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V.T. should send further particulars as to the sewing machine motor, and also his name and ad dress.-J. A. S. will find directions for tinning small articles of iron on p. 378, vol. 29.-W. W. will find directions for soldering all metals on p. 251, vol. 28.-B. A. H. will and directions for building houses on pp. 52, 9C, vol. 28. -R. S. can mold rubber by following the directions on p. 283, vol. 29. -C. B. L. M. can cut glass bottles by the process described on p. 399, vol. 26.-L. N. L. will find that the effect of the variation of temperature on cast iron is discussed on p. 304, vol. 29.-C. L. M. S. will find a recipe for making parlor matches on p. 75, vol. 29.-C. L. M.'s musical queries are not suited to our columns -M. G. P. will find directions for making vinegar on p. 69, vol. 30.

J. E. D. says: I have a lot of type metal which has passed through the fire. Can I use it as lead is used forfastening iron into stone? If not, how can it be freed from other material so as to be used forsuc purpose? A. No doubtyou [can use it for the purpose ou mention ; but it is probably of more value to a type founder than for any other purpose.

J. H. P. asks: What transparent varnish or other substance can I apply to pollshed the or brass to preserve its luster? A. Pale lacquer will probably serve your purpose. Take 1 gallon methylated spirit ozs. shellac, 4 ozs. gum sandara c, 1 oz. gum elemí; miz in a tin flask, expose to gentle heat for a day or two strain off, and add % gallon of spirit to the sediment

J. B. says: The edges of the leaves of sev-eral of my books have been, as it were, eaten away by an insect, or some agent i hat is as yet invisible. Some leaves have been eaten as deepas one inch and a half from the edge. What do you think the insects are, and what means shall I adopt to save my books from destruction? A. The leaves have been torn. There is no insect which eats paper to such an extent or in such a manner as these leaves would indicate. Acids also could not have produced it, because more or less of a stain would remain ; and, moreover, acids eat paper in such a way as to leave a square and cleanly cut edge that is, they eat through the entire thickness of the pa per, while in this case the edge is feathery. Moreover only half the thickness of the paper (to the depth of 34 to % inch from the edge) is taken away, sometimes on one side, sometimes on the other. The "invisible agent" in this case is some mischievous person.

R. E. S. asks: What can I use for dipping brass to giv ea darkiblue color, also a black? A.W know of a blue dip for brass, but a blue ja panned surface is produced as follows: Bright Prussian blue or smalt should be washed and ground with one sixth its weight of starch, dried, and tempered with mastic varnish. Lay on the brass, and varnish with 5 or 6 coats of: Seed lat 2 ozs., gumanimé 3 ozs., reduced to coarse powder and dissolved in 1 quart alcohol. For black, dip yourarti cles in aquafortis till bright, then in the following till black: Hydrochloric acid 12 lbs., 'sulphate of iron 1 lb. pure white arsenic 1 b. Take out, rinse in cold water and lacquer with green lacquer.

C. H. A. asks: 1. Can you tell me of some books on the distillation of coal tar? A. "The Manu-facture of Photogenic or Hydrocarbon Oils from Coal and other Bituminous Substances." by T. Antisell Treatise on Coal, Petroleum, and other Distilled Oils, by A. Gesner, 2. What are the ingredients of black arnish, used on roofs and outdoor iron work? A. Two lbs. tar oil, ½ lb. asphaltum, ½ lb. pounded rosin. Mix hot, in an iron kettle, taking care to prevent ignition. Use cold. 3. Will boiling coal tar act on galvanized iron? A. No.

A.B.L.asks: What is the diminution in bulk of snow when melted? A. Freshly fallen snow weighs from 5 to 12 lbs, per cubic foot. As to your fish hook question, apply to a dealer.

G. M. asks: 1. Are any instruments in ex-istence by which we can determine to what extent (if A. It has been determined that the heat of the sun is due to combustion, and its principal source is burning, glowing hydrogen gas. 2. Is the all-pervading ethera perfect conductor of electricity? A. Electricity passes readily through space deprived of atmospheric air; and if we suppose this space to be filled with an imponderable ether, we can believe it to be a conductor of elec tricity. 3. Is the fact generally known that iron and steel possess magnetic polarity, when the force shaping them proceeds in a given continuous direction? For instance, most of the common cut nails, and nearly all ron and steel tools, are magnetic ; the head of the nail is the negative or south pole, and the other end is the positive or north pole, and so with all toels where the machine shaping them operates in a given direction, or where the iron or steel is forced through the machine in a given continuous direction. A. It is known that hammering steel or iron induces magnetism, and this method has been recommended for inducing magnetism in steel bars. Such magnetism, however, is feeble compared with that induced be other highly magnetized bars, or by the electric current.

W. K. asks: Is there any chemical solution which will renew the color of bronze stenciling upon iron? A. Dissolve the covering of varnish by alcohol or spirits of turpentine, and then rub with a strong solu tion of oxalic acid; then dry and revarnish.

C. R. asks: In what form is platinum used in the nickel plating bath? A. The solution used in the nickel plating bath consists of the double sulphate of nickelan(lammonia.so as to obtain a plating of nickel. When platinum is required to be deposited, the double chloride of platinum and potassium, dissolved in a solution of caustic potash, is used as the bath.

W. L. L. says: I have a house standing north and south with addition on north side and chim-ney on east side of addition. When the wind is in the northeast, the stove will not draw well; the smoke blows down the chimney. What is the best thing that I can put on it to prevent this? A. The most complete rem-edy would be to rebuild your chimney within the main house, at the center of the north end, to terminate above the ridge of the roof. If you cannot do this, you might construct a rectangular flue of galvanized iron and attach it to the outside of main house at the center of north end, to terminate well above the main ridge, and constructed and painted to imitate a chimney; the side towards the house should be made double, with an air space of two or three inshes between the sheets for ing of the interior, and the stove pipe conducted to it, the tube being also made double below where it enters the roof.

N. J. W. savs: It has recently been stated that, in the Turkish baths in New York, patients are treated with vapor at a temperature of 240° to 260°. This statement seems incredible in view of the populat belief that water bolls at 212°. Can you explain? A. In the Russian bath, where the vapor of water is employed, the ordinary heat of the bath of vapor is from 120° to 140° Fah. Steam at 240° or 260° would scald or burn the skin and would have to be superheated besides In the Turkish bath, however, where hot air is used, a much higher temperature can be employed on account of the rapidevaporation from the surface of the body. With moderately dry air, a temperature of from 200° to 270° Fah. has been borne.

R. J. P. asks: How is compressed yeast ade? A. One mode of preparation is as follows: Prenade 🗄 viously malted barley and rye are ground up and mixed ext put into water at a temperature of 65° to 75°; after a few hours the saccharine liquid is decanted from the dregs, and the clear liquid brought into a state of fer-mentation by the aid of some yeast. The fermentation becomes very strong; and by the force of the carbonic acid which is evolved, the yeast globules are carried to the surface of the liquid, and, forming a thick scum, are removed by a skimmer, then placed on cloth filters, drained, washed with a little distilled water, and next pressed into any desired shape by means of hydraulic pressure, and covered with a strong and well woven can-

B. G. asks: How is chloride of calcium prenared ? I have tried to dissolve chalk in muriatic acid. outcouldnot succeed. A. There must have been some thing wrong in the acid you employed. Powdered chalk is added tomuriaticacid until the effervescence entire-lyceases. The liquid thus obtained, which is a solution of chloride of calcium, yields the solidbody on evaporation.

A. M. Y. asks: 1. What is the acknowledged opinion as to the comparative merits of vessels with turrets, such as the Monarch, compared to the class of the Hercules? Does the; fact of the Captain turning out a failure alter the high opinion previously held of such a system of construction? A. Opinions are about evenly divided on these points. 2. What yees sel do you consider represents the type upon which all modern improvements have been successively applied? A. The ark

J. C. asks: Of what horse power will ar engine of the following dimensions be: Cylinder 1 inches in diameter, stroke 24 inches, steam 601bs, prese ure, and cut-off at half stroke, running at 90 revolutions aminute? A. Multiply the mean effective pressure per square inch (probably between 40 and 45 pounds) by the area of the piston in square inches (78.54), and by the piston speed in feet per minute (210), and divide the product by 33.000.

T. S. P. asks: 1. Will a gun scatter as much with a bore larger at the muzzle than at the breech? Λ . Yes. 2. What kind of oll is the best to oll gun stocks with? A. Olive oll. 3. How many cells are there in the battery of the miniature telegraph? A. One. J. Hasita recording apparatus with it? A. No.

E. C. C. asks: 1. Will there be any advantage in the application of a continuous stroke of a steam engine to the face of a cogged wheel or wheels, efect in diameter, instead of using a 12 inch crank, applying the power at the most available point? It requires three strokes of a twenty-four inch engine to perform one revolution of the wheel or wheels : it only equires two strokes with the crank. I use a self acting or double clutch for regulating the movements. A. We do not think that any advantage will be derived from this arrangement. 2. I claim to be the projector of an invention lately sent to the Patent Office by certain parties in this vicinity, to one of whom I confidentially divulged my device, making it so plain as to enable him and his partners to contrive an exact model of it, which they did without my knowledge. He admits that I toid him of it, but claims to have conceived the idea long before, the contrary of which I think I am able to sustain. How shall I proceed? A. Make application for patent, and produce your proofs of priority of invention.

C. E. M. says: A contends that it would be simply impossible for modern brains and appliances to move a 40 foot cube of granite 10 feet in any limited time, and that it never has been done except by the an-cients. B. thinks that there is nothing impossible in accomplishing the work in a comparatively short time. Has anything of the kind ever been done? A. A 40 foot cube of granite would weigh 10,500 tuns, nearly A 40 Modern appliances would, we think, be found equal to the task of moving such a weight. Perhaps one of themost recent jobs of the sort was the movement of he Great Eastern steamer, from shore into the water, at the time of her launch, a distance of 150 feet. This was done by means of hydraulic rams. The weight of the hull was between 7,000 and 8,000 tuns.

S. W. W. asks: 1. If the size of the second cylinder in a compound engine could be changed at will, would it be the same as a variable cut off in other engines, and would it be any advantage ? A. We do not think there would be any advantage. 2. What advantages would a rotary engine have over other kinds, pro vided it could be as well packed? A. Cheapness, light ness, compactness.

J. H. D. asks: Canan office 10 feet $\times 20$ feet be sufficiently warmed by the exhaust from a 10 horse engine, situated about 100 feet distant, the pipe to pass underground? A. Yes. 2. How large a conducting pipe would be required, and of what metal should it be made? A. Iron pipe, 1¼ inches in diameter.

J. M. asks: What size is necessary for the square bar of iron to make a specified size of half round ron. A. Make the side of the square bar 0.62665 of the liameter of the half round piece.

V. C. says: I am running four stationary bollers all connected together, and I am troubled with the scale gathering over the bridge wall and causing the boilers to burn. What is the cause and how can I preventit? The boilers are level, and I have them cleaned every two weeks. A. Probably it will be necessary for you to change the feed water, or use some scale preventive. It is difficult, however, to give a definite opinion without knowing more of the case. It is quite mmon for scale to form on the crown sheet of a boller, when the circulation is bad in that part. This can sometimes be remedied by changing the position of the feedpipe, and arranging an internal pipe so as to cause a circulation of the water.

C. F. S. asks: Does the principle that wheels, chains, beams, cranes, and other iron structures (after being long subjected to blows or to distinct jarring of any kind) at length break without adequate cause, hold true in regard to the wire cables of anspenslon bridges? If so, ought not the cables to be renewed everyfew years? A. Engineers are divided in opinion on this matter, but many think that a possibility of such action is a serious objection to suspension bridges.

G. E. C. asks: Can small articles punched out of common scrap tin be silver plated? What is the best process? Will it be necessary to re-tin the pieces in order to have the edges plated? A. It would be difficult to silver them well without first giving them a layer of copper by means of the battery, and a bath of sulphate of conner. Then a bath is used, consisting of two parts of cyanide of sliver and two parts of cyanide of potassium dissolved in 250 parts of water.

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For descriptive circulars, and terms to Agents of new and saleable mechanical novelties, address James H. White, Newark, N. J., Manufacturer of Sheet and Cast Me'al Small Wares.

F. H. D. asks: 1. What population have France and Germany respectively? A. By the last cen-sus, Germany 38,5 0,000, France 38,000,000. 2. Of what as tionality was the late Professor Agassiz? A. He wa born in Switzerland. 3. Is there a drink known as m#m? A. Mum is beer made from wheat malt, and its use is chiefly confined to Germany, and especially to Bruns wick.

S. H. B.asks: I. What is the article used by glass blowers to prevent glass from burning or stataing while being heated in the lamp? A. The staining h due to the oxide of lead present in the glass, and to prevent it a glass free from lead must be used. 2. What are the chemical elements of coal ashes? A. Principally silica, alumina, sesquioxide of iron, lime, and magnesia Sometimes there are also found potash, soda, sulphuric and phosphoric acids,

vas. Itkeeps from eight to fourteen days, according the season, and is excellent.

W. L. T. asks: 1. How much wire will it take to make a helix for magnetizing steel bars 6 inches long? How long should the coil be and of what diameter? A. A bellx as inch in inside diameter, and made out of 20 feet of copper wire, will answer. 2. What should be the size of the cups for a Grove battery, and how many cups should I need? A. Use from two to six cups of six inches diameter and 8 inches hight, accord ing to the rapidity and amount of charge desired

L. A. G. says : 1. What is the meltirg point of platinum? A. It is above 4.000° Fah. H has not been certainly determined. 2. What is the great est artificial cold which can be made? A. By mixing liquid nitrous oxide with bisulphide of carbon, and placing the bath in a vacuum. The lowest temperature thus obtained is -220° Fab. 3. Is there any difference between a square foot and a foot square? A. No.

G. B. asks: Is the difference between soft and spring brass (sheet and composition or of manufacture? A. A difference of composition, principally.

G. E. S. asks: Will a body projected vertically upward into the air return to the earth with as great a velocity as it had on leaving the earth? A. No, A. H. asks: Afterice is formed, perhaps to some feet in thickness, does a vapor passfrom the water through the ice, and congeal on the top of it, or is the thickness of the ice increased by the water freezing underit? A. Instill water, as in ponds, lakes, and generally, ice having formed on the surface, its thickess increases according to the intensity and duration of the coldfrom thesurface downward, by the cold layer of ice above abstracting the heat from the water below, the ice formed being reduced below the freezing point be the cold exterior atmosuhere, and acting like any other solid.

A. L. K. asks: 1. What is the hest treatise on prehistoric nations? A. Lyell's "Antiquity of Man" also "The Stone Age, Past and Present," by E. B. Tay. lor,and No. 9 of Estes & Lauriat's "Half Hour Recreations in Popular Science." 2. Is there a treatise on the mound builders separately? A. We know of none

L. P. S. says: In a factory a § inch pipe was placed against the wall, and above a tank in which acids were kept for dipping the bronze work. The pipe was coverel with the finerportions of the boxwood sawdust used for drying the work after being dipped. On re-moving some woodwork, I found the dust on the pipe at a bright red heat. I questioned the workmen to ascertain whether there had been a lamp or fire in any form used there, and found there had been nothing of the kind; but the men had found fire therebefore. I then brushed the burning dust from the pipe, and soon after on a blow being struck on the woodwork, more dust fell; aud lodging on the pipe, it ignited immediately and be came incandescent. I thought that perhaps the fumes of the acids affected this dust and converted it into xyloidin, but the very slow combustion rather precludes such a theory. The gages at the time alluded to indicated between 60 and 65 lbs. pressure, and the steam must have passed through 20 or 30 feet of pipe afterleaving the boiler. A. The supposition that there was a gradual conversion of the woody fiber into nitro cellulose, by the continued action of the acid fumes.under the circumstances narrated, is a conjecture both in genious and probable.

C. Y.—Your boat seems to be well propor tioued. Your engine should make from 250 to 300 revo lutions per minute, giving a speed of from 8 to 10 miles an hour

G. B. M. asks: 1. How can oxygen gas be generated, and can it be kept for inhalation? A. There are several methods of preparing oxygen. The safes way for an amateur is to heat good commercial binox ide of manganese to redness in an iron retort. 2. Is there any way to produce and keep up a succession of electrical sparks? A. A good electrical machine will give a succession of sparks to the knuckle or a metallie object held near the prime conductor, so long as the plate or cylinder is kept in motion. 3. How is aqua am monia made? A. On the small scale by heating a mix ture of sal ammoniac and lime and receiving the gas in to cold water. 4. What is carbolic acid? Isit poison-ous? A. Carbolic is made from coal tar and is poison ous. Its chemical formula is $C_{12}H_5O,HO_{\bullet}$

A.S. asks: In testing milk, what is the relative proportion of cream and milk? If I pour 5 inches of milk into a test tube and let it remain in a moderately warm place till the cream all rises to the top, how thick ought the cream to be ? From the thick ness of cream in a watered sample of milk, how am I to draw correct conclusions as to the amount of water added by the milkman who sells it? A. The thickness of the cream would depend somewhat on the length of time the milk had stood in the milkman's can and whether it was taken from the top or bottom of the can also on the diet of the cattle and the condition when yielded. You must determine the thickness of crean from milk you know to be good, and then compare with the unknown sample. No rule expressed in fraction of an inch can be given.

J. P. H. asks: If a siphon whose vertex is 50 feet above the level of a reservoir be closed at each arm with a stopcock, and both branches be then filled with water at its vertex, after which it be made airtight and both ends be opened, will the water flow through the siphon, or will the formation of a vacuum be made of its vertex? A. The siphon will not work.

G. R. J. says: 1. When a light is applied to n perforated cork in a bottle containing oxygen and hy-drogen gases, an explosion takes place, driving the cork with great force out of the bottle. When the two gase form water, is there not a vacuum in the bottle? A. I no air be allowed to enter after the explosion, a partia vacuum will be left. 2. If a vacuum is produced in the bottle, why does not the external air force the cork in 2 A. It would, if the cork could be prevented from blow ing out. 3. What forces the cork out? A. The great expansion of the gases, due to the heat generated from chemical combination of the hydrogen and oxygen.

H. C., H. E. W. and others: You need enter tain no doubt as to the possibility of making sugar and sirup from sawdust, rags, and paper. In order to effect this change, shreds of linen, paper, or sawdust are submitted to the action of strong sulphuric acid in the cold. After a certain time the acid is diluted with water and boiled for some hours, and the free acid finally neutralized with chalk. The flue is then filtered, evaporated to a sirup, and set aside to crystalize. Sugar sirup is now made on the large scale in Europe from starch and di lute sulphuric acid. But this chemical sugar is glucose it is not so sweet, nor does it crystalize so readily as the sweet natural cane sugar. Nevertheless it is imported into this country and used more extensively perhaps than many suppose. But if it be properly made and pu rified, there need be no alarm in using it, as it is identi cal in composition with the sweet principle of fruits Chemists have not yet discovered how to manufacture cane sugar artificially. A cheap process that would con vert grape sugar or glucose, which we have been con-sidering, into cane sugar would be of great value. There is little doubt that considerable quantities of artificial glucose or grape sugar are used in the shape of sirup, either alone or mixed with natural sirup. The dail stain sometimes seen is caused by iron, which may have arisen in the manufacture. The correspondent who speaks of feeding a decoction of muriatic acid and old rags to his ciffidren i ounder a misapprehension. No muriatic acid is used; and if old rags are employed, they are no longer rags when converted into sugar

E C. H. asks: 1. Which has the greatest driving power, a balance wheel 3 feet in diameter orone 4 feet in diameter, the weight being the same in each wheel? A. Precisely alike, other things being the same. 2. Did the trilobite have feet or legs? A. No

distance of 5 or 6 feet, the effect was lost, the fuel burningmore fiercely than before, from the fact of the stream of gas spreading and carrying with it so much oxygen from the air.

H. S. asks: 1. What will force the beard to A. Nature and time are the most iliaries. Frequent shaving seems to stimulate the growth to some extent. 2. How can I make nitrate of A. Saturate nitric acid diluted with three ammonia? or four times its weight of water with sesouicarbonate of ammonia, evaporate by a gentle heat and crystallize When not required crystallized, the salt is evaporated to dryness at 212º Fah.; and the heat being then carefully raised to about 250° Fah., the melted salt is poure a polished slab of iron or stone, and when solidified ta ken up and put into bottles. 3. How can I make Greek fire? A. The ancient Greek fire was a compound of sulphur, bitumen, and pitch. The name has also been given to substances that will ignite on the surface of or under water. If a glass bottle containing benzole and a small piece of potassium be broken on the surface of water, the benzole will take fire. 4. How can I combine phosphorus and chlorate of potash? A. The phosphorus is made into an emulsion with warm glue or gum and the fine chlorate afterwards incorporated by stirring. 5. What danger is there in making phosphide of calcium? A. Phosphorusrequires to be handled with great caution, therefore there is danger in inexperinced hands in experimenting with it, owing to its ready infiammability. 6. How can I make a cheap galvanic batterv? A. Insulate a cylinder of zinc in a copper ves sel containing a solution of sulphate of copper. The zinc is one pole and the copper the other. 7. Howcan I make from 5 to 10 lbs. of ice at one time at a cost of from ½ to 1 cent per lb.? (A. Small machines are made in France for this purpose, invented by Carré.

W. H. S. asks: 1. At what cut-off does an engine give the most power? A. At full stroke. 2. Which gives the most power, a short or a long stroke engine, both using the same amount of steam? A. Theoretically both give the same, with similar piston speed. 3. How do engineers tell how large to make steam pipes? A. There are definite rules, depending upon piston speed, length, and form of connection, etc 4 If I have a column of water above a holler and the weight of water is greater than the pressure of steam, will the steam escape up through the water? A. Yes if there is no valve between.

T. C. O'B. asks: How can a straight avenue of fifteen yards wide and two hundred yards long best be lighted up brightly? We have tried some glass reflectors, but they are entirely inadequate. Would a lens of the Fresnel kind answer the purpose? What is the best manner to adjust a lens? We have gas on the premises. A. The best lens will be of little use, if you do not have a good light. By forcing air into the flame of your gas, and directing the jet upon chalk, you can obtain quite a brilliant light.

M. E. D. says, in reply to our correspondents who asked as to washing fiannels : Take soft water, as warm as you can bear your hands in. Make a strong suds, well blued. In washing fine flannels, wet but one piece at a time; so ap the dirty spots and rub with the hands, as wash boards full the fiannels. When half clean, add three times as much blue as for cotton clothes. Use plenty of soap. When clean, have ready a rinse of the same temperature as the suds, rinse well, wring tight, shake briskly for a few minutes, hang out in a gentle breeze. When nearly dry, roll smooth and tight for an hour or two. Press with a moderately hot iron. If em-broidered, press on the wrong side. Flannels washed in this way will look white and clean when worn out and the quality will look better than when new

L. M. R. savs. in answer to J. B. V., who asks how he may remove green moss from his brown stonestoop: Carbolic acid will effectually accomplish it. A solution containing one per cent of the acid in vater should be applied to the plants, which will kill them, although it will not alter their appearance. After a few hours they may be washed off clean from the brick or stone.

C. W. Y. says, in reply to F. O. C. H., who asked as to patching a boller: Take off all warped and twisted parts of the boller plate; have your patch large enough to cover the hole nicely, then bolt it on firmly with boiler bolts, bevel the patch on the outer corner or, in other words, thin the patch; then, with a calking cool, upset the iron all around the patch close to the boiler. This, if properly done, will make a perfectly water and steam tight joint without cement of any I have calked up leaky rivets in boilers with a calking tool, so that they were tight under any pressure

A. W. W. says: C. W. B. asks, on p. 202, if there is any better way to make a house warmer than the usual weatherboarding and plastering, except to Let me give him my ideas of how a frame house should be built. After the frame is up, cover the outside with rough one inch boards, then put on a covering of tar roofing felt (which will not cost over twelve or fifteen dollars for a medium sized house) and put the clap oards on top of that, then go inside and laya course of brick on the underpinning up to a level with the top of the sills; this will make the cellar much warmer now take some strips about one inch square and saw them off to a length of the distance between the stude nail them on to the outsideboarding between the stude lath on to them, letting the lath run up and down, then put on a good thick rough coat of plaster; then lath and plaster the inner wall as usual. The plastering be w111 only ad house, probably not more than 60 or 75 dollars to a me diumsized house. The rooms will be very much warm erin winter and cooler in summer, and the walls will al ways be dry, for the wind, frost, or dampness will neve get beyond the first coat of plaster.

house, which will make it warmer and drier than any therplan in use: Put the studs one foot apart, and board perpendicularly (outside and inside) with 12 inch stock boards, making the joints on the center of the studs. Then putsiding or battens on the outside, and fur with lath over the cracks on the inside, before lathing and plastering. Blocks should be nailed between the studs on a level with the chamber floor to prevent the upward escape of warm air, and it is better if a course of bricks is laid on these before the inside ten sin díc

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ular battens.	Game board, J. D. Spang	148,995 148,962	
M. G. P. asks: How can I render a pair of	Gas retort charger, P. Munzinger	148,841	
w can I prepare gelatin for molds to cast plaster of	Gear wheel patterns, making, J. L. Hewes	148,884 148,859	
ris undercut work?—A. B. asks for a formula for ob- ning the force of the wind at different velocities.—	Governor, M. Andrade	148,913 148,931	
H. S. asks: Of what metal can I make rivets for	Grain dryer, P. B. Hunt	148,886	
asks : How can I make a cheap barometer or instru-	Grate for fuel magazines, G. S. Horn	148,885 148,86 7	
nt of any kind to foretell a storm by pressure? "I	Harness maker's clamp, J. Smith	148,901	
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-J. P. F.	Leather, machine for pricking, J. H. Walker (r)	- 5,803 148,860	
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litting machines? Makers of the above articles will	Locomotive, Harris & Bogardus Locomotive water feeder, M. N. Lvnn	148,95∎ 148,892	
obably promote their interests by advertising, in re- y, in the SCIENTIFIC AMERICAN.	Loom picker, G. Crompton.	148,926	
Several correspondents request us to publish replies	Meat scraps, pressing, S. Booth	148,870	
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tter, and the parties should give their addresses.	Meter, fluid, Ball & Fitts (r)	5.806	
Correspondents who write to ask the address of certain	Mitten, knit, O. F. Tripp (r) Mosquito screen. J. P. Miller	5,802 148.894	
so those having goods for sale, or who want to find	Motion, reversing, L. L. Whitlock	148,865	
rthefs, should send with their communications and nount sufficient to cover the cost of publication under	Nall and bolt making tool, hand, w. F. white Neck tie holder, E. A. Johnson	148,904 148,830	
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traces of limbs have been discovered. 3. How are cod lish and cocoa nuts desiccated? A. The water is exhausted from them, and they are then pressed.

C. says: Will carbonic acid gas completely extinguish fire when it exists at a dead red heat, or are its virtues coufned simply to a blaze? A. We once tried some experiments with carbonic acid gas as a fire extinguisher with the following results: The gas used was compressed in an iron reservoir, to from 200 to 300 bs. per square inch, so that a stream of gas of any de-sired force could be obtained. When a current of carbonic acid gas was directed upon burning shavings at ottom of a barrel, the flame was instantly extinguished, but was rekindled after a few minutes. The shavings had been saturated with kerosene and allowed to burn some time before applying the gas. A series of experiments in this way showed that carbonic acid ga will instantly extinguish fiame. When the shavings had become a mass of incandescent fuel, the gas, direct, ed against it, destroyed combustion at the surface, but the interior heat of the mass soon rekindled the blackened surface. The interior fire ;and heat were not re-, though an atmosphere of carbonic acid lay above the fuel for some time. When a strong current of gas under high pressure was directed upon fiame at

J. H. W. says, in answer to M. V. D.'s ques tion as to condensation: I will say that a worm 4 ree In diameter, 5 coils deep, and 2½ inches diameter of pipe, if kept cool by a continuous stream of cold water, will condense easily 2,000 gallons of proof spirit per day. A worm of ½ inch pipe and coiled 1 footin diameter, coils deep, will condense 1¼ gallons proof spirit per hour, if the coil of pipe or worm is kept cool as above stated. This would make the latter condenser (worm 24 feet long: the former one would be 96 feet.

H. W. G. replies to W. P. S. P.'s query as othe area visible from an elevation of 400 feet: The hightyou mention gives a range of 20.25 miles all around giving a surface of, in round numbers, 1,280 square miles.

H.W.G. replies to R. H. D.'s query asto the sinking of the 1,000 feet tower: A sinking of ½ inch on one side would throw it out of perpendicular 4.9 inchesattop. Settling % inch on one side and raising X on the other would throw it 9.98inches away at top.