- (59) J. K. asks how to make a compothe glue in rain water until pliant, and drain it well. Then melt it over a moderate fire, but do not "cook it." Next put in the sirup and boil three-quarters of an hour, stirring it occasionally and skimming off impurities arising to the surface. Add the glycerine and it was at first. turpentine a few minutes before removing from the fire, and pour slowly. Slightly reduce or increase the glue as the weather becomes colder or warmer.
- (60) H. E. asks (1) if the inclosed sample contains anything but lead. If so, what? A. Tije sample is not lead, but an alloy, probably Britanniameter, consisting of copper 1 part, zinc 2 parts, tin 81 parts, and antimony 16 parts. 2. In making a casting with this metal, 616 by 3 inches, one-sixteenth inch thick do the brass moulds have to be hot or warm to give the face a smooth look, like inclosed sample? A. Hass moulds cannot be used, but they must be cast in well polished iron moulds under pressure. 3. What is the best etching fluid to use on this metal? A. Use nitric acid (aqua fortis).
- (61) C. I. asks: 1. What is the best wood for ebonizing? A. Cherry. 2. Give full directions for ebonizing. A. Dissolve 4 ounces shellac with 2 ounces borax in  $\frac{1}{2}$  gallon water. Boil until a perfect solution is obtained, then add 1/2 ounce glycerine, of aniline black soluble in water a sufficient quantity, and it is ready for use. See also Scientific American for August 1, 1885, page 72.
- (62) A. E. H. desires a receipt for glycerine jelly, used for mounting microscopical objects. A. Take a quantity of Nelson's gelatine, soak it for 2 or 3 hours in cold water, pour off the superfluous liquid, and heat the soaked gelatine until melted. To each fluid ounce of the gelatine, while it is fluid but cool, a fluid drachm of the white of an egg is added. Boil this until the albumen coagulates and the gelatine is quite clear, then filter it through fine flannel, and to each ounce of the clarified solution add 6 drachms of a mixture composed of 1 part glycerine to 2 parts
- (63) J. T. asks: What is the composition and nature of "agate," nsed for coating kitchen utensils, and will it bear heat and cold under pressure? A. The following produces a white and harmless coating: Powdered flints, calcined borax, pure clay, and a little feldspar are finely ground together and made into a paste with water. The iron ware being cleaned with dilute sulphuric acid, and well washed with water, the paste is applied to it with a brush. While this is still moist, it is dusted over with a glaze composed of feld- mit the same power through them, but increase their spar, carbonate of soda, borax, barium sulphate, and a little tin oxide. The utensils are allowed to dry gradually, and are lastly heated in a muffle at a bright red heat until the glaze is fused in a uniform manner. They will stand considerable heat and cold under pressure.
- (64) A. B. J. asks (1) how to clean kid gloves. A. For cleaning, see answer to query 18, contained in Scientific American for October 24, 1885. 2. How to dye old kid gloves black? A. The glove is washed in alcohol, and three times brushed over with ous combustion. A. Very probably, if the mattress has a decoction of logwood, allowing between each brushing ten minutes for drying, afterward dipping into a solution of iron sulphate and then brushing with warm water. Should the color not prove sufficiently dark, a decoction of quercitron may be added to the logwood decoction. Instead of the sulphate of iron, some nitrate of iron may be used. As the leather begins to dry, it is rubbed over with talc powder and some olive oil and pressed between flannel. The treatment with talc and oil is repeated, and the glue allowed to dry on the stretch wood. 3. Where could I get the wood hands or forms used to draw the gloves on to dye? A. They are to be had from all dealers in
- (65) R. H. asks if there is any means of discovering gold by its attracting powers. A. There are no means known except regular miners' methods by which the presence of metal can be satisfactorily determined. Magnets are attracted by iron ore. 2. What books are the best on physiognomy? A. We can send you "Indications of Character," price 25 cents; "Heads and Faces, and How to Study Them," price \$1.00; "New Physiognomy," by S. R. Wells,
- (66) J. P. O. asks what process to put parchment documents through, that have been steamed in a safe, and have drawn up and become stiff, in the late fire at Galveston. I have some land patents that formerly were 4x10 inches, and now they are about 1½ inches diameter and 4 inches long. They were in a large safe, and although the fire burnt away from the safe in less) than an hour, everything of a leathery na-A. We do not believe you can more than partially re- of our locomotives are the most powerful form that re them, but would advise you to heat them with steam until they become pliable and then stretch them ont as well as possible, taking care to prevent their keeping auger bits of cast steel from rusting. A.
- moval of spots on the face resembling freckles. A. box is a ready means of preventing rust. The following treatment, which is used for moles, may
- : (68) J. P. R. asks why he failed to make platinum chloride adhere to a silver deposit in trying to get a black with it. A. We would advise you to use a solution of silver nitrate instead of platinum chloride. The article is dipped in the solution mentioned, then heated in the flame of a Bunsen burner will be found more economical and fully as satisfac-used, of which one of the ingredients is nitric acid, tory as the one used by you.

- sition for small printing press rollers? A. Take of bust was discolored by smoke and water. Inform me Cooper's best glue 81/2 pounds, extra sirup 2 gallons, the best mode of cleaning it. A. Take 2 parts of comglycerine 1 pint, Venice turpentine 2 ounces. Steep mon soda, 1 part of pumice stone, and 1 part of finely powdered chalk; sift it through a fine sieve, and mix it with water; then rub it well all over the marble. and the stains will be removed; then wash the marble all over with soap and water, and it will be as clean as
  - (70) E. S. A. S. asks: What is the cause of the Gulf Stream? A. The Gulf Stream is but a single portion of the great system of oceanic currents; the explanation of the phenomena would proved by coating it with shellac and then painting the require too much space for this department. Text surface. 2. How is paper such as is used to wrap books on geography or geology will explain the details of butter or candy coated with paraffine? A. Unsized the theory. 2. What will take ink spots out of marble? paper is dipped in a solution of parasine, or else the A. Take 1/2 ounce antimony chloride and 1 ounce oxalic acid, and dissolve them in 1 pint rain water; add flour, and bring the composition to a proper consistence Then lay it evenly on the stained part with a brush, and after it has remained for a few days wash it off, and repeat the process, if the stain is not quite removed. 3. Is there any cure for flesh worms? A. See answer to query 8 given in Scientific American for the glass of one store window to that of another? A. February 21, 1885.
  - (71) J.Z. S. desires a few rules for a very lean person to increase his weight to a much larger amount-diet, etc. A. Much depends upon individual temperament, but by refraining largely from exliberally composed of sugary and starchy elements, with milk and butter and yolk of eggs, fat meat, etc., one can generally largely increase his weight.
  - (72) W. H. R. asks: How is the high polish put on gilt frames? Is it gold leaf or a composition? One part a high polish, while on a strip alongside of it the gold is dead. How is the composition made that the flowered wood is made of on frames? A. The high polish referred to is obtained by burnishing a portion of the gold leaf. The moulding may be prepared as follows: Mix 14 pounds of glue, 7 pounds of resin, 1/2 pound of pitch, 21/2 pints linseed oil, spirits of water, more or less, according to the quantity required.
  - (73) J. H. W.—Steam at 5 pounds pressure is about 224° temperature, and may be estimated at 8 per cent more effective than water at 212° for the same area of radiating surface. You will require nearly 21/2 feet 11/2 inch pipe with steam at 5 pounds to equal a foot of 4 inch hot water pipe at 212°
  - (74) H. G. A. writes: I am transmitting about 2 horse power through a set of gears that make 50 revolutions a minute, and they wear out in a short time. Will they lastlonger, and about how much, if I transspeed to 150 revolutions per minute? A. You will gain nothing in wear on your gear by increasing the sp The contact of the teeth, although with less strain, will have three times the quantity of contact, with an increase of back lash or vibration which adds to the wear, and also to the noise.
  - (75) G. P. T. speaks of a fire starting in a mattress stuffed with fine shavings, and asks if the mattress could have become ignited by spontane-
  - (76) C. H. B. writes: I have a polyopticon, with lens 1% inches diameter and 4 inches focus. Owing to size of lens, my pictures must not be larger than 11/2 inches diameter, and, unless they are perfect pictures, the result is not what I would like. I want to get a larger and clearer image. If I use lens 2 inches diameter and about 31/2 inches focus, shall I attain the desired end? A. Your single lens 2 inches diameter and 31/2 inches focus will not give a satisfactory image, nor cover the required field; two plano-convex lenses of 2 inches diameter, 8 inches focus, placed from 2 to 3 inches apart, with their convex faces next to each other, set so as to adjust their distances for AND EACH BEARING THAT DATE. the best effect, will enable you to project a picture 2 inches to 21/4 inches diameter.
  - (77) F. J. W.—If you are handy at tinkering, and really ambitious to learn a regular trade, it is now time (age 18) to make a start in earnest by going into the nearest machine shop, beginning, if necessary clear down at the bottom, a mere laborer or blacksmith's helper, it matters not which, if you are only there to see how things are done, industrious, and lose no opportunity to make yourself useful
  - (78) G. L. C.—With the best rams now made on the same principle, water can be raised 150 feet or more, and in quantity from one-fifth to onefifteenth the quantity used, according to the available conditions of feed pipe and height. A siphon cannot be relied on for more than 25 feet lift.
- (79) G. K. asks: Which are the most ture, such as backs of books, was entirely destroyed. powerful reflectors in use? A. The parabolic reflectors
- (80) C. H. I. asks the best receipt for becoming saturated with moisture, or they will pulp. Wipe them with tallow; warm the bit, using the tal-(67) H. S. desires a remedy for the re- low on a rag. Vaseline or oil on a rag in the tool
- (81) M. G. F. & F. L. W.-Wind has be found effective: Take tartar emetic in impalpable no effect upon a thermometer, if otherwise protected powder 15 grains, soap plaster 1 drachm, and beat them from radiation from the ground or buildings. A therto a paste. Apply this paste to nearly a line in thick-mometer, to indicate the temperature of the air, nniness (not more), and cover the whole with strips of form with the regulations as issued by the Smithsonian gummed paper. In 4 or 5 days, eruption or suppuration Institution, should be sheltered from the sun, and will set in, and in a few days after leave only a very from radiation, by being placed in a latticed cage of about a cubic foot space, so much open on one side as to admit of observation, the cage to be sheltered from the direct rays of the sun, and thermometer protected from rain.
- (82) D. D. J. asks how to make a compound used for coating small pieces of steel intended to cast into iron. Where nothing is used, the iron does until black, and finally all superfluous black removed not lie to the steel, and blow holes are formed, by means of a rag dipped in sweet oil. This method which spoil the castings. I have seen a compound

- (69) G. M. M. writes: A white marble steel in the casting seem to be almost fused together. A. The pieces of steel are cleaned free from scale by mixture of hydrochloric acid 1 part, water 3 parts, then washed in hot water, then dipped in muriate of zinc (ordinary soldering acid) and dried. Put the pieces into the mould as hot as can be handled.
  - (83) A. C. L. asks (1) how to remove machine oil and gasoline from the floor and siding of a frame building which some tenants have so completely saturated as to increase the fire risk and injure the appearance. A. It will not be possible to remove the oil, but the appearance of the wood may be impaper is waxed by means of heat being applied to beeswax, which is then absorbed by the paper. There are several patented machines for the purpose. 3. How can I make a paste which will unite such paper? A. Use a rubber cement. See recipe given in article on "Cements" in Scientific American Supplement, No. 158. 4. How can I transfer a gold leaf sign from We know of no means by which this can be done
- (84) A. M. H.—The injector is considered the most economical for feeding boilers, and is no doubt economical for raising water. It is notin use ercise, avoiding care and worry, and following a diet regular water supply, it is not reliable. There is no work on steam jets and injectors. See Scientific AMERICAN SUPPLEMENT, No. 212, on the theory of Giffard injector, and No. 356 for illustrations of various kinds of injectors.
  - (85) W. H. asks how to brown gun barrels. A. Rub the clean barrel with chloride of antimony mixed with a little olive oil; leave a thin coat on the barrel until the required degree of browning is reached. Then wash in hot water and soda, dry, and oil with boiled linseed oil. Varnish with shellac.
  - (86) C. S., Jr., asks: 1. What is the reason that the recoil in a pistol is greater than in a rifle chambered to use the same cartridge? A. Because the rifle is heavier, and absorbs the recoil. 2. Why is it that the penetration is greater in the latter than in the former? A. Because by the greater length of the barrel of the rifle the cartridge gives its full effect; also the recoil of the pistol is so much lost power in the bullet by lessening its velocity. 3. What good are the grooves in the bullet of the rifle cartridge? A. The rifling of a gun adds to the accuracy of the flight of the bullet by causing it to spin.
  - (87) G. A. W. asks: What is the cause of the humming, buzzing sound which is sometimes heard around telegraph poles and wires? A. The humming is caused by the vibration of the wires by the action of the wind, on the principle of the Æolian harp. A very slight breeze will set the wires into active vibration.

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

T. H.—No. 1 is a silicious mineral containing carbonate of lime, and is of no apparent value. No. 2 is a clay slightly colored with iron oxide. It resembles other, and might be used as a paint if ground and mixed with oil.

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	Watch winding mechanism, C. Morlet  Water supply pipes, registering valve for, H. P. Brown  Waterworks system, P. B. Perkins  Wave power, system for utilizing, A. De Souza  Wheat cleaning and polishing machine, E. Fritsch  Whip socket, G. M. Hubbard	335,471   335,213 335,303   335,118   335,220   335,524
	Watch winding mechanism, C. Morlet	335,471 335,213 335,303 335,118 335,220 335,524 335,150 335,267
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	Watch winding mechanism, C. Morlet	335,471   335,213   335,303   335,113   385,220   335,524   335,150   335,267   335,388   335,215   385,215
	Watch winding mechanism, C. Morlet	335,471   335,213   335,303   335,113   385,220   335,524   335,150   335,267   335,388   335,215   385,215
	Watch winding mechanism, C. Morlet	335,471 335,213 335,303 335,113 385,220 335,524 335,150 335,267 335,388 385,215 335,117 335,193 335,192
	Watch winding mechanism, C. Morlet	335,471 335,213 335,303 335,113 385,220 335,524 335,150 335,267 335,388 385,215 335,117 335,193 335,192
	Watch winding mechanism, C. Morlet  Water supply pipes, registering valve for, H. P. Brown  Waterworks system, P. B. Perkins  Wave power, system for utilizing, A. De Souza  Wheat cleaning and polishing machine, E. Fritsch  Whip socket, G. M. Hubbard  Whip socket fastener, A. Searls  Whindengine, J. Serdinko  Windengine, J. Serdinko  Wire coating apparatus, J. J. Lee  Wood polishing machine, Elmer & Boardman  Wrench. See Pipe wrench.  Wrench, W. A. Hathaway  Wrench, Rettberg & Ellis	335,471 335,213 335,303 335,113 385,220 335,524 335,150 335,267 335,388 385,215 335,117 335,193 335,192
	Watch winding mechanism, C. Morlet  Water supply pipes, registering valve for, H. P. Brown  Waterworks system, P. B. Perkins  Wave power, system for utilizing, A. De Souza  Wheat cleaning and polishing machine, E. Fritsch  Whip socket, G. M. Hubbard  Whip socket fastener, A. Searls  Whisky, making, Allen & Bradley  Windengine, J. Serdinko  Window cleaning chair, A. Dormitzer  Wire coating apparatus, J. J. Lee  Wood polishing machine, Elmer & Boardman  Wrench. See Pipe wrench.  Wrench, W. A. Hathaway  Wrench, Rettberg & Ellis  DESIGNS.	335,471 335,213 335,303 335,113 385,220 335,524 335,150 335,267 335,388 335,215 385,151 385,151 385,151 385,151 385,117
	Watch winding mechanism, C. Morlet	335,471 335,213 335,303 335,113 385,220 335,524 335,150 335,267 335,388 335,215 335,117 335,117 335,192 385,481
	Watch winding mechanism, C. Morlet	335,471 335,213 335,303 335,113 335,220 335,524 335,150 335,267 335,388 335,215 335,117 335,192 335,192 335,192 335,481
	Watch winding mechanism, C. Morlet	335,471 335,213 335,303 335,113 335,220 335,524 335,150 335,257 335,388 335,215 335,117 335,192 335,193 345,193 345
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	Watch winding mechanism, C. Morlet.  Water supply pipes, registering valve for, H. P. Brown.  Waterworks system, P. B. Perkins.  Wave power, system for utilizing, A. De Souza.  Wheat cleaning and polishing machine, E.  Fritsch.  Whip socket, G. M. Hubbard.  Whip socket fastener, A. Searls.  Whisky, making, Allen & Bradley.  Windengine, J. Serdinko.  Window cleaning chair, A. Dormitzer.  Wire coating apparatus, J. J. Lee.  Wood polishing machine, Elmer & Boardman.  Wrench. See Pipe wrench.  Wrench, W. A. Hathaway.  Wrench, Rettberg & Ellis.  DESIGNS.  Belt, C. H. Buchanan.  Bottle, S. F. Hayward.  Cane knob or handle, J. N. Provenzano.  Hosiery, J. Phipps.  Organ case, L. K. Fuller.  Rug, H. Finck.  Rug, A. Petzold.  Scarf pin, A. F. Wehrle.  Trimming, B. Lipper.  TRADE MARKS.  Beer, H. Clausen & Son Brewing Company.  Colored powder of the nature of flock, R. H.  Bragdom.  Food for calves, S. Phillips.  Fuse for exploding gunpowder, etc., safety, Climax Fuse Company.  Hair tonic or wash, certain named, H. Bailey.  Hats, felt and silk, G. Heath.	335,471 335,213 335,303 335,113 335,220 335,524 335,150 335,215 335,117 335,192 335,192 335,192 335,117 335,192 325,193 325,19
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	Water supply pipes, registering valve for, H. P. Brown.  Water supply pipes, registering valve for, H. P. Brown.  Waterworks system, P. B. Perkins.  Wave power, system for utilizing, A. De Souza.  Wheat cleaning and polishing machine, E. Fritsch.  Whip socket, G. M. Hubbard.  Whip socket fastener, A. Searls.  Whisky, making, Allen & Bradley.  Window cleaning chair, A. Dormitzer.  Wire coating apparatus, J. J. Lee.  Wood polishing machine, Elmer & Boardman.  Wrench. See Pipe wrench.  Wrench, W. A. Hathaway.  Wrench, Rettberg & Ellis.  DESIGNS.  Belt, C. H. Buchanan.  Bottle, S. F. Hayward.  Cane knob or handle, J. N. Provenzano.  Hosiery, J. Phipps.  Organ case, L. K. Fuller.  Trimming, B. Lipper.  TRADE MARKS.  Beer, H. Clausen & Son Brewing Company.  Colored powder of the nature of flock, R. H. Bragdon.  Food for calves, S. Phillips.  Fuse for exploding gunpowder, etc., safety, Climax Fuse Company.  Hair tonic or wash, certain named, H. Bailey.  Hats, felt and silk, G. Heath.  Jewels, various geometric forms made of copper and lacquered or enameled to simulate, R. H. Bragdon.  Lamps, J. P. Bradley.  Liniment, Riley & Boyer.  Macaroons, S. Schayer.  Medicine for the cure of chills and fever, Giradeau & Johnson.  Needles, pins, crochet and knitting needles, and fish hooks, T. H. Harper.  Polishing powder for metal, glass, etc., Fischler & Co.  Rubber boots and shoes and other articles of clothing, Goodyear Rubber Company.  Soap, laundry and toilet, Empire Soap Company.  Soap, laundry and toilet, Empire Soap Company.  Soap, laundry and toilet, Empire Soap Company.  Soap, laundry and toilet, Empire Soap Company.  Soap, laundry and toilet, Empire Soap Company.  Soap, laundry and toilet, Empire Soap Company.  Soap, laundry and toilet, Empire Soap Company.  Soap, laundry and toilet, Empire Soap Company.  Soap, laundry and toilet, Empire Soap Company.  Soap, laundry and toilet, Empire Soap Company.  Soap, laundry and toilet, Empire Soap Company.  Soap, laundry and toilet, Empire Soap Company.  Soap, laundry and toilet	335,471 335,213 335,303 335,113 335,220 335,524 335,524 335,527 335,388 335,115 335,117 335,192 385,481 16,495 16,503 16,502 16,502 16,502 16,502 16,502 16,502 11,993 12,996 12,996 12,997 12,991 12,997 12,993 12,997 12,998 12,997 12,998 12,998 12,998 12,997 12,989 12,998 12,998 12,998 12,998
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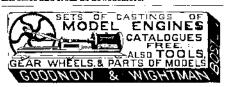


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