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 ment. Andrew's Patent, Inatide page.

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plying and does work. $1 / 4$ State interests for sale. A. . Peck, Danbury, Cond.
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newly pateated machine for cutlig noops, chair pllnts, frutt and band box materlal. \&c. Address Gou

 ment wood to glass by following the directions for
aquarium cement on p. 90, vol. 90 .-A. R. Is informed that poltshing shirt bosoms is described on p . 22, vol. 30 . rubtergarments on $p$. 203, vol. so-W. W. B. F. will flnd the rocess of Japanning castings described on p. 128, vol.
.- R. E. Bhouldapply to a pump manufacturer.-A.F. F. will ind almple tests for sirup detalled on $p$. 171 ,
vol.30. There is 1 ittle or no foundalion for many of the cle.-A. B. D. will thout the manufacture p. 90, vol. 90 . As to blownipe manaquaration, see pent on
met 156 , vol. 25.-A. H. M. Willinddirections for inlishing wal-
nut furniture on p. 218., vol. 26.-P. J. H. can tin small J. S. P. Whll ind a description of making lamp black
(carbon) on p. 21, vol. 28.-M. can use hard tallow forlu carbon) on p. 21, vol. 28.-M. can u
bricatiog his paper cutting knives
J. K. asks: What is coffee, chemically ?
are there not chemicals that could be substituted for coffee, that would have the same taste and be cheaper?
A. Raw coffee has been analyzed with the following re. ult, in 100 parts: Woody fiber 34 , fat and volatlle oll 10 to 19, glucoose, dextrin, and vegetable actd $15 \cdot 5$, free caf
feln 0.8 , ash $6 \cdot 7$. The caffelc acid, modified by roasting feln $0 \cdot 8$, ash $6 \cdot 7$. The caffelc acid, modified by roastling, te
suppoeed by chemiats to afford the greater portion supposed by chemlats to afford the greater portion or
theflavor and pecultar propertles of coffec. There are the genuine article.
J. K. asks:1. Is there a stone that will draw or prevent from the bite of a mad dog, and thus
cure or A. No. 2. What ta the medtctal virtue of the so-called bloodstone (apist he-
mattis)? A. An unfoundedsuperstition. 3. What are he prim a compass needle, and how can the boreal propertles of each pole be made manifest? A. The
princlpaldiference is that they are attracted by the poles of the earth which bave the opposite polarittes.
C. D. F. asks: Why is it that, to a magnet which has become weakened, weights mas be added un hilts full poweris reached. A. It is probabiy due to the infuence of the directive force.
E. G. A. asks: 1. What is the color of gold
ust, as discovered in the sand of a river? A. Yellow. 2. What is the color of platinum when alacovered in
sand? A. silver white. 3. What te the most simple washlng away the sand and earth in a pau. The fine partlcles of gold settle at the bottom. 4. Is the valley
of the Allegheny river considered as a part of the coal of the Allegheny river considered as a part of the coal
reglons of Pennaylvania? A. It is consldered as beongling to thelowercoal serte
C. R. asks: 1. Can the alkali of the great dyvantage? A. Some of these deposits might be ex-
pertmented on with advantage. 2. How can Iget a perlmented on with advantage. 2. How can I get a
small quantlty forwarded to New York? A. Apply to
Agricul'riral Bureau, Washington, D. C.
 battery conslats of a thin plate of platinised allver, bus pended antwal 0 plates, or one plate bent double, o sulpturlc actd. Bunsen's battery consists of a cylinder
of compact coke immeraed in strong nitric acld, conof compact coke immeraed in strong nitric acid, con-
tained in a porous vessel, and another cyllider of am talned in a porous vessel, and another cyllinder of am
algamated zinc immersed in dilute sulphuric actd, ex a strong glass vessel. 2. Will a 2 inch object glass of 8 Inches focus show the colors on the planet Mars? A.
It probably would, but you could not use the full aper It probably would, but you could not use the full aper
ture unless the glase were achromatic. 3. What are the stances between object glasees and eye pleces from
twenty four Inches focus up to elghty tnches? A. The distance of the eye plece from the object glass is equal
to the sum of the focal distances of the two. 4. What currelue of a pound in English mones compared wit currency of the United States? A. About \$55s.
What are the dutles on scleatilic instruments, zuch an of which they are constructed.
F. G. N. asks: What is the best kind of
varnish for covering the inglde of a silverplating vat?
A. Use copal varnish dissolved in turpentine.
J. W. asks: 1. How are porous cells made? A. Porous cellis are made of unglyzed carthenware. 2.
How ta the thing that you pull out ofan electrlc mactine or giving siocks, to reguiate it, constructed? A. By two alla ranning to a polnt at one end and terminated by
balls at the other. They allde through holes in brase caps, which are fastened on the tops of insulating columns,
the caps belag provided with clamping screws to Ax the
W. H. S. asks: What acids are said to mis rate? A. Probably murlaticand nitric acids. We can
not tell the quantitles unless we know for what this
M. S. J. a

What is the meantng of the numbers No. 12, No. 20,No 0 , by which thequality is known? Is there any bette than No. 40, or poorer than No. 12 ?
made? A. Carmine ts a beautlful red plgment prepared from the cochineal Insect. The Insects are found upon
the eactuses of Mextco and Africa, and when matured the eactuses of Mextco and Afrlca, and when matured There are many processes for the preparation of car
mine, but success princlpally depends upon the use of the purest materlais and the exerclse of care, silli, and
pattence. The following is an English process: Cochineallilb.and carbonate of potash $/ 1 /$ oz. are bolled in gallons of water for 15 minutes. The vessel is then re
moved from the fire aud 1 oz. powdered alum added The llquorts then well agitated and allowed to settle
for 15 minutes. The clear liquor is thendecanted in for 15 uninutes. The clear liquor is then decanted into a
clean vessel and istinglasa $\mathrm{y} / \mathrm{oz}$. disoolved in water 1 pln ciean vessel and latnglass y oz. dissolved In water 1 plnt
(and stratned) added. As aoon as a coagulum forms on
(ta the sur face the heat la removen, the inquorstrongly ag repose for 20 or 30 minutes. The deposited carmine must be dralined and drled. Carmine te made in Europe The numbers refer to the different qualities, from th
J. E. G. asks: How can I separate very fin

Joat Eoldfrom quicksilver without uatiog a retort? A You can remove the mercury after amalgamation by
digesing it in an exceas of cold dilut entricamald. The gold will remain unaffected. The mercury, howeve
will be lost.
N. N. asks: 1. What kinds of wood ar
used in the manufacture of paper? Can plae, spiuce hemlock, oak, chestnut, and white wood be used? A All soft woods are used for paper making, such as the
trembling poplar, linden, aspen, fr, etc.; the plne ts of trembling poplar, llnden, aspen, fir, etc.; the plne is of
too restnousa nature to be of much velae. 2. What is the process of reductng the wood to pulp? A. Bee p
272, vol.20. 3. C in it be made into whitepaper? The finest woods are used for writing paper. 4. If so
what is the proceps of bleaching? A. A jet of chlc.
ine water under pressure.
S. H. B. asks: How can a polish be given
iceland spar or selentte, perfect enough for upttce to Iceland spar or selenite, perfect enough for uptice
purposes? A. With oxide of tin used wet, on a thed a
whte wax.
C. R. A. says: Is the bismuth of commerce
metal much used ?
A. It is largely used for type ano stereotype metal. Newton's fustble alloy, whtch is
used as a soft bolder by pewterers, conslita of blsmut parts, lead part, and tin 1 part.
R. J. H. asks: 1. Dees electricity occupy
space ?
A. It does not occupy space. 2. IB lightaing fire produced by electrictity, or it it electrictity tiseis A. The passage of the electric fuld. 3. Does it take a
thailer charge of electricty to send a dispatch across the Atlantlc cable than it would to send one 25 miles on land? A. No. 4. Woald a battery of slx guns send the nolse any farther than one gun? A. There would be a
greater probabillty of the nolse belng onquenched by obstacles and disturbing causes in the case of stix gung. 5. Does the notse travel any faster from the stx gung
than it does from one? A. No. 6. Wrll not a too heavy charge of electrictty gotng through the cable generate
a
a cas and cause it to burst? A. No. gas, or do vibratlons of the wire send the message?
It is a motion transmitted from particle to particle the wire.
H. C. H. asks: Can you give me a rule for
anding the veloctty s bole in a vesael submerged to any glven depth? A 29. The effective head will be the difference between out the discharging vessel.
P. D. R. asks: 1. What are three or four of metal will transmit heat and cold the quickest? A Sllver will conduct most readily, and then gold, copper,
zinc, tron, and tin, in the order mentloned. Feathers.
 a spoon tn a glass jar or tumbler prevents lts beln cracked or broken when hot water ts poured theretn
A. Any effect it might exert ts due to the rapld absort ing and conducting power for heat, which would di
mintigh the amount of heat which could operate upon the contalning ine of
F. asks: : How can I clean very hot brass
inave some brass plpes (with live steam in them) thai bave to be pollished. What is the best way to clean
brass, warm or cold, so that it ww keep ta polisb fo somettme? A. It will be difficult to clean the brase work in such a manner that it will continue bright for
any length of tlme, unless it ts covered with a lacker.
 nd not be infurlous to the lambe? A. Try powdered
 A. Try adding tallow or lard to it, untll it thickens suf
E.T.H. asks: What alkali and acid (used Sclentific and Practical Information," In No. 16? A.
carbonate of sods and murlatic actd. 2. What is glas Carbonate of soda and murlatic actd. 2. What is glase
tehing, and how is it done? A. By mixing powdered arlatng from the

C. B. L. asks: 1. What causes the report of agun One fiend says that in er clea ves the air, and, coming together with the great
rce which it posseases, causes the report. A. Sound elng propagated by waves, any cause which puts the rin vibration glves rise to a sound, more or less loud eport of a gun is due to concussion, a sudden striking of the alr, as it were, and the propagation of sound
waves. 2 . What causes thunder? A. Thunder ts the report from a fiash of lightning, and la accounted for in the same way as above. Your apectmen seems to be a
thin film of oxydized oll or gelatin colored with Pras. slan blue.
C. K. asks: Is not a car wheel by which the Cficultyof running on carver may be obvlated a deald-
ratum? A. If you mean a wheel so conatructed that he tratn will experlence no greater resistance on
arve than on a stralght track, we answer: Yes
W. J. E. asks: 1. What is thebest method f kecping steam bollers clean and preventing scale
ithin the boller? A. See p. 116, vol. so. 2. Will the cut-off valve, cuttling off the steam at $\%$ stroke, afford
he aame power as the flat valve engine, the dimension of both engines belng the salme? A. For that point of alve.
H. C. asks: 1. What should be the diame
r, width of blade, and pltch of a three bladed propel ler for a boat 25 feet long and of 6 feet beam, to get a . The englne ts not large enough for that speed. 2 . R. C. M. says: I have a 2 horse power ver Hcal boller, of which I want to take out the fues and
cleanout the ancli; bow can Io it without damaging em? A. If you mean without spolling them for use
the same boller, we donot laink that it can be done.
N. L. asks: 1. Does wood shrink endwise?
friena says that boards on a fence, if put on green, ould brink end wise so as to draw them off the posts. A. The shrinkage, if any, is exceedingiy sllght. 2. How hould a pulley be turned to keep the belt stralght, with
an angular or a curved face? A. Make the axes of the two pulleys parallel. S. 1 lately had occabion to repair was done. we trled it, closed up the bolesso that no air could pass out of the fan, gave it the regular speed, and
opened the plpe so that the fan threw out the wind. To ur surprise, the speed decreased nearly one half. Why I. asks: 1.Please give a brief description of Con of the legends "Lea," "Rum," "Cho,"" "Sin." "Tan,"
S ","etc. $A$. On one side is a scale of 24 Inches, diIded Inte tenths of an inch. Below this, on the left, is scale of inches and half tnches, divided into hun-
redtha. On the right are scales forlaying out a vesel's track by departure and distance. They are used with small quadrants, which can be drawn by the navl-
gator, with a radius of two or three Inches. The icalem sator, with a radus of two or three inches. The icalen
for these quadrants are in the middie. On the left ts tre cale for the 2 inch quadrant, whtch has the rhumbs (or
hords for the compass divided into parts of $11 \nless \%^{\circ}$ chords, slnes, tangents, and seml tangents. On the right is a acale for the 3 inch quadrant, with leagues ( 20 to au
tnch) rbumbs, middle latitudes, and chords. On the other side are lugarithmic scales for the sines and tanents of rhumbs; numbers, sines, versed sines, and tan. ven parts, for a chart on Me maler's projection. The Ne of the scale 1s described very fully in Bowditct's " Navigation." 2. In a globe or aphere revolving on ite
axis, isthere not a line of particles, however minute. that is in itseif tmmovable, whiteallt the other particles
tit revolvearound it? A. Yes, if you can concetve the line
of particles to have a single dimenalon. 3. Would a of particles to have a alngle dimension. 3. Would a
rallioad bridge across the Atlantlc be poselble and practicable? A. It has been proposed by some engi-
eers. Past experience would not juatlfy a positlve opinion for or agalnst the project.
W. F. McD. asks: Should the bed of a ver-
Meal drili stand periectiy level? If the drill stands at an angle of $15^{\circ}$, will it make as true a hole as if it were
level? Doestherule applying to the vertical orlll also apply to the horizontal drlll, lathe, and planer? A. If
all themoving parts are truly atted, the tools may atand any position.
L. D. B. asks: With what sort of tools are
crews made on the softer woods? Inave no trouble Inchasing a acrew by hand on boxwood, but a many-
toothed chaser does not do for soft woods. A. Try an
ordinary tool and use with high speed.
L. D. H. says: 1 . I have heard that salt
water will not freeze, and thatice in salt water ts perfectly fresh. A. It will freeze if the water is motionless and the cold ts sufficlently intense. 2 . How does the the crystals of tce, In forming, refect the particles of
dirtaud impuritles. As to transmission of power by dirt and impuritles. A
belts, see p. 389, vol. 28.
D. H. W. asks: 1. Is there any process by which I canplate steel springs without remoring the
blue coloring? A, Iry rubbing with weak muriatic acld, and then wiplng clean with water and drylag. 2.
What is the best way of taking the coloring off? here any way of covering them with copper (without battery), so that I can plate them with sillver? A. ammerse the steel springs,after belne fresil.
above, In a bath of solutlon of blue vitriol.
D. P. W. asks: Does ice sink in the spring?
Plots on the mbsisalppl say that it does net break up and float away, but that it sinks ou tof sight. I think
hat water forms or falls on the surface of the ice, than
eaking it appear to sink.

