

## (answers to Correspoulents.




H. \& R., of Ontario.-The amount of air to be admitted, through perforated pipe at back of the bridge wall, across a boiler furnace,to effect
perfect combustion, will vary according to circumstances. Provision should be made for maximum admission, and regulating the same down to a point where just enough air is admitted o consume the smoke and no more. Every pound of air admitted beyond this point will result in loss
of heat. Therefore we advise you to err on the safe side, it you err at all, of heat. Therefore we advise you to err on the safe side, it you err at all,
by making the admission free, and the perforations in the pipe num erous and of good size. We cannot even approximate to proportions, as you give nodata, but you need not fear to go ahead with the work, if you do
not stint the capacity for the admission of air. With a good damper you not stint the capacity for the admission of air. With a good damper you
can control it perfectly, and get good results.
A. J. H. \& Co., of Mass.-We have never seen ait iron so badly scaled or incrusted with oxide, that it could not be cleaned with a
solution of one part sulphuric acid in ten parts water. Paradoxical as it solution of one part sulphuric acid in ten parts water. Paradoxical as it
may seem, strong sulphuric acid will not attack iron with anything like the energy of a solution of the same. On withdrawing the plecess from
the weak solution of acid, they should be dipped in a bath of hot lime water, and held there till they become so heated that they will dry immediately when taken out. Then if they are rubbed with dry bran or sawdust, there will be an almost chemically clean surface left, to which zinc will adhere readily. We think you have been using too strong acid. T. G., of N. Y.-The brown powder collecting on the zinc of your Daniell's battery, is a oxide of copper deposit. This deposit and the copper deposit on the surface of the cup cannot be wholly avolded,
but, according to Pope, it may be greatls lessened, by suspending the zinc but, according to Pope, it may be greatl/ lessened, by suspending the zinc
so that it will not touch the porous cup below the surface of the liquid, and by saturating the bottom of the porous cup to the hight of half an incli with paramil. For answers to your other queries, we refer you t
ard treatises on electricity. We cannot give space to them here.
M. L. W., of N.-If a pipe containing water have its lower end open beneath the surface of mercury, upon opening the upper end of the plpe, the water will fall in the pipe and bubble up to the suriace
of the mercury, until the column in the pipe just balances the pressure or the mercury, when the flow will cease. The specific gravity of mercury at $60^{\circ}$ Fah., is $13 \cdot 56$, water being 1 . We cannot give you its price per pound.
F. X. L., of Md.-There are many flexible transparent substances beside isinglass (mica). Thin plates of gelatin, or horn, films of
collodion, tracing paper such as is used by artists, are articles which we think might some of them answer your purpose.
Restoring the Color of Gold after Soldering.-Let R. R. boil the gold, after soldering, in diluted oil of vitriol; rinse in clean
water, polish with tripoll mixed in oil (sweet oil is best), wash and with crocus on a clean cloth.-C. J. C., of Iowa.
Boring out Segment of Cylindrical Ring. - Having published a practical method for performing the above work, we take this subject are no longer of value. We cannot undertake to reply to this effect to each personally. We have on hand a number of designs, few of which are practical, and none of which we shall use. We are much obliged
to all for thelr attention, and shall be glad to hear from them on any other to all for thelr attention, and shall be glad to hear from them on a
oractical subject withln the scope of the Scientific American.
To Fasten Chamois and other Leather to Iron and Sterl.-Dr. Carl W. Heinischen, of Dresden, gives the following recipe Ior the above purpose: "Spread over the metal a thin, hos solution of good glue; soak your leather with a warm solution of gallnuts before placing
on the metal, and leave to dry under an even pressure. If fastened in this on the metal, and leave to dry under an even pressure. Her it is impossible to separate the leather from the metal without tearing It.-G. E. M., of Texas.
R., of Va.-You will find information in regard to windmills In Craik's " Practical M
J. H. W., of Cal.-The density of proof spirits is not materially afected by pressure, and the hydrometer would show the same results on the mountain as in the valley.

## Gusimess aud exrsmat. <br> Chargefor Insertion under this head is One Dollar a Line. If the Notical exceed Four Lines. One Dollar and a Half per Line woll be charged.

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the charts showing quality of work performed.
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past five years. Theo. Tusch, 37 Park Row, New Yoak.
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Wells, 389 Broadway, N. Y .
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particulars address Mr. Michael Bittler, Eagle Hotel, Bethlehem, Pa. McCauley's Improved Force Pump, especially adapted to deep wells. Send for Clrcular. R. A. McCauley, Baltimore, Md.
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break or rust. Send for circulars. Jennings Brothers, 352 Pearl st., N. I. House P'lanning.-Geo. J. Colby, Waterbury, Vt., offers in rmation of value to all in planning a House. Send him your address. Manufacturers and Patentees.-Agencies for the Pacific Coast wanted by Nathan Joseph \& Co., 619 Washington st., San Francisco, who
are already acting for several firms in the United States and Europe, to are already acting for several
whom they can give references.
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## Quexits.

[We present herewith a series of inquiries embracing a variety of topics of greater or less general interest. The questions are simple, it it true, but we
prefer to elicit practical answers from our readers, and hope to be able to prefer to elicit practical answers from our readers, and hope to be able to
make this column of inguiries and answers a popular and useful feature of the paper.]
1.-Silver Gilt Moldings.-I wish a recipe for making silver gilt moldings to imitate gold. - N. B.
2.-Core Oven.-What is the best plan upon which to construct a core oven, to dry and bake cores, for all kinds of core work
where bituminous coal is used? I find cores very expensive, and would
俍 of doingthis kind of work. - W. M. J.
3,-Silver Solder.-How can I make an easy flowing sil-4.-Crystallina Glass Fronts.-How can I produce a 4.-Crystalling Glass Fronts.-How can I produce a
crystalline surface on glass for shop fronts, church windows, etc., that will crystaline surface on glass for shop fronts
withstand the action of frost?-G. H. W.
5.-Lettering Steel Plate.-I wish a method of transerring letters or designs to the surface of steel plate, that may be used in-
stead of the old method of coating with wax. My impression is thatthereis such a process, in which the work is facilitated by the use of an elastic tamp. -J. G. H.
6.-Gloe.-I would like to have a recipe for a rapidly hardening and tenaclous glue for fastening pine cones, etc., to wood, in
making fancy picture frames. If you or your readers know of any such, making fancy picture frames. If you or your re
please give it in your valuable journal.-J. F. K.
7.-Mixing Iron.-I am having considerable trouble in mixing Iron. The metal I use is old car wheels with chilled rims. I use
about twenty-five per cent of No. 1 Scotch pig to soften with, but it does and
not appear to mix. Per cents of the castings are soft, and others hard. Can not appear to mix. Parts of the castings are soft, and others hard.
some of your correspondents suggest the cause and remedy?-G. H. P.
8.-Journal of Mill Spinpue.-What substance shall I se for filling the cast Iron journals for the spindle of a grist mill to run in
None of the anti-friction metals will answer, because the poisonous particle None of the anti-friction metals will an
worn of pass into the meal. -H . A. s.

Inventions Patented in England by Americans. [Compiled from the Commissioners of Patents' Journal.] applications for letters patent.
184.-LLQuid Mrter. -José Francisco de Navarro, New York city. Janu-
ary 24 , 1871. ${ }^{2606}$. 187 F . Printina Presers. - Earle Henry Smith, New York city. Januars 209.-SRWing Machink.-Henry Graham Thompson, New York city. Jan-212.-STEAM Boiler.- Jacob Lorillard, New York city. January 26, 1871.
231.-BaLe Ties.-John Scott Leng, New York city. January 28, 1871.

 237.-Vrssels for Volatile Oils, Spirits, etc.-Meissner, Ackermann
Co., New York city. January 37, 1871. 240.- Padlocess--William H. Atkins, Ithaca, N.Y. January $30,1871$.
246. -Conbs For Worsted Machinery.-Charles Weiler, Philadelph 246. - Combs For Worsted Machinery. - Charles Weiler, Philadelphia,
a. Jannary mo, i871.... .... .

## NEW BOOKS AND PUBLICATIONS.

## Ginx's Baby: His Birth and other Misfortunes.

This book is a satire, cleverly written, to show up the modern baby question that so nearly concerns us all, and in respect to which there are diverse
oplnions and practices. The contents discuss "What Ginx did with opinions and practices. The contents discuss "What Ginx did with
him," "What Charity and the Churches did with him," "What the Parish him," "What Charity and the Churches did with him," "What the Parish
did with him," " What the Clubs and the Pollticians did with him," and did with him," "What the Clubs and the Politicians did with him," and
"What Ginx's Baby did with himself." It is a very humorous book, and is published by George Routledge \& Son, 416 Broome street, New York. The Conversion of St. Padl. By Geo. Jarvis Geer, D.D.
One vol., 12 mo., 80 pp . New York: S. R. Wells, 389 One vol., 12
Broadway.
The book is handsomely printed on toned paper, bound in fancy muslin The book is handsomely printed on toned paper, bound
beveled boards, and is sold at $\$ 1$. Plain Edition, 75 cents. Life of John J. Crittenden.
Messrs. J. B. Lippincott \& Co., of Phlladelphia, announce their purpose
to publish the life of this deceased statesman, edited by his gitted daughter, oo publish the life of this deceased statesman, edited by his gifted daughter, obtained. The proposed work will embracet wo large 8vo. volumes. Price,
85 each. The work will be one of great value to all who feel interested in $\$ 5$ each. The work will be one of great value to all who feel interested in The Lover's Library.
J. S. Redfleld, No. 140 Fulton st., N. T., proposes to publish a popular series of sentimental storles, under the above caption, the first volume having appeared. It contains the "Devil's Pool," by George Sand; "The Story of Leonard and Margaret," from Southey's "Doctor"; "The Maid of Ma-
lines," by Bulwer, and "Patty's Revenge." Price, in paper cover, 50 cts. The Aldine Press, for February, is a splendid number. It contains eight very fine tllustrations, three of which are full page. With this num bel
Is also a handsome oil chromo, "Ducks," which is sent as a premium, with the paper, for $\$ 2 \cdot 50$. As a specimen of typography, the "Press" is an honor to A merican art.
Theodore Tilton, having retired from the editorship of the Independent, proposes to start a new paper, to be called "The Golden Age," to be devoted
to the free discussion of all living questions in Church, State, Soclety, Literature, Art, and Moral Reform. Price, $\$ 8 \cdot 00$ a year. Mr. Tilton's address is box 2.848, New York city.

