E.M. C. asks: 1 Can you inform me of any process by which 日eee spring exp pased to ne ection of
sea water may be prevented from rustlng, which willn ot impart the temper as galvanizing does? In response to
a simnlar enquiry sometyme since you advised plating
 With nickel. But nctel plating does not protect iron
or eteel then exposed to sea water or sea air. Articles so pust, owing possibly to $a$ silow galvantc action. A.
to Sea water is a compound that few metals (and those are rare and expensive) can succesestully rests for a great
length of tyme. ZInc and Iron are raptaly corroded length of time. Zinc and iron are raplaly corrodedo
This is probably owfing to the afflity wilch chlorine the most unaliterable of metalls, are rapplaly dissolved 1 n , itro-muristlc acth, where the attacking element 18 nas. cent chlorine. We would suggest bome strongtranaplater that the passage of a current of electrictity or galranise through tempered steel (as tn electro-plating)
deestroys the temper. 18 this correct, or an error? A . We are not aware of any rellable expertments on this
potat. . Can you give a rellable rectpe for martine point. . . Can you give a reliabie rectipe for marine
glue? A. In making, marine glue, the india rubber and naphtha should be heated and agitated In a covered vee. sel untll solutlon is complete, and then the powdered
shellac added, and heat and stlring contliued until 11 . quefaction has taken place.
A. H. D. asks: 1 . What is the process of
pannig on tron to gel a fint itike that on tewingma constats merely til covering the surface of the metal With a black varisish. The principal ingreatents of this of turpentine 19 afterwards added to promote drylng. We should gay brozze leat, from tits cheapanes.
there any boob that glves explict drections
same? A. Ure's. Dictlonary" will give you fomm matio
W. B. says: "If a galvanic battery consists any electrictry be geneitated if I jotn all the lead plate together and the zinc, or will I have to joln a lead to will be generated? A. By jolning all the lead plates to gether. andall the copper, we obtaina quantity current and by joinlog the lead of one cell to the copper
next, and so on, an tntensty current 1 s produced.
E. V. asks: Is there any trustworthy means
making benzine or benzolline nonexplosive?
A. The dangerous nature of benzzine and simllar tydrocirbons
 plodes on the application of fame. We can only prevent this by enclosing these compounds in a artilight veseels, or by combnng them to such an extent with non-voiat
tlie substances of which they are natural solvents that their vapors have but feeble tenston. We know o no chemical means to preserve he chemical consitu
tlon of pure benzine titact, and yet deprive it of one o
J. L. A. asks: 1. How is adhesive court of water: straln and add gradually 2 parts tincture of face of thin silis, black or white, by means of a camel's hair bruan. Give as many coats as necesary, 1110 Ing Pire the prepared surface one coat of the tincture o
benzoln aloue. The silk should be stretched on a frame 2. How can Id disoive copper, nickel., brass, and othe
metals easill, so os to mold them? A. You can melt the metals named by exposing them to a etrong heat, in cru can then be cast in molds.
J. B. H. Aasks: How can I remove black ink a cloth dipped 1 n a weak solution of oxallc acid unt he statn 18 removed, and then win
D. M. asks: What metals expand on coolby melling together 2 parts antimony, 9 parts tead, 1 part
. M. asks: What gums or equivalents
 action with coal oil might properly be made the subject
of experiment.
V. R. C. asks; What quantities each of acetste of llme, sulphurlc acta, and water are nece esary
to make acetone, , yuch as 18 sometlmes used for corro. ding lead? A. You have reference, we euppose, to the production primarily of acetcic acta, from which acetone
is formed. An ordinary acetic actd may be made with.
 parta. Digest well ta a close vessel, with a gentle heat. 11 liuld. Acetone 1 f frmed by passing the rapor of cacet. Ic actat through an tron tube heated to dull redness, and
condens J. O. T. asks: 1. How can I remove common
India ink from mechanical drawings without inuuring the puper? A. Inda tink must be removed by the edge rubbed over with any hard smooth substance. Fine sand paper is also useful for this purpose. For small errors,
it 18 perhaps It 1 perhaps best to patnt them out with thick chinase
or luke white. 2 . How can the drawing be cleaned, Without Injury to elther paper or Ink? A. A good qual. without leaving dirt. Try stale bread. 3. Can the four how: $\left\{\begin{array}{l}x^{2}+y=7 \\ x^{2}+\mathbf{y}=11\end{array}\right\}$ A. These equations involve the higher mathematics, and we conld not publish the solution in these columns. $A$ glance will show that $x=2$ and $y=3$.
4. How can 1 best secure a place as assistant to some ciril engineer? A. Under the crrcumstances, we cun
offre ilttle practical advice. There to always a fair demand for stilled and experienced engineers, but in or fession, the influence and ald of friends is of incalculable adrantage. You might make it a point to call upon ce, or perhaps en deavor galu room in the offle of some well known
engiueer. where you could learn much of the protession engineer, where you could tearn much of the profesion,
and bes ides form acqualntances which would lead to a
F. M. D. asks: Is there any invention, pat. tnism, , such ara s spring antached ot the foot? A. A.
ao asist the feet tn walking have been made.
L. E. G asks. 1 . What is the idea of amal-
gamating the zinc of a galvanct battery ${ }^{\text {a }}$ Can I use common sheet zlic? A. The object of amalgamating he zinc is ts prevent the action of the actd upyn it ex
cept when the electric current 18 passing. You can use common sheet $z$ zic, but tit will soon wear
can I make porous cups? made of unglared ches a bake them for you, of any shape desired. . . Does the acta of the porous cup flow into the fuld of the $z$ inc, o:
does $1 t$ evaporate? A. In
 comes in contact through the porous cup with the flutd
In the 2 Inc cell, and thl 18 necessary to in the 2 nc cell, and thts 18 necessary to allow the pass
age of the electric current. 4 . How is Smee's yoltas battery constructed? A. Sme's battery consists of a
strip of silver or platinum suspendedbetween wo plate of zinc, and the whole immersed in dillute sulphuri G. B. G. asks: What is the composition and noed of proparation oth the enamel, black and white figures printed on or put in with a pen by hand? A
Black enamel: Peroxide of manganese 3 parts, zafre Wast. MIx, and add as required to whiteenamel, whichis
 melt again; and repeat thts three or four times. Fig.
ures are put on white enamellas on china, while in the biscult" sta
A. \& B ask: In there were a hole through the ball everstop, or would dt pass through and through stop as a pendulum does when it has no power to move it, that is, shorten its stroke every time it swtings un.
tilit stops. A. We thilk B. 18 right.
F. L. K. asks: How can I find the weight of
 all is composed.
F. P. H. asks: Why does a star, seen with
he naked eye, look trregular? When viewed through a ielescope, it appears round. A. The twinklligg of stars through the telescope except when the latter is out of ocus, and then thecause tio obvious.
J. C. asks: How can I exterminate red
 mase a strongsolutlon
which they frequent.
 shellac, zoz. gum benzotn; put in a bottle tn a warm
place, and shake occastonally. When the gum is dis. olved. let 1 t tand ta a cool place two or three days to settle, then pour of the clear into another bottle, cork iff in the irst bottle 1 s to be thinned with spirit to make it workable for frrst coats or coarse work. It must be
stralined through a cloth. Then take 9 l 1 b fliely ground ronze green, varylng the shade as required by adding ampblack or rec or yellow ocher. Let the fron be powder asrequired, and lay on, with a brush, in a thin coat, having gilig tily warmed the artcles to be bronzed When dry, addanother coat if uecessary, and touch up Where requrred with a little of the brone on a pencl1.
Just before it 18 dry, gold powder may be put op nish overall thally.
J. A. asks: How can I separate albumen
rrom blood? A. Byrecelvingthe blood in moderately leep vessels and allowing it to coagulate, much of the serum or ar abumen will separat.
whence it may be skimmed oft.
R. M. W. asks : What does " Patented, S from Europe, and I thank the article patented is a French or Belglan Invention. A. The French authoritieg require these letters to be market on patented articles. without guranteoof the government." 2 . Is there
my patent nd ths out by examinting one. Patented artcleles are re. quired by law to be maried "patented," with date of
patent. We welleve tit patented. 1 . Is there any suc. cessful stump extractor? ?A. We have illustrated severa for printer's rollers? A. You can make composition
 water. For greater hardness, use more glue. 5. Is it it
possible to analyze a mixture of chemtcals in order to
 sttck of charcoal and tmbeddng the stone tn plaster of
Paris. The stone was a dark one and was changed
 change of color. The yellow Brazillan topaz, strongly
heated, becomes rose red, and the saxon topaz, when gently heated, whtte. We are afrald nothing can be done
and H. G. B. asks: 1 . Will platinized silver do
for the negative metal of a grove battery? If so, what is he best way to platinize lead, or copper will answer in Groves battery, but in
 the double chlorlde of platinum and
solved in a solution of caustr potash.
G. H.J. asks: 1. What are the so-called Srobarls mean cards slazed wrtt soluble glass. This
 ous plgments can be ueed for coloring. See our adver ous plyments c
thsing columna
J. D. sags: I produce an orange color with
hichromate of potash, alum, , litharge, acta, and soda. Whatmust I add to deepen it? A. ITs 19 a matter to be determined by experiment. Consult some practica
chem 1 st, who may have faclities at hand to make the
W. V. D. asks: How much worm surface is am told that, to condense 200 gallons of proof pplrit in

 You should read the article on evaporation in Ure's
"Dictionary.
M. T. asks: Why does coffee, either ground
or in the berry, even If closely kepe tin a tin can, loose its In the berry, even If closely kept in a tin can, 108 e e ts
orma, and become disagreable and bitter? A. The romatc princtples of coffee, on which 1ts flavor de cofteels rigldy yexcluded from the atr (which is almos mposstbletn ordinary vessels), the flavor is soon lost, and the bitter principles, among which 18 tannIn, are lef
behind. The best coffee 19 made from the freshly roast ed and ground berry, by infusing $1 t$ in boillng water for
few minutes. The coffee Ahould not be bolled 1 n to water
W. C. asks: What is tungstate of soda, rec.
mmended for maktng clothng uninflammable? Would make wooden tobacco plpes uningammable? A ungstate of soda 1s a compound of tungstic acta a ivetungstate of lime. The compound in solution, to hitch a intle phosphate of soda nas been added, ha
ong been used in England for the purpose of renderlat long been used In England for the purpose of rendering
fine fabrics uninflammable. It does not prevent char ring from the action of fre, however; its only use be ing to prevent substances burning with fiame.
S. B. R. asks: On what stuffs can the an Mine dyee be used? How can I dye cotton godis with ton can bedyed with anilline preparations. To get a Intense black, it 1s is ecessary to mordant ta chlorlde o
manganese, workstug the cotton in it for about an hour wringout well and, wthout rinsing, pass into bolling of the manganese salt, wash the cotton in water and pas into a lukewarm chlorlde of lime
$\underset{\text { ticking tincil to }}{\mathrm{H} \text { lase for Leyden jars, disks, etc.? }}$. C asks: What is the bet manner $\underset{\text { Pouid bethe bestctty for me to }}{\text { Pago to,to get inatruction }}$ Is mechancal drawing taught free at the Cooper Instl-
tute in New York? Is there anything of the kind tn can obtafnall necessary instruction,Including drawing at the Cooper IIstitute. We ecarcely thln y you willing
 sides. It is quite common formechantcsto ntirm,In the Lost positive manner, , hat this cannot be done. The not belng generallly understood, cause them to come to
thts erroneous concluston. If a good workman will thts erroneous concluston. If a good workman will
take a try square, such asis commonly found in machine
 sigquare, and work as close as possile, he wnil man ina
when he has reached the fourth side. it and theblad of his square will not colnclde. There 18 a cause for
this, and it lays malnly fin the angle of the square belng amall fraction less or mere than 90.0 When he he
 f the square. If he will take a prece of sheet steel an orm a try square out of It. and with ths commence and side. which way he square is :out, and carefully correct eff orts, have it so nearly perfect hat no error will ap have made a perfect try square, and with it he ca
ne the square other blocks, comtng out at the fourth side cor rectiy the frst time. The secret of the "I Im posstbilty" In this problem rests in the inexactness of tools and
workmanshlp; for certalaly if the four corners of the block are just gyo each, the opposite sides will be paral
J. S. says, in reply to L . and H., who have
anficulty in burning sawdust: "i have a boiler of simllar dimentsons and l burn my sawdust successfully. Iuse
a fan (costing only about 12 or 15 dollares of 24 Inches $d$ ameter, with 0 inch wings,driven at 1, , Coorevolutions $p$ minute. I Aligo employ a trunk made of Inch boards t
conduct the blast Into the ash plt. I use a grate ba Which 1 11 Ighter than the common bar, with the space

A. J. K. says, in answer to J . W. B.'s query
s to calculating machnnes: There ere machnnes which

J. C. says, in reply to J. F., who inquired
 Heve the timeplece 18 nothlug but Robert Houdin's Clock, What horks as toliows At one end of each han
there ts a large dibs; these seem to be only counter potses, but, in reality. they contain concealed watch
movements, whtch, worktag on the center by means o appropriat evers, cause each hand to move on the dia
and mark the correct time in a mystertous maner. J. F.looks closery on these disks, he will probably gee

## Minerals, etc.-Specimens have been re

 eived irom the following correspondents, and examined with the results statedC. L. McC. \& Co. Your spectmen is galena tn quart A.M. H.-Your spectmens contain copper and iron No1 1 w white pyrtes. No. 3 resembles quartz and whic pyrtes.
E. G. A.- Your spectmen ddd not reachus. Send us a
T. M.B.-This 19 a spectmen of earthy chlorte, con
 meantng green, on account of the greenish appearance of the mineral. It is of no economical Importance,, a
though thecompact variety was employed by the Ind though theco
ans for plpes.
J. W.-Your spectmens are ochers, that 18, clay charged with oxlde of iron, to phich their coloris due.
The red espectally seems to be avaluable mineral palnt You shouldcorrespond with some one who is intereste nhe use or sale of such articles.
S. . . . -Y Your maerals decomposed hornblende. J. W. Jr.-The enclosed 18 blue clay, a 8 ill cate of aln
mina. When clay burns white, it 18 used in the manu
R. M.
R. M. L. - Your mineral 1 s specular oxide of iron. . C.-Clay contalanag much free sillca and brown or
B. F. M. - Dark colored clay,a allcat eof alumina. J.E. S.- Your mineral is waite quartz, somettimes, oughimproperly, called damond. The purest varlety
hich is crystalline and transparent, 18 used by jewel. rs , and 19 also made sometimes tnto spectacle lenses. called pebble lenseg. Quartz 18 sillca, whill the dia.
mond is pure carbon. Quartz will scratch and some. ond is pure carbon. Quartz win scratch and some
yes cut glass, but not with the facmits of we
M. R. L.-The minerals sent are oxide of tron, chefly bright spangles Itsemica. From lts gllmmering, splen dent appearance you have probably mlutaken it for sil ver. The other ores are galena, a valuable ore of lead
This sometimes containg a paying quantity of ellver This sometimes contains a paying quantity
but.this can only be estimatedby an analysis.

G. S. R. asks: How can I reduce leather,
buffilo hides, for intance, to a pulp, which will set in:
 off?-J. V. B. asks: Is there any subetance with which I can coat cardboard, to make a white elate, to be writ.
en on with a lead pencll? -G . W. F. aske 1 . Can . piveme a rule for setting out circular saw teeth? 2 . impreamming ow teeth? c. P. asks: In taking impressions of the human head in
prouble in making the hair and whisker

## COMMUNICATIONS RECEIVED

The Editor of the Scientific American cknowledges, with much pleasure, the re eipt of original papers and contributions pon the following subjects :
On the Morse System of Telegraph Signals by. L.
On Ctilizing Coal Dust. By J. H
On the Preservation of Timber. By J.H.M
On the Principles of Ventilation. By C.
On Asphalt. By C. F. D
On the Relative Attraction of the Earthand un. By W.M. D.
On a Substitute for Mica in Stoves. By A A. H .

On Mr. R. A. Proctor and the Million Dollar elescope. By S.H. M. Jr.
On Preventing Incrustation in Boilers. By E. On Ocean Towers. By W. K.
Also enquiries from the following
S. H. W.-H. C. A.-H. S. W.-H. B.-W. W. A.-L.A.C.

- G. S. - W. W.

Correspondents in different parts of the country ask: Who makes a centrifugal clothes wringer? Who make
moke-consuming devices for boller furnacea? Who smoke-consuming devices for oofler furnaces? Who
makes corn-ahucking machines? Who makes woodther than the ear trumpet,forhelping the partially deaf to hear? Makers of the abovearticles will probably pro-
mote thelr interests by advertising, in reply, In the Scimote their interests
ENTIFIO AMERICAN.
Corre manufacturers, or where spectiled articles are to be had,
siso those havfig goods for sale, or who want to find partners, should send with thefr communfcations an smount suffccient to cover the cost of pubilication under
he head of "Business and Personal" which is spectally

## [OFFICIAL.]

## Index of Inventions

Letters Patent of the United States

## were granted in the week endin

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and each bearing that date.
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Bag fastener, s. Welligit
Bag fastener, S. Wellington......
eam and rafter, H. C. Luedek
Bed bottom, spring, A. W. Hight
Billard chalk holder. J. Plunke
Bohler, steam, R. J. Gould
Bolt headng machine, J. R. Abbe...
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Buggy top, slat Iron, English
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ar coupling, D. A. Bainter.
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Car coupling, s. S. Sartwell
Car coupling. G. D. Splelman
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Fence, farm, S. Stan bro. Iron, Forsyth \& Counte Fender for vessels, C. Wacker.
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Planter, corn, L. Roerlg....
lanter, seed, , J. S. 1 3arto
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Raft, Hfe, G. Clark... ..........
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clissors, C. m. Johnson.......
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Sewing machine button holer, Howard et al. (r)
Sewing machine tucker, F. W. Brown
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spindle, bandling D. His \& Meehl, (r)
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Stone tool, T. Joyce...
Stove, gas, J. McKenzie
stove grate, J. B. Hunt.
stove, heating, M. B. M
Stud and button fastening
suspenders, $J \times$.
 Thill couphning, L. Lee.........
Thill couplng, B. H. Wessel.
Toy wind wheel, J. Hagstrom
dian Patent Office. Remit the fees by check, draft, or
f'ostal order. Do not send the money in the box with rostal order. Do not send the money in the box with
model. Give us your name 1 n full, middle name included Inventlons that have already been patented in the
United States for not more than one year may also be United States for
On flling an application for a Canadtan patent. the
Commissioner causes an examination as to the novelty andutilty of the invention. If found lacking in etthe of these particulars, the application will be rejected, in
which case no portion of the fees pald will be returned to the applicant.
Inventors may temporarily secure their improve
ments in Canada by fllng caveats; expense thereof, in full.
about Canadar patents, as.
UUNN 37 Park R
VALJO OP PATEMTS
And How to Obtain Them.
Practical Hints to Inventors.

ROBABLY no investment of a omall sum of money briugs a greater return than the
expense fncurred in obtannag a patent, even
when the nuvention ts but a smallone. Large men the invention is batasmanane. Larg well. The names of Blanchard, Morse, Blge
low, Colt, Ertcsson, Howe, McCormtck Hoe low, Colt, Ericsson, Howe, McCormick Hoe,
and others, who have amassed tmmense forand others, who have amassed immense for-
tunes from their inventions, are well known. Eallzed large sums from thelr patents.
More than Fifty Thocsand inventors have avalled themselves of the services of MUNN \& Co. during the
TWENTYSIX years they have acted as sollctors and TWENTY-SIX years they have acted as solicitors an
Publishers of the Scientifio Aserican. They stand a the head tn this class of business; and their large corp of assistants, mostly selected from the ranks of the Patent Offce: men capable of rendertng the best service to the laventor. from the experience prachicalyo
while examiners in the Patent offce : enables Mons \& Co. to do everything appertaining to patents betre
HOW T
Howaln pitille
This is the
closing in
in
ry letter, descrinag some invention which comes to this a completeapplication for a patent to the Commissloner
a of Patents. An application consists of a Model, Draw Ings, Pettiton, Oath, and full Spectfication. Various
offctal rules and formalittes must also beobserved. The efforts of the inventor to ao all this business himself ar delay, he is usually glad to seek the ald of persons expe rlenced in patent business, and have all the work done over agala. The best plan is to sollctt proper advice at
the beglaning. If the partles consulted are honorable men, the Inventor may safely conide his ideas to them patentable, and will g

To Make an Application for a Patent
CANADIAN PATENTS List of Patents Granted in Canada, January 23, 1873.

3,05t.-H. M. Baker, w. F. Stone and J. H. Vermily
Washington, D. C., U.S., assignees of G. W. Hunter same place. Improvements on sewing machin
"Hunter's Sewing Machines." Jan. 23, 1874. J. Goull Pratt and A. Roy, Montreal, P. Q., assignees of ations aux machines a tisser les corsetes, les gueutrees, etct.,
called " Temple Entraineur Ameliove." New and use. ful tmprovements in mact
gatters, etc. Jan. 23, 1874.

## galters, etc. Jan. 23, 187. 3,056. - H. Martin, Chicago,

fleld, Hampden county, Mas. U. S., M. H. King, Spring neld, Hampden county, Mass., U. S. Improvemente
on brick machines, called "Martin's Brick Machine." Jan. 23, 1874.
3,057.-E. N. Ran


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any conventent scale. The dimenslons of the model should not exceed twelve faches.
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gredient s , must be furnished.
gredtents, must be furntshed
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