## NEW BOOKS AND PUBLICATIONS.

 The Electrician. Electrical TrWe have received the prospectus for this well known publication, which is now reaching its ninth year of pub-
lication. It includes a review of the different pha es of electrical progress, particularly in the industrial fields, and care is taken not to allow it to assume too insular a complexion. The English house which publishes it makes special reference to its colonial, American and
foretign features. A biographical section with portraits is a specially interesting department. When the work appears, we shall hope to review it for our readers' appears,
benefit.
The Electric Telephone. By George Bartlett Prescott. Second Edition. D. Appleton \& Company. 1890. $8 \mathbf{v o}$ cloth. Pp. $\quad 795 . \quad 516$ illustrations.
Price, $\$ 6.00$. This is a comprehensive work describing all the principal forms of telephonic apparatus, as well as many
minor experiments of interest. Prominence is given origu and development, so far as they are obting it to the present time.
Out of the Ashes.-Among the many artisic publication bearing the above title and issued by the well known art stationery manufacturers,
D. mpsey \& Carroll, New York City. The book contains pecinens of engraved visiting and invitation cards, illuminated crests aud monograms, besides specimens

## SCIENTIFIC AMERICAN

## BUILDING EDITION

## JANUARY NUMBER.-(No. 63.

TABLE OF CONTENTS. Riverside colored phate of an elegant residence on Riverside Avenue, New York City. Cost $\$ 60,000$
complete. Floor pians, two perspective elevaions, etc. Mr. Frank Freeman, New York architect Plate in colors showing an attractive cottage at
Maplew:od, Chicago. Estimated cost $\$ 3.000$ Maplewsod, Chicago. Estimated
Perspective view and two floor plans.

## A cottage at Rutherford, N. J., erected

 $\$ 6.000$ complete. Perspective elevation, fioo plans, etc.An elegant. residence at Chestnut, Hill, Pa., recently erected for Mr. Alfred C. Rex. Coet $\$ 30,000$ com
plete. Floor plete. Floor plans, perspective elevation, etc. Cal. Estimated cost $\$ 10,000$. atage at Englewood, Chicago.
and tloor plane. Cost $\$ 1,2010$.
7. Residence on Powelton Avenue, Philadelphia, Pa. Cost $\$ 30,000$ complete. Architect Thos. P. Lonsdale, Philade
vation, etc.
8. A cottage at Jacksou Park, Chicago. Estimated cost $\$ 4,100$. Floor plans, perspective elevation,
etc. plans and perspective view. Cost $\$ 900$
10. Kesidence at Wayue, Pu., from plans prepared by W. I. Price, architect, Philadelphia, Cost $\$ \pi, 000$
complete. Floor plans, perspectiae vie, complete. Floor plans, perspective view, etc.
An attractive country church of moderate size ecently erected at Glen Ridge, N. J. Estimate Cottage at Lakeview, Chicago. Floor plans and perspective view. Cost $\$ 3,000$.
A stable combining both beauty and convemence,
erected for Mr. A. c. Rex, at Chestuut Hill. erected for Mr. A. C. Rex, at Chestuut Hill, Pa
Cost $\$ 1,800$. Plans and perspecive Cost $\$ 1,800$. Plans and perspecive.
A cottage at Austin, Chicago, Ill.
Two floor ways and photographic view. $\$ 4,200$ Sketches of park entrance lodges.
16. Engraving of the Woman's Temperance Temple,
Chicago, Ill., as it will appear when tinished. Estimated cost of the T ? ple $\$ 1,100, \boldsymbol{\omega})$
17. View of Whitworth Me.norial Hospital

Miscellaneous content: The marble industry.-
Lighting streets of London.--Mahogany ties and Lightung streets of London.--Mahogany ties and
marble bridges.-Staining floors.-The Peruvian temple of Pachacumac.- How to catch contracts. your property.-The Scientific Americina help to builders. -An improved article for plastering,
tiling, and cement work, illustrated.--The Sinthling, and cement work, 1llustrated.--The Sin-
clair double rocker, illustrated.-An improved veneer press, illustrated.- Onr last year's volume.
-The Albany Venetian blinds, illustrated.-A conveuience for hospitals, families, etc., illustrat-ed.--The education of customers.-The Buffalo
hot blast heating system, illustrated. - The 'Willer" sliding blinds, illustrated.-Mueller's water pressure regulator.-Arti-tic wall decora-
tions. The Sclentifc American Architects and Builders
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25 cents. Forty large quarto pagees. equal to about wol hundred ordinary book pages : forming, practi-
cally, large and splendid Magazine of architecTURE, richly udorned with elegant plates in colors and
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For best hoisting engine. J.S. Mundy, Newark, N. J Barrel, Keg, and Hogshead Machinery. See adv. p. 30 Best driers for grain, sand, clay, fertilizers, wet feed, Best Ice and Refrigerating Machines made by David Power presses and dies. Also contractors for special The Improved Hydraulic Jacks, Punches, and Tube Screw machines, milling machines, and drill pr Beach's Pount Lathe Tool. Billings \& Spencer Co., Hartferd, Ct. "How to Keep Boilers Clean." Send your address
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oatented article of merit. simple and easily made. F. G. Datented article of
Grove, Luray, Va.
Split Pulleye at low prices, and of eame strength and Works. Drinker St.. Philadelphla. Pa.
Guild \& Garricon, Brooklyn, N. Y., manufacture team pumps, vacuum pumps, vacuum apparatus, alr For low prices on Iron Pipe, Valves, Gates, Fittings, ron and Brass Castings, and Plumbers' Supplies, write
A. \& W. S. Carr Co., 135 and 140 Centre St.. New York. The best book for electricians and beginners in elec tricity is "Experimental Science," by Geo. M. Hopkins.
By mail, k4; Munn \& Co., publishers, 3il Broadway. N. Y. For Sule.-Farrel Foundry and Machine Company six ton iron crane. 20 feet radius, and in perfect order, together with iton and stone base. Nearly new. Apply to
Charles Warner Company, Wilmington, Del. Charles Warner Company, Wilmington, Del.
Wanted-A postion by an electrical engineer, either as superintendent of construction or as first-class sales-
man, thoroughls posted on the Edison and Thomson man, thoroughls posted on the Edison and Thomson-
Houston systems. Have had considerable experience. ddress Insulite, P. O. box 773. New York.
Newspaper Work and Advertising for 1891. Every-
hing a Manu facturer ought to do in this department attended to by the Manufacturers' Advertising Bureau
and Press Agencu. Benj. R. Western, proprietor. 11
Liberty Street, New York, in a ssstematic, busines8-like manner. Our mutual benettcombination rates, in which all clients participate, are lower than any individual ad
vertiser can possibly secure for himself. Estbd. 1879 .

hints to correspondents.
Names and a ddress must accompany all letters,
or no attention will be paid thereto. This 18 for our
onformation information and not for publication.
Reterences to former articese or answers should
give atateo paper and pate or number of question.
Inauiries not answered in reasonable time ehould give date of paper and page or number of question.
guiries not answered in reasonable time fhould
be repeated; correspondent will bear in mind that
some answers require not a little research, and,
 expenal rather than yeneral interest cannot
pithout remuneration.
expements referr

Minerals sent for examination should be distinctly
marked or labeled.
(2692) L. B. \& Co. ask: Can you give any information regardng the application of steam
direct to lumber for the purpose of drying same, prior to putting on blast forcing hot air through same? We have one of B. F. Sturtevant's devices, consisting of fan drawing hot air through a system of tubes having in them steam for the purpose of heating same, but under this process we have not been enahled to raise the temperature of our kiln over $130^{\circ} \mathrm{F}$. at highest, and usually
we are enabled only to get same from $100^{\circ}$ to $121^{\circ} \mathrm{F}$ The ilea occurred to us, could we first steam the lumber thoroughly, it would be advantageous. A. The blowing of hot air through the lum ber is only a superficial drying process. Steaming the lumber and then
injecting air for drying at only $130^{\circ}$ temperature will not help you. Put heating coils under the lumber, and steam both the lumber and the coils within a tight
room, so ns to get a temperature of $200^{\circ}$, and then shut oom, so ns to get a temperature of $200^{\circ}$, and then shut
off steam from the room, and keep up the heat in the coils. This drives the moisture from the interior of the umber. Then ventilation by the ho
eason the lumber without checking
(2693) G. P. A asks : Are celluloid collars unhealthy to wear? A They are not; the white
pigment used in making them is oxide of zinc, which no bad effect on
(2694) C. A. S. asks: Can you tell me where I can find detailed information respecting occurence and working of brine or sait wells, percentage in the extraction is costly? An excellentarticle on the above subject will be found in Scientific American December 13, 1890
(2695) R. H. writes: 1. There is an etching ink on the market for etching on glass. Will
you kindly send me a formula for such an etching ink? A. Diamond ink is made by mixing with hydrofluoric acid, enough bariums sulphate to give it consistency, so
that it will not spread, and show well on the glass that it will not spread, and show well on the glass,
Ammonium fluoride may also be added. After the Ammonium fuoride may also be added. After the
of a good pold or other paint, which may be appied to glass without spreading, and which will not dissolve
off with water. A. Use bronze powder and a proper off with water. A. Use bronze pow
vehicle. Copal varnish is very good.
(2696) R. S. W. writes • 1. Asking how to make a rubber stamp oy a paper mould or phlong his rubber stamps on the same principle as I make my stereos. He gets his phlong the same way as I do, but that is as far as I can trace it. His paste is made just the same as mine, common paste, a little pipe clay, and French chalk. A. Cover your stereotype rinatrix with thin tinfoil, press mixed and uncured rubber down
on it with a hot plate of iron. Keep it at about 28 $0^{\circ} \mathrm{F}$. until the rubber is cured, say 3 minutes to $1 / 2$ hour. 2. I should also like to know how to make the rubber stamp ink. A. It is made from glycerine and it works well.
(2697) G. C. N. asks : 1. What causes an explosion when filling a kerosene lamp? A. If bad
oll is used, or if the lamp has been overheated, the space oll is used, or if the lamp has been overheated, the apace
above the oil may become filled wth or contain some vapor of hydrocarbons. On pouring oil into the body light or explode if it comes in contact with a flame. 2 Is there any danger in filling a large Rochester lamp while burning? A. Yes. Never fll any lamp when
burning, as it is highly dangerous. 3. Please criticis my writing. A. It is very good, but is as yet hardly
(2698) C. C. M. asks : Can you tell me what lubricant is used by organ builders on places where two pleces of wood rub, such as the bellows handle or pedals? A. Use ground plumbago to lessen
the friction on wood surfaces. In some-places a little the friction on wood surfaces. In some -places
grease may be used, mised with the plumbago.
(2699) V. G. writes : I am sending you by this mail a sample of a natural product in this
country. There is a lagoon here producing some 2,500 cons per year of that suluff, and it was mainly used for the manufacture of lye for soap-making purposes; but soda. I think tha displaced stuff more active would be of advantage to make 1 take its former place in the market. Is there any
means of making caustic soda out of such stuff, if possible by a cold process, or at any rate by a cheap procarbonate of soda and chloride of sodium or common salt. The latter is in such large quantities that $1 t$ would make any treatmeut expensive. It might be concentrated by some process depending on the difference in solubility of salt and carbonate of soda. The carbo
could be rendered caustic by the addition of lime.
(2700) H. A. S. wants an iron developer that can be used for time exposures and that can be
easily modified so as to admit of development of instantaneous work. A. Make a saturated solution neutral oxalate of potash, and another of sulphate phuric acid, 1 drop of acid to 10 ounces op solution To prepare developer, take 6 ounces of the potash solution and add 1 ounce of iron solution. For time exposures take $1 / 3$ ounce of the iron solution to 6 ounce
the oxalate; always add the iron to the oxalate.
(2701) J. H. S. asks (1) if chloride gold and sodium can be made from c. p. chloride of gold; if so, cau it be done by an amateur with very
little knowledge of chemistry? A. Yes. 2. What effect does a solution of citrate of sodium have on an untoned print of ready sensitized paper? A. If the
print has been fixed, it will have no effect. If unfixed will have a tendency to turn print red. 3. Can you tell me of some means to clean a porcelain toning tray of precipitate of gold, something similar to that formed in
a tray used for the iron developer? A. Let a mixture of 1 part nitric and 3 parts of hydrochloric acid stan in it overnight. 4. Will you give me a formula for producing black tones, similar to a professional pho
tograph, with ready sensitized paper? A. Use a for me such that when yellow or the rays of a common gas light be passed throngh, they will be turned white or iu other words can be printed with? A. No. None
has been invented. 6. In your number of October 25 I noticed that if a certain chemical, allyl thio-carbamide, be added to the elkinogen developer, a reversal in de
velopment will be produced; in regard to this chemical is it poisonous or explosive, and can it be compounded result result, according to formula given? A. The substance
18 easily made and is safe to work with. We have not had any success as yet in our trials with it.
(2702) S. Y. O. asks : What is the form of the solar orbit? I mean the small orbit of the sun around the center of gravity of the solar system; and
what is the period of its revolution? What is the what is the period of its revolution? What is the
period and direction of the revolution of the ellipse wicit on these and What work on astronomy ises orbit is a volute or series of spirals expanding over a space nearly twice the dalameter of the sun A complete revolution in one orbit requires about 2,372 yeare, and of the series about 7,117 years. This is
mathematically demonstrated in a paper by Professo G. W. Cockley, read before the American Astronomica The complete revolution of the moon's nodes takes place in $18 \mathbf{6}$ years. The latest work is Young's " General Astronomy." $\$ 3$ mailed.
(2703) T. D. W. asks: Can you tell me some remedy to prevent prints from turning yel toned by the formula'sent with the paper, which gives beautiful tone, but generally about half of them turn a
dark yellow in the lighter parth, while being washed fo the last time. At first I thought that it was rust from being washed in a tin dish, but they turn the same if I
wash them in a wooden tray coated with nsphait varnish. A. Silver prints sometimes turn yellow after toning A. Siver prints sometimes turn yellow after tonine
and fixing by leaving them in the hypo longer than ne cessary to clear chem, or by too acid a fixing bath, which
can be remedied by adding a drop or two of ammonia, $^{\text {a }}$
or by too old a hypo bath. Keeping the paper long be
ween sensitizing and flxing also makes yellow printe If the least quanity of hypo gets into the washing prints. it also caiuses yellow stains. The asphalt tridy is bettet than metal: A little alum will do no harm
(2704) C. N. asks how to transfer engravings on glass for magic lantern slides. $\Lambda$. Coat the comes quite sticky. It should stand nearly two days Then wet the paper in soft water, and carefully lay it on the glass, rnbbing it with the finger gently to expel air bubbles, the engraving side in contact with the var. nish. Let the paper dry for a day, then with the wetted nger rub of the paper from the back. The whole nish. Coat the glass with another layer of varnish, which makes it more transparent, and when dry the
(2705) G. B. asks : 1. How far does a common sound reflector $2 \times 3$ inches reflect a whisper so as to be understood? A. A small reflector wil not do well for refecting sound. The distance cannot be
stated; it depends on the whisper. 2 . Is there any difference in plaster holding on a large ceiling or a small one ? A. There is no difference. 3. Is there a plumber's cyclopedia published? If so, what is its price? A.
We can stipply you with "Standard Practical Plumb ing." by Daviee, price \$3.
(2706) C. B. S., Jr., says: Would you kindly tell us, if you have the data, how much faster
he water in the center of an 8 inch pipe will travel than the water around the outside of same pipe at say 60 pounds pressure on the main; and what comparative difference there would be between the water
column traveling in the center of a 6 inch pipe and 8 inch pipe, 60 pounds pressure being on both mains; and how much more pressure would be delivered out of the end of the 8 inch pipe than the 6 inch pipe, both pi pes
being 1,000 feet long and both having 60 pounds pressure at the entrance? A. We have no data na to the red tardation of the outer stratum of water flowing through a closed channel or pipe. In open channels the variation increases from the perimeter toward the center, ranging
from 75 per cent in parts of the central velocity. The from 75 per cent in parts of the central velocity. The pressure does not materially affect the friction, which
is due to velocity. The pressure at the ends of the 6 is due to velocity. The pressure at the ends of the 6
and 8 inch pipe with equal head pressure will be alike only when there is no water flowing. With open ends the flow will be nearly as the square of their respective diameters. With restricted openings the pressure to the area of the pipes.
$(2707)$ E. P. F. writes : Will you oblige me by letting me know which is the best way to connect
the 8 light dynamo for use as arc, $i$ e., the mode of connecting field coils together and the field with armature etc. 9 I am well pleased with the book "Experimental let all of the current from the armature flow through the coils of the field magnet. Introduce a resistance of from;3 to 10 ohms into the circuit with the lamp.
(2708) F. H. B. asks if there is any sotion in which charcoal can be soa it fireproof or prevent it from burning away so rapidly
when used in melting and soldering gold upon it. There is such charcoal, and how it is treated I would like to know. A. A very durable carbon can be made from charcoal dust or ground coke agglomerated with sirup molasees, or coal tar, and baked in moulds. For genera 20. As a solution for common charcoal, phosphate of toda might be of some use.
(2709) F. J. R. asks: 1. Give the formula to make the putty or cement used to make the
joints of stoves tight. A. Mix iron powder to a paste with solution of silicate of soda. 2. Is there any ce ment stronger than common glue to fasten wood to-
gether? A. The best quality of glue or gelatine is about strong as anything for the purpose
(2710) G. S. A. writes: In reference to an article in your paper of November 20, page 326,
cocoanut butter, I should like to learn full particulars of its manufacture if possible. A. You will find it treated under Oleum Theobrome in the United States Dispensatory. It is made by grinding the seeds, mixing with ten per cent of water, and pressing between hot iron plates. It is sometimes made by decoction
and by exhaustion with bisulphide of carbon or other solvent.
(2711) E. A. H. asks : How much wire, in weight. of each of the two sizes, Nos. 18 and 24 , is required to make the motor described in Supplement,
No. 761 \& A. About $3 / 4$ pound of No. 24 on tield magNo. 7619 A. About $3 / 4$ pound of No. 24 on
net and $11 / 4$ pounds No. 18 on the armature.
(2712) J. W. asks: 1. What taste has the common chloride of antimony? A. A metallic acid affect the black sulphuret of antimony; what taste? A. Soluble in hot acid with evolution of sul phureted hydrogen. Taste highly acid. 3. Will nitrou acid dissolve suphuret of antimony? If so, what taste has the solution? A. Yes, giving the sulphate: taste
metallic. 4. Will sulphurous acid precipitate antimony from any of its solutions? In blocks or how is dissolved. Antimony is a violent polson, and its
(2713) U. K. asks for the process used in the manufacture of oil clothing, such as is used to with boiled linseed oil colored to suit. It must be done in very hot room or in a bright sunlight. A shoebrush is the best for applying it. A little patent drier may be added. It is said that the Chinese use a misture of onc oance each of beeswax and soft soap with the oil which with shellac varnish. In any case apply the oil as thin
is $\left.\begin{array}{l}\text { as possi } \\ \text { coats. } \\ (271\end{array}\right)$
( 2 .
(2714) F. C. asks : 1. Is aluminum a con electricity? A, A very good conductor. $1,300^{\circ}$ Fah. 3. Where can I get a casting? A. Buy
the metal and have a brass founder cast it. See ScIen-
TIFIc Ammerican, vol. 62. No. 26, page 402 , for full direc-
tions for working aluminum.
(2715) A. A. says : Please allow me to intrude on your valuable time for a decision on a little matter in dispute. The question is, is there any more nressure in the steam space of a boiler than there is at
the base of a boiler where the water is? For example if a locomotive boiler has 100 pounds stesm on it, is there 10 pounds pressure in the water leg of the boiler? It being argued that the pressure is lighter where the water is than in the steam space. A. There is more pressure in the bottom of the boiler leg than in the steam space by the value of the weight of water above.
If there is 4 feet of water, there will be If there is 4 feet of water, there will be about 13
(2716) P. V. W. W. writes : I wish to sidessod ium hyposulyhite and potassium cyanide mmonia to some extent.
(2717) R. R. says : Please inform me what is the velocity of upward flow of water through pendicularly 15 feet high, with a perfect vacuum ? With a constant flow under vacuum, the velocity will be 31 feet. per second, less the friction of the pipe which wili leesen the velocity about 3 feet, or a result ant of 28 feet per second.
(2718) H. P. asks : Will you please tell me through your columns how to arrive at the sieed a train is running by the number of clicks made by the wheels and rails? How many editions of Haswell are there. their subjects or names, and price? How many pounds of stone (limestone) to the cord? A. Count the
clicks per minute and multiply by 30 , the usual length of rails in feet, divide the product by 5280 for miles pe minute. The ordinary rule is to count the clicks in 20 seconds. This gives approximately miles per hour The error is less than 2 per cent. The 54th edition o Haswell's "Mechanic's and Engineer's Pocket Book, 1890, price $\$ 4$ mailed. A cubic footof limestone weigh feet in a cord.
(2719) J. H. H. \& J. W. R. say : Kindly advise if ice was ever known to sink in water and under what circumstances. Also if you know of any record
where ice in a lake or pond has been known to sink any time during the winter or apring, or otherwise dis and takes becomes crystallized in the form of vertical needles with their interstices eaturated with water, sup posed to be produced by the increasng intensity of the
sun's heat in the spring This weakens the ice to such sun's heat in the spring. This weakens the ice to such
an extent that by stamping uponit at the critical time it an extent that by stamping upon it at the critical time it
breaks up intofine needles. At such times, on any disbreaks upintofine needies. At such times, onany dis-
turbance of the surface by wind, or sometimes without apparent cause.the wholesurfared If examined at the moment of breaking up, the fine acicular crystals will be found floating on the surface, although at a short distance nothing can be seen but the water surface. It is a matter of common observatio that ice 8 or 10 inches thick becomes so weak from crystalline disintegration near the critical time for
breaking that it will not bear pressure, and will break through with a person walking upon it. We have no record of ice sinking from the surface in a body, but have noticed the surface sometimes flooded with several lnches of water from overficw. The Hudson River and Lake Champlain are noted for the exhibition of thit phenomenon. Butice never can sink in water unless
drawnunder by some current, or sunk by stones and th which it may have picked up.
(2720) F. V. M. asks for receipt for mak ing albumen paper. Albumen paper is a special $p$ boo graphic papercoated with a film of albumen. It is manu factured on a large scale and 18 sold by dealers in pho tographic materials, cheaper than it can be made in ne y's book on "Photography, with Emulsions," which we can supply.
(2721) O. M. asks how the lacquering or brass is done. My work proves anl streaken, no how warm should the brass be? A. The lacquer should be made thin and clear as wine, only 95 percentalcohol used. Settle for a day or two and decant the clear lacquer. Heat the ar'jcles to about $160^{\circ} \mathrm{Fah}$., or a lit tle hotter tban the hand can bear. Brush the lacque over the work ninkly with a flat camel's hair brush. A
gtove oven moderately warm is a good means for heating. After lacquering return work to the oven for a few minutes to dry and glaze. Zapon lacqner advertise out showing brush marke.
(2722) E. E.-The number of passenger cars used on the steam railways of this country is esti-
mated at thirty thousand, and their average value thre housand dollars each.
(2723) W. S. V.-Chemically prepared paper for autographic and automatic telegraphy is pre Nitrate of ammonia 2 pounds, ferricyanide of potaseium $1 / 2$ ounce, gum tragacanth 2 ounces, glscerine 2 ounce water $1 / 2$ gallon. Or, lodide of potaseium $1 / 4$ pound, 2quarte.
(2724) S. asks : What is the composition The liquid drier contains linseed oil, litharge, and often ome salt of manganese. For japanning tin or metal ther ingredients are added. Black fapan is made by diasolving 48 pounds Naples or certain other foreign aspbalts in 10 gallons of linseed oil; 8 pounds of gum animl are mixed with 2 gallons of hot oil and added lon 2 gan or amber are added, mised, with 2 re added, and it is thinned with turpentine. Brown apan is a compositlon of shellac dissolved in linsee japans for fine japanning are given.
(2725) W. H. W. asks : 1 . Is the induc tion of the current the same on the wire wound on the inside of the Gramme ring of the armature in the
dynamo explained in "Experimental Science," Fig. 85, or exp it oly half of the coil on the outside? A. The wire on the inner side of the Gramme ring acts only as a conducto Is practically of no use in generating the current. Does an armature wound with the wire only on the out de of Gramme ring answer the same purpose as one in her purp it burn purpose than that in case one of the coils should chinc) it could be replaced without unwinding all of the wire? A. It is unnecessary to unwind from a Gramm ring anything more than the damuged part. Rings with ectional core are common. These are provided wit coils made separately and applied. 3. Please recommend one or two books on aluminum, price not to ex ceed $\S 2$. A. We recommend "Alumnum," by Rich
(2726) M. A. asks for something for restorng writing. 1 have an army discharge of my hus band's, and he is dead. It is on some kind of skin and filled out, and makes some of it so dim that you cannot see it to read. Please mention a restorative as hest you can. A. Try washing over with a $\begin{gathered}\text { elation of tannic }\end{gathered}$ acld. We advise you to have it done by an expert The solution should be applied carefully with a brush here is danger or washong all away
(2727) E. C. L. M. asks how the round the smaller sizes sawed out of the center of the large nes? If so, how? Two gentlemen in this vicinity were once speaking of the size of pipe that could be
used as a siphon. One of them, a practical engineer aid that large pipe would not carry water as high a mall pipe of the same length, if it would work at all The other thought that one would work as well as the other. Which one was in the rights If large pipe will not work, will you please explain why? A. Wooden eaves trough may be made on a heavy wood-shaping
machine. There is no reason why a large pipe siphon ill not work efficiently for the foll height that an leakage and provision for keeping out air.

## Replies to Enquiries.

The following replies relate to enquiries recently pub lished in Scı
therein given
(2603) White Finish for Shoes.-I would uggest to inquirer 2603 that if he will use the following will get a good white finish on his shoes:
Best white bonnet glue.... ........... 1 lb .
Sulphate zinc c. p.........
Sulphate copper, grouud
Pipe clay bolted..
Light yellow ocher.
Mix and let it stand until all is diesolved, then bring
to boillng point and add 2 pounds oxalic acid and gum to boillng point and add 2 pounds oxalic acid and gum
tragacanth q. s. Iron or gum brueh, in the usial way and wax. If this is properly used, the red color will not work through.-C. A. H.

## TO INVENTORS.

Anexperience of forty years, and the preparation ot terts at home and abroad, enable us to understand the laws and practice on both continents, and to possess un-
equaled facilities for procuring patents everywhere. A qualed facilities for procuring patents everywhere. A foreipn countres may be had on a plication, and persons ontemplating the securing of patents, either at home or broad, are invited to write to this offlce for prices,
which are low. in accordance with the times and our ex-
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Way. New York.

INDEX OF INVENTIONS

# For which Letters Patent of the 

 United Staten were GrantedJanuary 6, 1891.

## AND EACH BEARING THAT DATE








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