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 in, Mass. Filer best Preses, Dies and Fruit Can Tools,

J. $G$ G. H. can kee his cistern water fresh


 the power of I Iocomotive englie.-C. will fand diree





 Auchlicloos' books on "LInk and Valve Motions."-w.

cribe on .234, rol. 27
(1) A correspondent says: $I$ have read with
much Intereat the very able articles on
. Practical Mechanism,", written tor four raluable paper by Mr .
 worsed for years at thelt trade. But $I$ beg leare to dif




 teal macmintats, who hare used tapas wth slearance only on the top op tote teet, as proposed by yr. Rose


 epecilaly ti holes that are not round, than if it had
 the tap may do tots work steadills," My experenence has een that, tor a hole not rouna, it apee. The engraving

epresents the outline of a hole not a true circle. B is
sectlon of a tap with three futes. When in the positon shown, the point, A, does not touch, and the diamethe or the hoe butng greater across C D than where
the futes, $\mathrm{E}, \mathrm{F}$, of the tap are cutting, the the other two flutes, $, \mathrm{F}, \mathrm{F}$, of the tap are cutting, the
tap will be forced back untll the point, $A$, touches, and aph tooth in succession, as it comes around, will drop
ato the same place; thus the tap will follow the irregu. larties of the hole. A spiral form of flute ts the best . Taps will cut freely and clean without having clear-


In the celebrated Whitworth taps. If the teeth have clearance on the sides, the cuttings are apt to lam the
top in turning it back. Again, a tap without clearance tting thread. A tap with three fates only has more ot the circumperence of the thread gulding it in the hole,
and hence is ateadier in using and less llable to wabble or to follow any inequalitien in the conaguration of the hole. A spiral form of fute is dimealt and expensive
to cut, and must be sharpened by hand instead of by the minel.
(2) F.C.M.asks: What difference is there in
 that evolved by the friction machine commonly used
cor medtcal purposes? A. There is still much uncer tasinty as to the real effects of electrictty on the human system, the cases in which it is to be applled, and the
best mode of applying it. Practical men prefer the use of mode of applying it. Practical men prefer the use
of currents to that of statical electrictty, and, except in a few cases, they prefer discontinuous to continuous currents. There 1s, flnally, a cholce between the
current of the battery and that of Induction. Electri current of the battery and that of Induction. Electri-
cal currents should not be applied in therapeutics without a thorough knowledge of their vartous proper-
and ties. They ought to be used with great prudence, for
their continued Matteuccl, in his lectures on the physical phenomena of living bodies, expresses himself as follows: "In com-
mencing, a feeble current must always be used. This precautlon now seems to me the more important, as I did not think it so before seefng a paralytic person
setzed withalmost tetanic convulaions underthe action a current from a continue the application too long, especlally if the cur currentthanacontinuous one a espectally if it be strong but after 20 or 30 shocks at most, let the pattent take (3) G B
(3) G.R.McC.asks : Is there any simple meth-
od by which glass and china ware may be marked with a name or Initials? A. Glass ware maybe indelitblymarked
oy means or a aramona, or very nara stee
(4) W. H. M. asks: What is the meaning of
coldpressedcastor oll? A. Castor oll ts made by press ing the castor oll bean in a cold or warm state. Wh pressed cold, it is called cold pressed castor oll.
What work on chemlatry do you consider the A. If you desire an elementary work, we would recom-
mend Bridge's edition of Fowne's "Elementary Chem of Chemistr
of a C.O.D. asks: 1. How can I keep the head what can I clean the fily dirt off without injuring the
head? A. Try a small quantity of powdered rosin. 2. Doesit damage the strings to almays seep them in tun ing order, and to leav.
condition? A. Yes. How can I remove flesh worms from the face? A.
Bathing the face with bay rum bas been recommended but perhaps the better rectpe would be to abstaln from
(6) I. I. Y. asks: 1 . What can I use t
harden butter in summer instead of fce? devices for the production of a low degree of tempera
ture by artifictal means have been fully described in the Scientific Amerioan, many of which might be mad applicable to your purpose. 2. What can I use to colo butter yellow? A. Butter is often artifictally colored
by ald of annatto, turmertc, or infusion of calendula
(7) C. H. M. says: You stated recently sometimes induce, and accelerate the crystallzation of substances. Please explain, more spectificaly, under What arrangement or circumstances thls is the case,
and to what extent. A. Every metal is thrown down in a crystallne state, when there is no evolution of gat
(8) S. H. G. asks: Do the born blind ever "see stars," resulting from a blow or strain? Pressure
with the thumb and finger on the closed eyellds can be made to produce sensations of color. These tints, in is beautiful, and haveno connection with the memory They are simply colored plctures evolved out of the darkness by mechantcal pressure upon the ball of the
eye. Are the blind susceptlble of this? If so, they may have ideas of color without having ever seen a
ray of light. A. Violent concussion will produc "stars "even In a blind person. You could obtaln bet-
teranswers to the remainder of your question by con Can the locust crop out west be utllized us. Can the locust crop out west be utllized for stock, or
otherwise? A square acre of solld living meat ought to be worth something in this age of the world. A. As (a)
(9) O . H. asks: Can you give me a recipe
ormang gelatin, such as is used in making molds for molding plaster of Paris? A. Gelatin is formed by the action or bolling water on whitelbrous tissue, cellular
tisaue, the skin, organtc constituents of bone, etc. the gelatin as a brownisp yellow mass. Common glue
is an mpure form of gelatin, and is generally employed
 heat A. A black substanee is one which absorbs all
rays of light which fanl on it, and converts them into
heat, with a corresponding rise fin temperature.
(11) F. H. asks: In a discussion on the ad ceeded in making alcohol from its elements. On betng
asked what the substancer used were, 1 namedgraph asked what the substancea used were, I namedgraph
ite, hydrogen, and oxygen. One gentleman objected and said graphite was not an element. I Insisted $1 t$
was. Is graphtte an element in the Was. Is graphite an element in the sense in which
used it in the discussion? A. No. Graphite, though a form of carbon, is not pure $C$, as most spectmens con
taln iron. Instead of graphte, you should have sal
(12) A. D. B. Bays: I have a large baro meter hanglng on the wall; just under it, about 4 fee
a way, are the steam plpes which heat the room. As the barometer does not indicate rightiy, can the steam
pipes underneath have ang influence on it? pipes underneath have any infuence on it A. In ant
observations with ba rometerg, whatever be thetr con-
struction, a correction must be made for temperature. struction, a correction must be made for temperature
Mercury contracts and expands with different tempera tures; hence its density changes, and consequently the of the density of the mercury; so that, for differen atmospheric pressures, the mercurtal column might
have the same hight. Accordingly, in each observation the hightobserved must be reduced to a determinat temperature the chotce of this is quite arbitrary, but
that of metting tee is always adopted. By the ald of tables, which have been prepared for this purpose, the
(13) H. W. ritys: I am told that a 1 inch horse power. I am ualng a 4 inch belt. Am I asing 4
horse power? A. There have been careful experiments horse power? A. There have been careful experiments
made whlch ahow how much power a belt will transmit
under average mucha beltdoes transmit, in any particular instance
(14) E. B. . asks: Does each point on the cir-
comference of a
a wagon whel , as It ouches the ground, (15) ). A. J. Says: In silver plating German
siver spoons, the battery seems to mork weli; but when i come to burntsh the spoons, the coating peels off. Can you tell me how tomake a good job of it? A. Place the
articles to be plated in strong lye water to remove all grease, and then for a moment in dllute sulphuric acid. Wash in clean water and place immediately in your as possible in placting it in the bath.
(16) C. H. M. says: We have a hand car worsed by a perpendicular rod from a walking beam.
Whil the carrunany easter with this power appled at heend near
end? A. No.
(17) T. C.W. asks: Which is the coldest,ice
1nches thick with snow on one side of it, or tee 26 inches thick, solld ? A. The ice which is made from the coldest water will last the longest. 2. Does not lake
ce frozen in or near Cuicago last longer in a water oler than ice frozen in Kentucky
When water ls bolling, can it be made hotter by hav-
What is that liquid which barbers use in shampeotng? A. Borax is commonly the principal ingredient of the compound.
Can a loco
Cana locomotlve be constructed to run 75 milles an our? A. It is doubtful whether the
be kept upon the track at such speed.
(18) F. D. B. asks: Can I make a miniature diameter? Will it produce electric sparks infifty (or
less) rapid revolutions? A. If perfectly constructed, less) rapld revolutlons? A. If perfectly constructed,
electrical actlon would andoubtediy take place, as in electrical action would undoubtediy take place, as in
larger machines; but on so sinall a scale, we coubt ence of electricity might be determined by the use of (19) B.A. J. says: I have a wire connection
between waterwheel and my house, which is 500 feet distant. Do the wires increase the danger of the house
fromlightning? A. Yes. You should have an extenton from the wire into the ground, and the terminal your other question, try the experiment.
(20) H. H. asks: How are carbon cylinders charcoal is put into a mold, then plunged into a concen-
ratedsolution of sugar, after which it is drted, and exposed to an intense heat in a covered vessel. As to your (21) J. McC. says: I am running 4 hydrauHe pumps, using linseed oll for getting on the pressure
The diameter of plunger 18 is inch, with 53 I nch stroke Each pump has a receiving valve and check valve. The openings in plpes are $\%$ Inch, with an average length of
about 10 feet. Safety valve 1 lb ., lever 2 lbs ., with about io feet. Sarety valve ili., lever 2 ibs., with a
welght on It 30 Ibs ; distance of fulcrum 1 is inches; diswelghtis fastened on, i3s/ inches. Opening under the oatety valve, \% Inch. The hydraultc press cyllinders are
$14 \%$ Inches in diameter. How many Ibs, pressure does 14\% inches in dlameter. How many lbs. pressure does
It take to ralse the safety valve off its seat, so as to alIt take to ralse the sarety valve off its seat, so as to al.
low the oll to escape through an opening above the seat? How many lbs. pressure are to the square lincb
nches press cyllinder, and bow many to when the pump raises the safery valve, loaded in the above way, off tos bearing? A. You do not send quite
enough data; but the pressure is about $2,500 \mathrm{lbs}$. per (22) A. P. S. asks: What publication would
e of the most use in helptng ae to run an engine? A. Wedonotknow of any work that will ald youvery
much. You will find many useful hints in Bourne's Catechism of the Steam Eaglae. We add that will have to learn corunan engiae by reading a book tual practice. At least, this is true in the present con Aratare orthe subject.
(23) J. H. G. says: I have a lead lined tank, Please tell me what kind of varnish to use to prevent this, and also to prevent injurious effects of lead in
newlylined tanks. The varnish must be insoluble in (24)W.E.B.says: In your issue of August 29, mula : $\mathrm{A}^{\circ}={ }_{2 P i}^{860 \mathrm{R}}$, and $\mathbf{C}=\sqrt{2 \overline{R^{2}}} \overline{-2 \mathrm{R}^{2} \mathrm{cos}} . \overline{\mathrm{A}}$. In place of the latter, I think the following mach more stmple in
practice : $\mathrm{C}=2 \mathrm{R}$ sin. A .
$\underset{\text { who states }}{\text { (25) }}$ W. M. K. . . . . nection from the bollers to the steam drum 8 Inches in
diameter: If you make your connections to the steam dameter: If you make your connections to the stean
drum 6 inches, you will have no more trouble. It wll equalize the pressuretn the three bollers. (We belleve
that the best way to fix the bollers is as we have already indlcated: Arrange them so that the water cannot be
(2G) H. L. M. says, in answer to I. S.N.,Who
asked how to straightena rifie barrel : Take two plecea of hard wood, one about 30 tiches long and thick nough to stand the pressure required. Take off about fullon the ends. Put your rife barrel with its hollow sideagalnst it. Thentakethe other plece of wood, 8 or
inches long and about $/ 1 / 2$ inch thick, and put it on the other (the round) side of the barrel, and then put the
whole in a strong vise, and screw up till the barrel is whole in
otralght.
(27) C. B.says,in answer to T.S.S. who asked Locomotive drivers to sometimes have line wheel tyres beneath the tyres. According to a recent method the distributed at short and regular intervals on the pert phery. Into the spaces between these teeth are driven
blocks of wood somewhat thicker than the length of
(28) A.McQ. says, in reply to G. W. S., Who
Asks if there is any device for taking steam out of a boller by a tube, and convestng it under the grates of
the fireplace to keep the fire down when the engine is topped: In somesteam fire engines, a small tube from the upperpartofthe boller conveys steam and ditscharge
it over the top of the flues for the purpose of checklag or extingulshing (as the case maybe) the fire in the fire
(29) J.A.M. says: To soften the tone of a vio In, string it up to the required pitch; take a small gum

