(30) W. H. asks: What is the process of making oolide emery wheels, and if there is more than
one process, and if they are patentedi A. Many of the one process, and if they are patented? A. Many of the
best wheels are cemented with vulcanized rubber borax, or zinc chloride (or ox ychloride), and barium carbonate; other materials, such as feldspar and clay,
alkaline silicates, litharge and japan, shellac, and other estnous and gummy matters, albumen and lime, etc. (31) G. A. W. writes: I am working at elecrosilver and gold plating, and as it has been some year
since I worked at it, my memory has failed me in some hings. 1. My solutions (silver) striking and plating are composed of the following: namely, striking to
gallon of water, 34 ounce silver (chloride), 1 lb . cyanid potassium (fused), 4 ounces of sal soda. Plating to gallon water, 1 ounce silver, 34.1 lb . of cyanide potassium 4 ounces of sal soda, and a little white caustic potash in each. Now I would like to know if these are all the necess
sary ingredients; if not, please enlighten me. A. Yes, sary ingredients; if not, please enlighten me. A. Yes,
the soda and potash are not essential. 2. If bisulphid the soda and potash are not essential. 2. If bisulphide
carbon will make silver solution plate bright, will it an carbon will make silver solution plate bright, will it an-
swer for gold; if not, what will, and how used? How swer for gold; if not, what will, and how used? How
are the various colors obtained? A. No. See article on page 2540 , No. 160, of Scientific American Supple MENT. 3. What preparation is used for coating work to I havebeen using asphaltum, but in removing it with turpentine it has a tendency to stain the work and will
not work well in the solution either hot or cold. A not work well in the solution either hot or cold. A.
Asphaltum varnish or paraffine. 4. I am using Smee's batteries for plating. I see some account of carbon hey immersed in the same liquid (diluted So if so they immersed in the same liquid (diluted $\mathrm{SO}_{3}$ ), if so are
they cheaper and less trouble? A. Yes. 5. What acid, and the proportions, used to dissolve platinum, and can a sheet of silver be coated by being merely passed through the hot solution? How is the best and most per-
manent way of platinizing silver sheets? A. Hydroomanent way of platinizing silver sheets? A. Hydrochloric acid, 3 parts; nitric acid, 1 part; heat to about
$160^{\circ}$ Fah. Attach the clean plate to the zinc pole of a weak battery and immerse in the cold solution some acid in the porous cups with the carbons, am I right? A. Yes. Solution of potassium bichromate and moder
A. ately strong sulphuric acid solution may be advantageously substituted
(32) H. F. G. asks: 1. What is the weight of a bushel of bituminous coal? A. 76 to 80 lb .2 . How much water will a bushel of such coal evaporate narily from 6 to 718 l b. per pound of coal.
(33) E. J. O. asks: What will remove coal tar from hair cloth, such as chair bottoms, without injuring it? A. Naphtha, benzole
Use a stiff brush if necessary.
(34) A. U. L. asks: 1. Would the rail of a railroad track make a good conductor for a telephone leading into the house be insulated? A. Yes. 3. What kind of a battery is the best, say for a distance of three or four miles, and how many cells of same? A. No bat tery is requisite. 4. I have recently seen such articles
as glass and porcelain cemented together so as to sustain a weight of several hundred pounds, by a cement sold under the name of stratina, or London cement. Can you tell what its composition is? It seems to be very
effective. A. Dissolve glue in warm strong acetic acid effective. A. Dissolve glue
(35) H. H. W. asks (1) if brick is ever used in covering locomotive boilers? A. No. 2.If not, please give the name of some cheap covering that would do.
A. Asbestos covering; a mixture of clay and cow hair;
(36) W. H. W. asks: Will sound travel faster in adense than in a rare atmosphere, and why?
A. The velocity of sound is not materially affected by A. The velocity of sound is not materially affected by
the density of the air. Its intensity is diminished by ncreased atmospheric density. It has been determine tuat the velocity of sound decrease
(37) G. C. asks: 1. Please give me a rule
A. $\frac{\mathrm{TS}}{t t^{\prime}} \mathrm{I}=\mathbf{N} ; \boldsymbol{j}_{\mathbf{I}}^{\boldsymbol{T} \psi \mathbf{T}^{\prime}}=\mathrm{S}$. T representing the number of eeth in traverse screw wheel; S , number in stud
wheel gearing in mandrel; $t$, numberin wheel uponman drcl, and $t^{\prime}$ number in nearing upon stud pinion, gearing
in $T ; I$ number of threads per inch upon traverse in $T$, I, number of threads per inch upon traverse
screw; $N$, number to be cut. 2. Please tell me how to make a cheap telephone. A. See full directions fo making telephones in Supplement, 142.
(38) J. H. W. asks: Can you inform me why a hazel switch will turn in the hands of some per-
sons, who claim to be able to discover water or mineral by this means? A great many declare that it will not urn. I sed to think so myself until I tried it last sum the rod would turn in spite of me. I held it so tight that the bark peeled off. I cannot account for it myself, and have been laughed at for asserting that there is some truth in the claims of men who call theinselves diviners until I am tired of it. Have never seen the matter ex-
plained. A. The rod is moved by the voluntary or involuntary muscular action of the hands of the operator
and not by any mysterious external influence, as many and not by any mysterious external infuence, as many
suppose.
(39) C. C. A. asks how to make a com pound with which to insulate wire. A. Shellac varnish
will do very well, providing the wire is wound before the varnish becomes thoroughly dry.
(40) J. A. W. writes: I would inquire through your paper of the M.Ds. if a connection be-
tween the aorta and pulmonary artery where they cross is common. I found in examining the heart of a calf hat was sold in market for veal a phenomenon of this
kind; if it occurred in one instance might it not in another, and what would be the physical results of such a case? The opening was as large as the carotid artery; no appearance
thick and firm.
(41) Y. \& O. ask: 1. How ought a cheap ice house to be built on top of groind A. See Supple ning rod which will answer allthe purposes, and a light
than those sold by dealers? A. See p. 348, (10), current
volume of theScientific American.
(42) W. B. W. writes: Seeing an article in
Scientific American by Dr. Rollin R. Grigg, of BufSIENTIFIC AmeRICAN by Dr. Rollin R. Grigg, of Buf-
falo, N. Y., I ask for information (" The Cause of Consumption "): What will heal the mucous membranes and the of thepping of the was to has kindly given us the ollowing: There is no one medicine that can cure all cases of irritated and abraded mucous membranes and stop the waste of albumen. A variety of remedies is required to do this, in the different cases, and the treat-
ment must be governed to a great extent by the peculiarities of constitution, and by the condition and the symptoms of each patient at the time the case is taken in hand. Furthermore, this is a where every case should be under the care of an educated, judicious physictan, as much as severe cases of typhoid fever, diphtheria, or any of the other most inricate diseases. I will say, however, forthe encourage ment of all, on this now almost hopeless subject, that here is a series of most reliable physiological facts earing directly upon the curability of all cases in the crst stages, and which shows that of all tissues the muof any by proper treatment.
(43) E. W. C. writes: The screws in our cheese presses are 134 of an inch in diameter. From and 5 inches. Five turns of the screw move it 1 inch. How many pounds prasure will 150 pounds weight plied to the end of the lever produce? What is the rule for finding it? A Theoretically, 136.800 pounds, hut there should be a large deduction for friction. The weight (150 pounds) $\times$ distance moved through ( 76 feet
$=912$ inches) divided by distance through which the $=912$ inches) divided by distance through which the
(44) H. H. asks: 1. Would it be possible or practical to run a small light boat, say 236 feet wide, 12 feet long, with a spring motor similar to those used for mall toys? A. Yes, but the power required to wind up he springs had better be applied direct to oars. 2. how would the cost compare with steam engine? Yes. The cost of the electric engine would be greater than that of a steam erigine, and the cost of running it would be about fifty times as much.
(45) J. T. asks (1) how saw blades are tempered. A. They are usually heated in a reverberatory per be taken out by heating. a saw in the fire? A. Yes,
but the saw will be ruined. 3. Where an iron mandrel runs in wooden bearings, what kind of wood is best for bearings? A. Hard birchor maple. 4. Which is best, pine or hickory? A. Hickory
(46) O. L. P. asks: Will it require more power to work an elevator perpendicul arly than it will to operate a similar one on an inclined plane at 45 degrees?
If so, what is the rule to flud difference of power required? A. The power will be the same, not taking into consideration.
(47) V. A. N. asks for the size of steam ports in a cylinder 2 by 3 inches. Is $3-16$ by $1 \frac{1}{4}$ inch too

Minerats, etc.-Specimens have been received from the following correspondenes, and xamined, with the results stated:
J. N.J.-The sample of ore is quite rich in copper copper glance) and contains also traces of silver. tain the proportions of these and the value of the ore The property is valuable.-H. J. P.-1. A serpentine rock-it contains no copper. 2. Talcose slate-C. H.M.

## COMMUNICATIONS RECEIVED

## On Boiler Explosions. By S. P. On the Collared Peccary. By J. R. G

On the
On Theory of Creation. By W.P.T [-FFICIAL.]

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