- (32) I. P. H. asks how to manufacture the gas and inflate some 3 or 4 dozen rubber toy balloons? A. Place a few ounces of clean scrap zinc in a stout half gallon bottle and pour over it a cooled mixture of 1 part oil of vitriol and 5 parts water. Stop the mouth of the bottle with a rubber stopper through which has been fixed a short piece of glass tubing of size suited to fit the mouth of the balloon. Exhaust the bag of air and tie it on the glass tube. When sufficiently dilated tie the mouth with thread and flow the dilated bag with a thin alcoholic solution of colored wax, collodion, or
- (33) E. J. S. asks how to preserve the feet and external parts of stuffed animals? A. Dissolve about 1/2 oz. corrosive sublimate in 1 pint alcohol and apply with a soft brush. If it leaves a white precipitate dilute with alcohol until it does not. A correspondent strongly recommends this recipe.
- (34) H. L. W. writes: You say apply muriatic acid diluted with 5 or 6 times its quantity of water, and after a minute or two wash with clean water. I have tried it and could not make it work. How shall I apply it so it will? A. The recipe referred to the common-gallo-tannic iron-inks. Inks containing Prussian blue, indigo, logwood, chromium salts, and coal tar dyes are more or less indelible. You may try the riatic acid, strong muriatic acid, strong water of ammonia, solution of potassium ferrocyanide, strong chlorine water or hydrogen peroxide, solution of potassium cyanide. The liquids are traced on with a glass pen, and here. All such questions, when initials only are given, after standing a sufficient time, it is covered with warm (dry)tripoli powder (infusorial silica) or pipe clay, which our paper to print them all; but we generally take pleasabsorbs the liquid or ink solution. 2. You also say a solution of oxalic acid, citric acid, and tartaric acid: is given. may be applied where there is printing, as it will not attack the printed text. Do you mean all the acids equally, or either one reduced with water? A. The solid organic acids-citric, tartaric, oxalic, etc.-are dissolved in a small quantity of warm water.
- (35) N. L. gives the following method of truing an emery wheel without a diamond: Hold a piece of white chalk against the wheel while in motion. This will show you the high places. Then take a pick of the kind used to dress millstones, or make one of a | tisement in the column specified, by parties able to supfile about five inches long, wedged in a stick like a mill- ply their wants: er's pick. Hack the chalked places and keep chalking and hacking, rubbing over with an old file each time before chalking, until the wheel is true and the chalk
- (36) E.P.O. asks (1) the mode of constructing an electric engine of 3 horse power? A. You will find a description of an electric engine on p. 184 of our issue of September 22, 1877. 2. How many cells of Daniell's battery, also how many plates of Smee's battery, would be required to run the engine so constructed? A. The amount of battery power required will depend on so many details that we cannot give an opinion. 3. What sized wire and how long must I have for helix? A. If you make an engine on a scale six times the size of the cut Fig. 1-then about 30 lbs. of No, 16 copper wire, cotton-covered, would be a good size and quantity to wind on the iron cores, D, and 40 lbs. of No. 12 copper wire, cotton-covered, for the cores A A. Let the width of the engine (as seen by a plam view) be such that the wire may be disposed so as to occupy about the same re. including both the specifications and drawings, will be lative space as it does in the cut.
- A heavy stick of timber is to be carried by three men. and remit to Munn & Co., 37 Park Row, New York city. One man is to carry one end, and two men are to use a Animal black, artificial, P. G. L. G. Designolle... 197,834 lever at a certain distance from the other end. $\,$ Atwhat distance from the shorter end must the lever be placed that each man may carry an equal part of the weight, no allowance being made for the weight of the lever? A. Supposing the stick to be uniform in section, the man at the end applies his force at the end of a lever equal to half the length of the stick: and as the other two men apply twice as much force they must apply it at the end of a lever one half as long as the preceding. or at one fourth the length of the stick from the other
- (38) E. C. N. asks: If I should wind a few feet of wire around a strong magnet, can I geta current of electricity so I could run a relay? The other night while I was testing some electro-magnets I received a very sharp shock by taking up one of the wires of my battery while the other wire was at least 10 feet from me on the brick floor. A. Not unless you open and close the magnetic circuit by means of an atmature, or in some way continually disturb the relative position of the magnetic field of the permanent magnet, on which thewire is wound. The shock you received is frequently felt under similar circumstances by the battery men who have the care of a large number of cells, used for the purpose of supplying the telegraphic lines with gal-
- turmeric root. It is sometimes necessary to filter the varnish. It is applied as usual. At first the varnish will seem to be a failure, but in a short time it will have a beautiful gold color.
- (40) J. S. H. asks how to prepare a jet black enamel? A. Black enamel is thus made: Peroxide of manganese 3 parts, zaffre 1 part. Mix and add as required to white enamel, which is: Washed diaphoretic antimony 1 part, fine glass, free from lead, 3 parts. Mix wet, pour into water, powder, melt again, and repeat this three or four times.
- (41) W. E. A. incloses a piece of "magic paper," and asks its composition. On being touched with fire it entirely disappears, ashes and all. A. It appears to be nitro-celludin-made directly from a pulp of gun cotton, or converted after coming from the papermachine by digestion for a few minutes in a mixture composed of equal parts of fuming nitric and fuming sulphuric acids, or fuming sulphuric acid mixed with pure dry saltpeter, and washing in water made slightly alkaline with sods. It is a dangerous article to

MINERALS, ETC.—Specimens have been re- | Fire escape, C. A. Gregory 197,727 ceived from the following correspondents, and Floor, fireproof, J. W. Hoyt 197.781 examined, with the results stated:

COMMUNICATIONS RECEIVED.

- On the Progress of Engineering.
- On Drawing on the Blackboard, On Telephonic Communications, By T. F. W.
- On the Calendar.
- On Golden Relics. By C. F. R.
- On the Manufacture of Surface Plates. By O. C. G. H

HINTS TO CORRESPONDENTS.

Correspondents whose inquiries fail to appear should following solvents in the order named: Water, alcohol repeat them. If not then published, they may conclude that and cold), citric acid, oxalic acid, dilute (pure) must hat, for good reasons, the Editor declines them. The address of the writer should always be given.

WANTS AND BUSINESS INQUIRIES.

INDEX OF INVENTIONS

A complete copy of any patent in the annexed list, furnished from this office for one dollar. In ordering, (37) M. A. N. sends the following problem: please state the number and date of the patent desired

 Bale tie, Bull & Koch
 197,824

 Bale tie, W. M. Seaman
 197,802

 Bating cotton, L. Beiten
 197,814

 Bee hive, J. N. Becker
 197,814

 Belt fastener, W. Ferguson
 197,726

 Belt shifter, T. N. Egery
 197,840

 Berth for vessels, self-leveling, D. Parks
 197,840

 Bright of shifters and the state of the Casting wheel tires, mould for, N. Washburn ... 197,753 Chair, opera, C. B. Demarest ... 197,723 Churn, Haptonstall & Preston 197,777
 Churn, W. McMurry
 197,786

 Churn, reciprocating, L. C. Roberts
 197,898
 (39) A correspondent sends a recipe for a gold lacquer for brass: Dissolve in about 12 ozs. alcohol turmerle root. It is sometimes necessary to filter the correspondent sends a recipe for a gold lacquer for brass: Dissolve in about 12 ozs. alcohol turmerle root. It is sometimes necessary to filter the correspondent sends a recipe for a clock and gas regulator mechanism, G. P. Ganster 197,771 clock, pendulum, H. J. & W. D. Davies 197,832 clothes wringer, N. B. Phelps. 197,833 cost, compression, W. Dodd Coffee mill, A. Reynolds...... 197,798 S Corset, I. D. Warner. 197,913 St Culinary apparatus, Lightfoot & Hawk 197,871 T Cultivator, I. S. Krick. 197,867 T Cup or can, sheet metal, G. W. Knapp. 197,865 T

 Digesting fibers, W. W. Harding
 197,850
 T

 Door check, A. Kehl
 197,893
 T

 Dovetailing and grooving machine. J. Dill
 197,895
 T

 Draw-heads, manufacture of, A. P. Lindsay 197,872

MINERALS, ETC.—Specimens have been received from the following correspondents, and	Fire escape, C. A. Gregory Fire escape, S. Root Floor, fireproof, J. W. Hoyt	197,899	N N N
examined, with the results stated:	Flower pot, J. A. Conway. Furnace, steam boiler, J. Pohlig	197,765	W II
J. G. P.—No. 1 contains ferric sulphides and a trace of gold—tellurides not present in sample. No. 2 is a	Gas dighting apparatus, R. R. Moffatt	197,842	W
quartzite containing magnetic pyrites, but no silver or bismuth. No. 3 will probably prove a rich silver ore—	Gas, raising and lowering, G. P. Ganster	197,712	W W
the sample contains argentiferous galenite and a little	Gate, J. W. Clark	197,828	W
COMMUNICATIONS RECEIVED.	Gate, G. H. Smith	197,906	•
The Editor of the Scientific American acknowledges	Grain-binding instrument, J. A. Pene	197,888	10
with much pleasure, the receipt of original papers and contributions upon the following subjects:	Grinding objects cylindrically, J. M. Poole (r)	7,978	10
On the Progress of Engineering. On Drawing on the Blackboard,	Grubber and stump extractor, J. Motheral Hame fastener, Basiger & Feely	197,812	
On Telephonic Communications. By T. F. W.	Harvester, R. Emerson (r)	197,767	re V
On the Calendar. On Golden Relics. By C. F. R.	Hay rake, horse, J. F. Thomas Health lift, E. A. Tuttle	197,750	÷
On the Manufacture of Surface Plates. By O. C. G.	Heater, Thorne & Farnsworth	197,749	
HINTS TO CORRESPONDENTS. We renew our request that correspondents, in referring	Hides or skins, bating, W. McMurtrie. Hinge, spring, A. Schweinfurt	197,801	B
to former answers or articles, will be kind enough to name the date of the paper and the page, or the number	Hoe, combination, D. A. Nelson	197,744	Ŀ
of the question.	Horseshoe calf sharpener, M. Colton	197,829 197,717	_
Correspondents whose inquiries fail to appear should repeat them. If not then published, they may conclude	Hose to couplings, securing, J. A. Caldwell Ice cutting machine, C. C. Springer	197,716	1
that, for good reasons, the Editor declines them. The address of the writer should always be given.	Ironing machine, P. O'Thayne	197,884	4
Inquiries relating to patents, or to the patentability of inventions, assignments, etc., will not be published	Jail cell, P. J. Pauly Keyfor locks, W. M. Griscom	197,887	•
here. All such questions, when initials only are given,	Lander, adjustable, G. Crawford	197,766	ì
are thrown into the waste basket, as it would fill half of our paper to print them all; but we generally take pleas-	Lamp chimney, S. B. Inglis	197,856	s
ure in answering briefly by mail, if the writer's address is given.	Laprobe, L. Briggs	197,821	\$
WANTS AND BUSINESS INQUIRIES.	Letter box, R. Hale Limb, artificial, G. L. Ridsdale.	197,849	v
Almost any desired information, and that of a business nature especially, can be expeditiously obtained	Lock, drawer, W. H. Taylor Locomotive engines, exhaust, J. T. Clark	197,910	
by advertising in the column of "Business and Personal," which is set apart for that purpose subject to	Locomotives, air-feeding, W. S. Hutchinson	197,730	
the charge mentioned at its head.	Loom for weaving hair cloth, M. R. Kenyon Malt and grain dryer, A. Palmer.	197,732	ri
We have received this week the following inquiries, particulars, etc., regarding which can probably be elici-	Mill for grinding tortilla, etc., J.H. Pendleton Millstone driver, W. E. Sergeant (r)		a
ted from the writers by the insertion of a small adver- tisement in the column specified, by parties able to sup-	Mining machine, F. M. Lechner	197,734	
ply their wants: Who makes hand presses for toilet soap?	Motor, spring, Brodnax & Cohen	197,822	A
Who makes musical bells for parlor use, chimed to	Mowing machine, M. L. Wood	197,921	
give notes and half notes? Who makes machinery for kiln-drying corn?	Nut lock, A. Woodward Oil wells, spear for, F. J. Fox	197,920	
Who makes surveyor's instruments, graded according to metrical measurement?	Oil wells, pitman, J. Sharp. Ore, concentrating, G. M. Rice, 2d.	197,743	
Who sells cuca leaves?	Ores, roasting, W. L. Imlay	197,855	
OFFICIAL,	Pailock, J. J. Turner Pail, milk, H. Dodge	197,911	
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Letters Patent of the United States were Granted in the Week Ending	Paper making, F. A. Cloudman	197,764	
December 4, 1877,	Pavements, steam roller for, N. B. Abbott Pen holder, fountain, E. E. Brailly	197,713	L
		101,000	
AND EACH BEARING THAT DATE.	Pianoforte, O. Lemcke Picture frame, C. Lippe.	197,736	E
AND EACH BEARING THAT DATE. [Those marked (r) are reissued patents.]	Pianoforte, O. Lemcke	197,736 197,738 197,779	J F
AND EACH BEARING THAT DATE.	Pianoforte, O. Lemcke Picture frame, C. Lippe. Pill machine, J. Hill. Pin fastening, breast, C. E. Smith Pitman, H. Essex. Planter, blind slat, R. S. Griffin	197,736 197,738 197,779 197,745 197,770 197,774	J R A
AND EACH BEARING THAT DATE. [Those marked (r) are reissued patents.] A complete copy of any patent in the annexed list,	Pianoforte, O. Lemcke Picture frame, C. Lippe. Pill machine, J. Hill. Pin fastening, breast, C. E. Smith. Pitman, H. Essex Planter, blind slat, R. S. Griffin Planter, corn, Bering & Barnes Plow, H. Wiard	197,736 197,738 197,779 197,745 197,770 197,774 197,818 197,918	J
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