Mrs. O. asks: How can I take the colors out of my organdie muslin without injuring the fabric? Answer: We have found, by a series of experiments, that, although green resists the action of chlorine and other powerful bleaching agents, Castile soap and elbow grease will remove it, if you only persevere. Washa few times with Castile soap, and bleach in the sun.

C. B. S. asks: What are barytes, what are they used, for and where are they sold? Answer: Barytes is chiefly employed for adulterating white lead. Itsellsfora low price, depending on the demand in a given section. Write to some dishonest paint manufac turer for his price. It is sometimes employed on wall papers and in dressing cotton goods.

J. H. P. asks for a freezing compound. Answer: We present several, from which he can select the one adapted to his use. 1. Pour muriatic acid upon pulverized Glauber salt. 2. Take 5 parts by weight of sal ammoniae, 5 parts saltpeter, 19 parts water. 3. Take 1 part common salt and 3 parts snow. 4. Take 3 parts chloride of calcium, and 2 parts snow or powdered ice.

T. asks: 1. Can paint brushes which have been aried hard with paint, or lineed oil in them be soft-ened in any manner so as to fit them for use again? 2. Where can I procure a small quantity of the paper used for making stereotype molds? Answers: 1. If not too far gone, they can be restored by soaking in benzine or turpentine. 2. The process is not simple enough in practice for an amateur. It will be cheaper for you to buy more type than to get all the machinery necessary for any sort of stereotyping.

C. P. A. asks: Is there danger in using certain fluids in lamps, among which may be mentioned gasoline, benzine, and naphtha, combined with small parts of salt, sal soda, alum, etc. Answer: Our advice is against risking life and property by the use of any burning oil or fluid which is more explosive than gunpovrder. General Van Bokkelen slept safely for a while over a mine of nitro-glycerin, and so you may burn naphtha and gasoline in safety for a while; but the explosion will come at some time in spite of alum or salt, and the damage will quite compensate for any saving of expense. Use good oil, or a tallow dip.

 $F.\ W.\ C.\ asks: 1.\ How can I$ determine the transverse strength of a barof wroughtiron, % of aninch thick and Sinches wide, supported at each end and built in masonry, so that it cannot move except in the direction of the pressure? The load is distributed over the wholelength, which is lifeet between supports. It is to support the thrust of an arch. 2. I have a turbine wheel of 25 inches diameter placed 21 feet above the water in the tail race. A tight iron tube, 30 inches diameter, leads to the tail race. The whole head and fall is 42 feet. Am I not losing much of my power? The wheelmakers say not, but I am 9,000 feet above sealevel does not that make a difference? Answers: 1. The breaking load in pounds =12 imes coefficient for transverse $\operatorname{strength} \times \operatorname{breadth}$ in inches \times square of the depth in inches \div length of clear span in feet. An average value for the coefficient of transverse strength is 2,400 pounds. Use from ½ to ½ of the breaking strain for a safe working

W. R. B. says: The principle of the caloric or hot air engine puzzles me. I cannot understand how the engine can force air into the heater against the same pressure which is applied to drive the piston of the engine. At the same time the area of the air pump is equal to that of the piston. For instance, in Wenham's air engine (illustrated in the SCIENTIFIC AMERICAN, page 370, vol. XXVIII) the same piston with an equal area forces air into the heater. Is not the resistance on the pump side of the piston, when the valves are open to communicate with the heater, equal to the power which is being applied on the under side of piston to drive the same? Why is there not an equilibrium (equal pressure on both sides), and why does not the machine come to rest? Answer: In the engine alluded to, the resistance on pump side, when the valves are open to communicate with the heater, is precisely the same as the pressure on the other side of the piston; and if this state of things were continuous throughout the stroke, the engine would stop. But as the volume of air on the working side of the piston, being highly heated, is greater than the volume of cool air that must be forced into the heater at each stroke, the engine, by means of the accumulated work in its fly wheel, is enabled to overcome the resistance.

F. B. says: I have a new engine, 24 x 48, high pressure, which gives excellent results; there are 3tubular boilers, 4 reet diameter, with 42 four inch flues, 15 feet long, with good draft; we carry 80 to 85 lbs. steam, and make with this machine about 500 barrels flour per day easily. I have thrown out an old engine; it is a Babcock cut-off (built in Brooklyn, N. Y.) of 23 inches bore, 48 inches stroke; the cut-off is a nulsance. How much power would I gain if I were to attach the latter engine to the same shaft, carrying 70 lbs, or from 80 to 85 bb. steam? I think, if I put this engine on, I would throw away the cut-off and make a plain slide valve engine. Answer: With the data furnished, we must give you an answer based on its and ands. If you work the old engine under the same conditions as the new (same piston speed, steam pressure, and point of cut-off), and if the old engine is in as good order as the new one, you should increase your power about 90 per

A. D. W. asks how to deposit a thin film of lead on iron, either by galvanic or other process. An swer: We know of no such process. You might try dipping the iron when perfectly clean, or by the aid of u

F. H. says, in reply to J. N. H., who asked if a turbine will give as good results for power as an overshot wheel: I run a 10 inch turbine, and it does as much work as an overshot wheel; the fall is 24 feet and about 50 cubic feet of water runs per minute. I generally run with % gate, and I find that it works nearly as well with partial as with full gate.

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

B. F. B.-Iron pyrites, of no value, except for making

sulphuric acid. $J.\,B.\,B.$ —Dark and light colored clays.

H. M. C. sends two specimens of micaceous hematite iron ore. We give a few of the characteristics which distinguish this valuable ore. Hardness, 5.5 to 6.5, scratches glass, not easily scratched by the knife. Specific gravity,45 to 53; color, steel gray to iron black, streak, cherry red or reddish brown. When heated on charcoal in reducing flame, becomes magnetic. Soluble

G. F. H.-Crystals of magnetic iron ore, which attract iron filings. Its composition is 72 per cent iron, 28 per cent oxygen. When rubbed on unglazed porcelain, it eaves a black streak.

S. M. P. and J. H. S .- Iron pyrites W. R. S .- Corundum, of little value. S. C. and J. M. B.—The clays sent contain no silver.

J. L. M.-Asilicate of alumina. It might be of use as polishing material. The specimen has a few crystals of sulphide | F of iron on one side. The mass is also pyrites, of no

W. C. C.—Contains a little iron and manganese.

COMMUNICATIONS RECEIVED.

The Editor of the Scientific American acknowledges, with much pleasure, the receipt of original papers and contributions upon the following subjects:

On Patent Rights. By J. E. T., J. W. H., T. W., and J. E. W.

On Easterly Air Currents. By W. L. W.

On Car Ventilators. By F. S. C.

On Psychic Force. By J. M. C. On the Truths of Nature. By J. M. B.

On Water Witching. By A. B.

On Soldering Irons. By J. A. F. On Work. By H. E. P.

On the Scientific American. By J. E. E. On the Cable Triumph. By H. C.

Also enquiries from the following : A. O. W .- H. W. P.-M. G. R.-C.

Correspondents who write to ask the address of certain manufacturers, or where specified articles are to be had, also those having goods for sale, or who want to find partners, should send with their communications an amountsufficient to cover the cost of publication under the head of "Business and Personal," which is specially devoted to such enquiries

[OFFICIAL.]

of Inventions Index

FOR WHICH

Letters Patent of the United States WERE GRANTED FOR THE WEEK ENDING July 1, 1873,

AND EACH BEARING THAT DATE.

[Those marked (r) are reissued patents.]

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Boots, nailer for lasting, W. E. Fischer, (r) 5,475 Boring bit, S. Hipkins. 140,370 Bortle, caster, A. Weber. 140,437 Bottle, caster, A. Weber. 140,538 Bottle, caster, A. Weber. 140,538 Bottle, caster, A. Weber. 140,539 Bottle storper, T. J. Mayall. 140,538 Brish, tooth, T. D. & W. O'Donoghue. 140,438 Bucklet, trace, T. Browniee. 140,439 Bucklet, trace, T. Browniee. 140,439 Bucklet, trace, T. Browniee. 140,439 Burner, tar and petroleum, J. Burns. 140,439 Burner, tar and petroleum, J. Burns. 140,439 Car basker, rallroad, G. W. Crowe. 140,339 Car basker, rallroad, J. F. Husson. 140,549 Car basker, rallroad, G. W. Crowe. 140,349 Car brake, rallroad, G. W. Crowe. 140,349 Car wentitator and guard, O. C. Rife. 140,539 Car wentitator and guard, O. C. Rife. 140,539 Carpet baster, Mowry & Pulls. 140,532 Carpet baster, Mowry & Pulls. 140,533 Chandeller stop light, R. Cornelius. 140,349 Chair and stop ladder, B. F. Green. 140,351 Chair and stop ladder, B. F. Green. 140,352 Shirt bosom supporter, G. F. Johnson. 140,439 Chandeller stop light, R. Cornelius. 140,349 Chandeller stop light, R. Cornelius. 140,349 Chandeller stop light, R. Cornelius. 140,349 Chandeller, G. B. D. Gullett. 140,353 Chandeller, G.				
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Bottle, caster, A. Weber				
Bottle, nursing, T. J. Mayall. Bottle stopper, T. J. Mayall. 140,336 Bridge, truss, Clarke, Bonzano & Griffen. 140,431 Bridge, truss, Clarke, Bonzano & Griffen. 140,432 Buckle, trace, T. Brownlee. 140,438 Burgles, shifting top for, R. C. Diehl. 140,339 Buckle, trace, T. Brownlee. 140,438 Burner, tar and petroleum, J. Burns. 140,435 Burner, tar and petroleum, J. Burns. 140,435 Care pitice, treating, G. C. Taylor. 140,435 Care basket, rallroad, J. F. Hudson. 140,539 Car brake, rallroad, J. W. Crowe. 140,349 Car brake, rallroad, J. W. Crowe. 140,349 Car coupling, S. Rogers. 140,549 Car coupling, S. Rogers. 140,549 Car wheel, A. Atwood. 140,349 Car yet sing machine, T. C. Kirkham. 140,359 Carpet stretcher, Michael & Duncan. 140,522 Shirt bosom support and brace, S. F. Long. 140,431 Chandeller drop light, R. Cornelius. 140,345 Chandeller drop light, R. Cornelius. 140,345 Chandeller drop light, R. Cornelius. 140,345 Chandeller drop light, R. Cornelius. 140,437 Chandeller drop light, R. Cornelius. 140,437 Chandeller drop light, R. Cornelius. 140,438 Chandeller drop light, R. Cornelius. 140,439 Chandeller drop light, R. Cornelius. 140,435 Chandeller drop light, R. Cornelius. 140,435 Chandeller drop light, R. Cornelius. 140,435 Chandeller drop light, R. Cornelius. 140,				
Bottles copper, T. J. Mayall. 140,517 Bottles, cap for, J. G. Chillingworth. 140,346 Bottles, cap for, J. G. Chillingworth. 140,346 Brish, tooth, T. D. & W. O'Donoghue 140,429 Brush, tooth, T. D. & W. O'Donoghue 140,429 Brush, tooth, T. D. & W. O'Donoghue 140,439 Bucket, well, G. F. Stites. 140,438 Bucket, well, G. F. Stites. 140,438 Bucket, et ace, T. Brownlee. 140,438 Bucket, trace, T. Brownlee. 140,438 Bucket, trace, T. Brownlee. 140,438 Bursh, trace, T. Brownlee. 140,438 Bursh, trace, T. Brownlee. 140,438 Bursh, trace, T. Brownlee. 140,435 Burner, tar and petroleum, J. Burns. 140,435 Burner, tar and petroleum, J. Burns. 140,435 Burner, tar and petroleum, J. Burns. 140,535 Burner, tar and petroleum, J. Burns. 140,438 Bursh, trace, T. Brownlee. 140,439 Bursh, trace, T. Brownlee. 140,435 Baw mills, dog for circular, J. Tabber. 140,439 Saw mills, dog for circular, J. Ghlin. 140,439 Saw mills, dog for circular, J. Ghlin. 140,439 Saw mills, dog for circular, J. Ghlin. 140,430 Saw mills, dog for circular, J. Ghl				
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Chandeller drop light, R. Cornelius. 140,345 Shutter, iron window, S. B. Munson, Jr. 140,565 Chandeller drop light, N. W. Williams. 140,565 Smoking tube, A. Gadies. 140,360 Chandeller, sliding or extension, J. Brannen 140,459 Cigar machine, J. T. Hennaman 140,501 Spring, door, A. Tittman 140,416 Spring, door, A. Tittman 140,416 Stove pipe shelf and drum, T. Bladen 140,415 Stove pipe shelf and drum, T. Bladen 140,451 Stove pipe shelf and drum, T. Bladen 140,535 Stove pipe shelf and drum, T. Bla				
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Cooler, liquid, J. R. Neil.	Cock, compression, E. Allt	140,337	Stove pipe thimble, H. Smith	140,553
Cotton gin, B. D. Gullett. 140,365 Cultivator, J. W. Doud. 140,481 Cultivator, Elwood & Pitcher. 140,353 Cultivator, Simpson & Ellacott. 140,487 Dash board bag, S. Hipkins. 140,461 Drawers, locking, W. F. Dalv. 140,481 Dress protector, A. Herrmann. 140,451 Dress protector, A. Herrmann. 140,451 Dress shield, I. M. Post. 140,538 Drill and bit stock, C. H. Amidon. 140,451 Eleyator, C. W. Collyer. 140,439 Elevator, C. W. Collyer. 140,435 Engine governor, E. Buss. 140,467 Engine governor, J. Hendy. 140,461 Engine governor, J. Hendy. 140,462 Sugar from cane, extracting, M. S. Bringler. 140,461 Sugar into blocks, cutting, Brunjes et al. 140,461 Sugar into blocks, cutting, Brunjes et al. 140,461 Sugar stirrer, maple, F. B. Graves. 140,465 Table, ironing, Frankenfeld et al. 140,361 Table, ironing, Frankenfeld et al. 140,362 Table, ironing, Frankenfeld et al. 140,361 Table, ironing, Frankenfeld et al. 140,461 Table, ironing, Frankenfeld et al. 140,361 Table, ironing				
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Cultivator, Elwood & Pitcher. 140,353 Sugar stirrer, maple, F. B. Graves. 140,361 Cultivator, Simpson & Ellacott. 140,437 Table, extension, W. Valentin. 140,365 Dash board bag, S. Hipkins. 140,416 Table, troning, Frankenfield & &. 140,355 Drewers, locking, W. F. Dalv. 140,451 Tailor's measure, J. A. Johnston. 140,507 Dress protector, A. Herrmann. 140,515 Tailor's measure, J. A. Edison. 140,507 Drill and bit stock, C. H. Amidon. 140,557 Telegraph, printing, T. A. Edison. 140,485 Drill guide and core barrel, G. Frisbee. 140,557 Telegraph, printing, T. A. Edison. 140,489 Edge tools, hardening, L. W. Stuart 140,390 Fhill coupling, A. J. Patterson. 140,489 Elevating machine, G. A. Dupuis 140,485 Thrashing machine, Elis, Hofman, & Lee 140,490 Engine governor, E. Buss. 140,467 Tiles, dressing, G. & V. G. Barney (r) 5,488 Engine governor, J. Hendy 140,414 Toy, L. Bryan. 140,402				
Cultivator, Simpson & Ellacott. 140,437 Dash board bag, S. Hipkins. 140,416 Drawers, locking, W. F. Dalv. 140,416 Dress protector, A. Herrmann. 140,415 Dress shield, I. M. Post. 140,535 Drill and bit stock, C. H. Annidon. 140,451 Drill guide and core barrel, G. Frisbee 140,537 Edge tools, hardening, L. W. Stuart 140,382 Elevating machine, G. A. Dupuis 140,483 Elevator, C. W. Collyer. 140,473 Engine governor, E. Buss. 140,467 Engine governor, J. Hendy. 140,414 Tobal product of the product of t			Sugar stirrer, maple, F. B. Graves	140,361
Drawers, locking, W. F. Daly				
Dress protector, A. Herrmann.				
Dress shield, I. M. Post.				
Drill and bit stock, C. H. Amidon.				
Drill guide and core barrel, G. Frisbee. 140,897 Edge tools, hardening, L. W. Stuart. 140,390 Elevating machine, G. A. Dupuis. 140,485 Elevator, C. W. Collyer. 140,473 Engine governor, E. Buss. 140,467 Engine governor, J. Hendy. 140,414 Toy, L. Bryan. 140,402 Toy, L. Bryan. 140,402				
Edge tools, hardening, L. W. Stuart. 140,390 Fhill coupling, A. J. Patterson. 140,382 Elevating machine, G. A. Dupuis. 140,485 Thrashing machine, Ellis, Hoffman, & Lee 140,491 Elevator, C. W. Collyer. 140,473 Thrashing machine, F. R. & W. O. Sutton. 140,440 Engine governor, E. Buss. 140,467 Tiles, & dressing, G. & V. G. Barney (r). 5,468 Engine governor, J. Hendy. 140,414 Toy, L. Bryan. 140,402	Drill guide and core barrel, G. Frisbee	140,857		
Elevator, C. W. Collyer 140,473 Thrashing machine, F. R. & W. O. Sutton 140,440 Engine governor, E. Buss 140,467 Tiles, dressing, G. & V. G. Barney (r) 5,468 Engine governor, J. Hendy 140,414 Toy, L. Bryan 140,402				
Engine governor, E. Buss. 140,467 Tiles, dressing, G. & V. G. Barney (r). 5,468 Engine governor, J. Hendy. 140,414 Toy, L. Bryan. 140,402				
Engine governor, J. Hendy				

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	Hame fastening, E. Covert	140,475
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	Hinge, J. W. Wood	140,449
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	Hoisting apparatus, G, A. Myers Hook, check, A. V. M. Sprague	140,427
į	Hook, snap, O. B. North	. 140,531
i	Horses from carts, releasing, G. H. Meier Hose coupling, J. W. Kennedy	
	Hubs to axles, attaching, O. F. Shepard	140,389
	India rubber rings, Collins & Longden	
	Iron, sheet, W. D. Wood (r)	. 5,474
	Kiln, brick, D. Blocher	. 140,343
	Ladder, step, C. Frizell Lamp, J. J. Walton	
	Lead, die for making sheet, N. York	. 140,567
	Leather working tool, J.S. Alexander Levees, inclined way for, J. Bradford	. 140,458
	Lever escapement, S. B. Terry	
	Lock, combination, P. W. Hall	. 140.500
	Lockfor doors, etc., T. Kromer Lock, seal, G. R. Junn	
	Log turner, I. W. Pool	. 140,386
	Loom shedding mechanism, G. Crompton Mallet, S. M. Willis	. 140,395
	Mask for bee keepers, protecting, L. C. Huff Medical compound, A. Fuqua	140 408
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	Music stand, O. Schulze	
	Offal and manufacturing gas, treating, J. Turner	. 140,391
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	Organ stop action, reed, I. T. Packard Paper machines, belt guide for, R. Hutton	. 140,381
,	Paper, preparing wall, A. W. Paull	
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	Piano tuning key, A. H. Affleck	
	Pitcher, molasses, E, B. Manning	
	Planter, corn, E. Parmentier	. 140,432
	Planter, corn, Z. D. Waters Plow, L. B. Richardson	
	Plow gang, M. S. Curtiss	. 140,480 140,355
:	Plow, subsoil, G. B. Briming nam	. 140,460
;	Plow, sulky, D. W. Hughes Plow, wheel, H. M. Skinner	
,	Printers' galley, side stick for, R. B. Hendle Printing plate, typographical, J. L. Ringwalt	. 140,368
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3	Roofing composition, Haight & Gladding Rope skipper, automatic, J. Hoffman	. 140,366
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3	Saw attachment, J. Giblin	
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4 3	Sugar stirrer, maple, F. B. Graves	140,361
76	Table, extension, W. Valentin	
1	Tailor's measure, J. A. Johnston	140,507
5 8	Telegraph, printing, T. A. Edison	140,487
1	Telegraph, printing, T. A. Edison	140,488
0	Thill coupling, A. J. Patterson	. 140,382
5 3	Thrashing machine, Ellis, Hoffman, & Lee Thrashing machine, F. R. & W. O. Sutton	140,491

Trunk and hat box, hand, Q. A. Scort 140,548	
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Washing machine, W. M. Rowland 140,435	
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Water wheel, N. C. Roberts 140,544	
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Wood, preserving, H. G. McGonegal 140,520	
Wrench, pipe, G. Warsop 140,561	
1	

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1,344.—Spools.—J. H. Bullard, Chicopee Falls, Mass. 1,345.—Fertilizer.—Hunt, Rankin & Lamar, Macon, Ga. 1,846.—Hams.—Oakford & Co., Baltimore, Md. 1,347.—Roof Slate.—T. W. Parry, Lehigh Township, Pa. 1,348 & 1,349.—Playing Cards.—C. K. Pevey, Worcester 1,350.-FILES, ETC.-Sheffield Works, Albany, N. Y.

1,351.—Toothache Remedy.—A. Tracy, Brooklyn, N.Y.

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