. Advice given and investigations made in all branches of chemical industry. Send for circular. N. Y. Assay Laboratory, 49 Broadway, New York.

Lehigh Emery Wheels emit no offensive odor ; do not gum or glaze; are free cutting, safe, and very durable. Write for catalogue and prices to Lehigh Valley Emery Wheel Co., Lehighton, Pa.

Wanted .- Description, prices, and what commission will be given on all kinds of agricultural machines used in the South. Address H. H. Thorpe, Liberty Hill, Texas.

Silvered Glass Equatorial Telescopes. 'Ready---I'wo 61/211, \$170 each; one 81/211, \$265. Eye-pieces and Finder. Complete performance guaranteed. J. A. Brashear, Pittsburg, Pa.

Wanted .- A second-hand centrifugal machine for liquids. Address, with description and price, P. O. Box 96, Boston, Mass.

Small patented articles, or light machinery, made and introduced. Gaynor& Fitzgerald, New Haven.Conn.

An author's reputation was made by the pen; the pen he used was made by Esterbrook; the reader is requested to name the concluding proposition.

Woodworking M'ch'y. Bentel, Margedant & Co., p. 318. Steam Hammers, Improved Hydraulic Jacks. and Tube Expanders. R. Dudgeon, 24 Columbia St., New York.

Diamond Planers. J. Dickinson, 64 Nassau St., N. Y. Lubricator. See advt., Detroit Lubricator Co., p. 318, given to inquirers. 50,000 Emerson's Hand Book of Saws. New Edition. Free. AddressEmerson,Smith&Co., Beaver Falls, Pa. Bostwick's Giant Riding Saw Machine, adv., page 318. Gould & Eberhardt's Machinists' Tools. See adv., p. 316.

For Heavy Punches, etc., see illustrated advertisement of Hilles & Jones, on page 318.

Barrel, Key, Hogshead, Stave Mach'y. See adv. p.318. Paragon Drawing Paper is the only reliable. Send for samples. Keuffel & Esser, 127 Fulton St., New York. Magic Lanterns and Stereopticons of all kinds and

prices. Views illustrating every subject for public ex-hibitions, Sunday schools, colleges, and home entertainment. 116 page illustrated catalogue free. McAllister, Manufacturing Optician, 49 Nassau St., New York.

See New American File Co.'s Advertisement, p. 318. Vertical Engines, varied capacity. See adv., p. 316.

Drop Hammers, Power Shears, Punching Presses, Die Sinkers. The Pratt & Whitney Co., Hartford, Conn. For best low price Planer and Matcher, and latest

improved Sash, Door, and Bini Machinery, Send for catalogue to Rowley & Hermance, Williamsport, Pa. The only economical and practical Gas Engine in the market is the new "Otto" Silent, built by Schleicher.

Schumm& Co., Philadelphia, Pa. Send for circular. Steam Pumps. See adv. Smith, Vaile & Co., p. 316.

The Porter-Allen High Speed Steam Engine. Southwork Foundry & Mach. Co. 430 Washington Ave., Phil. Pa. without any addition if used hot; or it may be thinned $Common\,Sense\,Dry\,Kiln.\ Adapted\ to\ drying\ of\ all\ maintain and the sense and the$ terial where kiln, etc., drying houses are used. See p.318.

The Sweetland Chuck. See illus. adv., p. 318.

Knives for Wood working Machinery Bookbinders, and Paper Mills. Taylor, Stiles & Co., Riegelsville, N. J.

For Sale.-Iron Planer, 50' x 54'' x 16 ft.; engine lathes, 25" x 20ft., 21" x 8 ft.; also six other lathes of various sizes, in A No. 1 condition. Apply to or address John Steptoe & Co., 24 W. Second St., Cincinnati, O.

For Mill Macb'y & Mill Furnishing, see illus. adv. p.300. Red Jacket Adjustable Force Pump. See adv., p. 302. Woodwork'g Mach'y. Rollstone Mach. Co. Adv., p. 302.

The Double Induction Motor and Automatic Battery, Griscom's patents, are manufactured and for sale by the Electro Dynamic Co., Philadelphia. This little electric motor, illustrated and described in our editorial, June 24, 1882, is now on exhibition at the American Institute Fair, Alcove 14, New York. Power from 1,000 to 6,000 ft. Ib., according to battery. Weight 2½ ib. The only prac-tical power for driving the family sewing machine, small athes, dental and surgical instruments, etc. 1,000 stitches per minute on the sewing machine. 7,000 revo lutions per minute on dental tools. Apparatus complete for sewing machines, lathes, \$35 and \$49. Dental apparatus, nickel plated, complete, \$50.

Cope & Maxwell M'f'g Co.'s Pump adv., page 285.

The Berryman Feed Water Heater and Purifier and Feed l'ump. I. B. Davis' Patent. See illus. adv., p. 285. For Pat. Safety Elevators, Hoisting Engines, Friction Clutch Pulleys, Cut-off Coupling. see Frisbie's ad. p. 286. Mineral Lands Prospected, Artesian Wells Bored, by

Pa. Diamond Drill Co. Box 423. Pottsville, Pa. See p. 286. C. B. Rogers & Co., Norwich, Conn., Wood Working Machinery of every kind. See adv., page 286.

4 to 40 H. P. Steam Engines. See adv. p. 286. Sheet and cast brass goods, experimental tools, and

Jas. F. Hotchkiss, 84 John St., N. Y .: Send me your bit? A. We know of no better bit than the one known ree book entitled "How to Keep Boilers Clean," containing useful information for steam users & engineers (Forward above by postal or letter; mention this paper.) Steel Stamps and Pattern Letters. The best made, J. F.W.Dorman,21 German St., Baltimore. Catalogue free. For Power & Economy, Alcott's Turbine, Mt.Holly, N. J. Presses, Dies, Tools for working Sheet Metals, etc. Fruitand other Can Pools. E. W. Bliss, Brooklyn. N. Y. Presses & Dies (fruitcans) Avar Mach.Wks., Salem,N.J. Split Pulleys at low prices, and of same strength and appearance as Whole Pulleys. Yocom & Son's Shafting

Works. Drinker St., Philadelphia, Pa.

mation on any special engineering. mechanical, or scientific subject, can have catalogue of contents of the Sci-ENTIFIC AMERICAN SUPPLEMENT sent to them free The SUPPLEMENT contains lengthy articles embracing the whole range of engineering, mechanics, and physi-cal science. Address Munn & Co. Publishers, New York. Machinery for Light Manufacturing, on hand and built to order. E. E. Garvin & Co., 139 Center St., N. Y.

Presses & Dies. Ferracute Mach. Co., Bridgeton, N. J.



HINTS TO CORRESPONDENTS.

No attention will be paid to communications unless writer.

We renew our request that correspondents, in referring to former answers or articles, will be kind enough to than seven-tenths to eight-tenths of a horse power. 3. name the date of the paper and the page, or the number of the question.

Correspondents whose inquiries do not appear after a reasonable time should repeat them. If not then pub- orifice should the water run through? A. An opening lished, they may conclude that, for good reasons, the Editor declines them.

Persons desiring special information which is purely of a personal character, and not of general interest, sbould remit from \$1 to \$5, according to the subject, as we cannot be expected to spend time and labor to obtain such information without remuneration.

Any numbers of the SCIENTIFIC AMERICAN SUPPLE-MENT referred to in these columns may be had at this

office. Price 10 cents each. Correspondents sending samples of minerals, etc., for examination, should be careful to distinctly mark or label their specimens so as to avoid error in their identification.

(1) F. S. B. asks: Is there anything that will destroy the buffalo carpet bugs? A. One of the surest remedies for this pest that we know of is benzine, if thoroughly applied.

gas tar and apply to felting to make a fair roofpitch of roof 1 ft. in 15? A. The pitch can be used somewhat with naphtha, and applied cold. In either case the felt should be roller-squeezed to equalize the Air brake for railway cars, automatic, W. J. Ford, 266684 absorbed substance, and drive outany large excess of it. Thus prepared, it can be used on a roof pitched 1 in 15 verv well.

(3) R. F. H. writes: I have a sliding lens three-quarters of an inch diameter on a photographic camera. By use, the slide has come to work loosely in the mount, so that after focusing, in the subsequent manipulation of inserting diaphragm and nncapping for exposure, the slide is moved and the focus disturbed. Both slide and mount are of steel (or an alloy), nickel plated, turned on a lathe. How can l effect less freedom of motion of the slide in the mount? Would any sort of sticky substance answer, and if so, what? A. We have found the following to give satisfaction in similar cases. Remove the lens from the inner tube, warm the tube as hot as the hand can bear, then with a wide brush coat its outside evenly and quickly with shellac varnish as sold ready prepared. If this does not make it tight, give it another coat in a similar manner, and when found to fit snugly, rub over the surface with the fingers anointed with a little sperm oil, lightly wiping off any excess of oil with a clean soft rag or piece of chamois skin. Adhesive substances are objectionable, as they gather dust and harden and are unpleasant to handle. In some camera tubes the outer or stationary tube is lined with velvet. Perhaps yours is of this kind; if so, try relining the outer tube.

(4) A. N. H. writes: I am building this sean, and use best pine shingles for roof, and intended to dip them in a bath of lead and oil, but find it will cost \$3.00 per thousand for the bath, which on a large roof is quite an item. Can you tell me whether I can use some preparation of coal tar or lime or some cheap oil for the bath; it is intended only to fill the pores of the wood, and preserve the shingles? I intend to paint them with

as the auger bit, that has the lip turned up instead of the old fashioned leading lip, which heats and wear away rapidly when driven hard. They are much used for mortising door frames. All reputable hardware houses keep these on sale.

(8) R. B. M. asks what polishing material is made of, called composition for polishing brass, iron, nickel, and steel; the different grades and the quantity of each ingredient for mixing the same? A. They are generally made of sesquioxide of iron mixed up with oil and pressed into bars, using finest of the oxide for the different metals as is best determined by experi-Supplement Catalogue .- Persons in pursuit of infor- ence. Frequently some sal ammoniac in powder is mixed in to the extent of twenty per cent, when the polish is to be used for gold or iron

> (9) W. J. F. asks: What liquids do manufacturers use in making "barrel paints," blue and white? The paints are made to dry very quickly, with a gloss, and are very cheap. A. Ultramarine blue mixed with a little boiled linseed oil in turpentine, and white lead similarly mixed for white.

(10) D. B. V. writes: I have a shaft 5 feet long on which there are four wheels, all of which weigh about one hundred and ten pounds, i.e., the shaft and wheels together. One of these wheels is a water wheel, 32 inches in diameter, having 12 buckets, which are 5 inches deep and 71/4 inches long or across the wheel. Upon this wheel I had a stream of water 7 inches long by 2½ thick, under a 1016 inch head. I thus obtained quite some power, but I do not know how accompanied with the full name and address of the much, nor do I know how to find out. How much | power did I obtain? A, Not over one-tenth or one-Names and addresses of correspondents will not be ninth of a horse power. 2. Can I obtain 11 horse power by using 100 gallons of water per minute under a 15 or 18 inch head? A. With 18 inch head not more Can I obtain 11/2 horse power by using 200 gallons of water per minute under 15, 18, 20, or 24 inch head? A. Yes, under 20 inch or 24 inch head. 4. What size of 40 to 48 inch area, which can be reduced by a gate to suit demand.

[OFF1CIAL.]

INDEX OF INVENTIONS

FOR WHICH

Letters Patent of the United States were Granted in the Week Ending

October 31, 1882,

AND EACH BEARING THAT DATE.

[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. thoroughly applied. (2) J. A. C. asks: What can I mix with patent desired and remit to Munn & Co., 261 Broad-as tar and apply to felting to make a fair roof— 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 being printed, must be copied by band.

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	Door, barn, J. J. Johnston	266,829
•	Door bolt, A. C. Blayney 266.600, Door check, pneumatic, G. R. Elliott	266,795
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: !	Folding joint, J. S. Burton Folding table, F. F. Atkinson	
	E- Jacob Dishe day & Manakara	000 000

fine machinery. Estimates given when models are fur-	a good coat of lead and oil after they are on. A. You	Button, J. Costello 266,611	Furnace. See Boiler furnace.
nished. H. C. Goodrich, 66 to 72 Ogden Place, Chicago.	can preserve the shingles and render them waterproof	Button fastener, F. A. Smith, Jr 266,652	Furnace grate, J. R. Fish 266,801
Improved Skinner Portable Engines, Erie, Pa.	by putting them through a bath of warm or hot "dead		Gauge. See Marking gauge.
Engines, 10 to 50 horse power, complete, with gover-	oil," one of the products of coal tar. The oil is quite	Button fasteners, apparatus for securing, A. G.	Galvanic batteries, containing vessel for, C. A.
	ahaan	Wilkins 266,940	
nor. \$250 to \$550. Satisfaction guaranteed. Nearly seven		Button fastening, G. W. Prentice 266.883	Garment clasp, W. W. Anderson 266.948
hundred in use. For circular address Heald & Morris	(5) L. C. asks: Will you kinely inform me	Button, separable, D. Humphreys (r) 10,227	Gas and oil burner, combined, J. H. Kidder 266,631
(Drawer 127), Baldwinsville, N. Y.	as to the best method of dissolving white sheliac?	Can. See Milk transporting can Paint stirring	Gasburner. Cook & Piper
25'' Lathes of the best design. G. A. Ohl & Co.,	Have tried alcohol. A. Try absolute alcohol.		Gas burner, J. G. Miller 266,634
East Newark, N. J.	(6) II (1 colors 1 What is the best form of	Car chimney, railway. C. A. Dubey 266.787	
Collection of Ornaments.—A book containing over	(6) H. C. asks: 1. What is the best form of	Car coupling, L. I. Hinkle 266,822	
1,000 different designs, such as Crests, Coats of Arms,	electric engine"? A. For small motors the Trouve	Car coupling, G. K. Hoff 266,823	
Vignettes. Scrolls, Corners, etc., will be mailed free on	form is best; for larger motors the Siemens or Gramme	Car coupling, D. E. Kelley 266.839	
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First Class Engine Lathes, 20 inch swing, 8 foot bed,		('ar whee', A. Cottrau	
now ready. F. C. & A. E. Rowland, NewHaven, Conn.	have no dead points.		Hame clip, C. M. Derrick 266,678
	(7) J. H. asks: What kind of a bit can I get	Dysart	Harness mounting, P. Petry 266 881
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Breweries, etc. Pictet Artificial lce Co. (Limited), 142		Lockwood 266,703	
Greenwich Street. P. O. Box 3083, New York city.	of hardwood without choking-I mean a quarter inch	Carpetstretcher, J. A. Risdon 266,893	Appleby