RECENTLY PATENTED INVENTIONS. Pertaining to Apparel.
FORm-GAGE.-Edith R. Sextone, Chicago, Ill. In this patent the invention has for its purpose the provision of a gage suitable to
obtain the shape and measure of different sized obtain the shape and measure of different sized of bust forms and stands upon which to drape their clothing.
ATTACHMENT FOR WEARING-APPAREL. -A. Goldberg, New York, N. Y. By means of ments can be altered to adapt them for use by persons having different waist measurements; it obviates the use of a draw string; requires no alteration in the garment to permit its use in connection

## manufacture.

GARMENT-RACK.-B. HARSEOWITCH, New York, N. Y. This rack supports a plurality of garments. Two members are employed, one of
which is normally fixed and the other which is normally movable, and these members are is normally movable, and these members are
so connected together that the movable member may be pulled out longitudinally together with the garments supported thereby and may
then be rotated to better display the garments. Hat-GUARD.-C. H. Shaw, New York, N. Y. This invention is an improvement in hat guards, and the inventor has in view such a
device in which the guard string will be autodevice in which the guard string will be auto-
matically drawn within the hat when released and the effective length of the string altered to suit the convenience of the wearer.

## Electrical Devices.

ELECTRIC DETONATOR.-G. A. Allen, Western Springs, Ill. More particularly the
invention relates to detonators of the type operated by aid of electricity, the more par-
ticular purpose being to guard the explosive ticular purpose being to guard the explosive
materials and exclude the entrance of moisture, materials and exclude the entrance of moisture,
so as to preserve in good condition the priming and other explosive sul
in the detonator shell.

Of Interest to Farmers
incubator.-E. A. Maisch, Anderson, Cal. In this electrically heated incubator the in vention relates more particularly to the con-
struction of the heating coils and the eggstruction of the heating coils and the egg-
supporting trays. Means provide for an even supporting trays. Means provide for an even
temperature at all parts of both trays; only a small quantity of current is consumed and the contrivance requires only a simple method BEET DIGGER AND TOPPER.-W. C beet diggers and toppers, and the device is especially adapted for digging and topping sugar beets, which are generally planted in
elevated ridges, and at spaced distances apart Beets below a certain size are culled or re ected and the remainder must be topped a the crown.

## Of General Interest

EXERCISING apparatus.-W. P. Stull, McKeesport, Pa. In using the apparatus, i is clasped in the hand with the thumb on one
grip and the fingers on the other, and the grip and the fingers on the other, and the pendent, extended, and bent to the shoulder or with any other movement of the arms, ad
visable or desirable. At the same time the body may be bent into various positions. ADVERTISING DEVICE.-J. E. Dowsing,
New York, N. Y. In this instance the invenNew York, N. Y. In this instance the inven
tion has reference to advertising devices ad mitting of general use, and more particularly to a type of advertising device suitable for
campaign purposes with a view of attracting the attention of the public to a particula andidate
DOOR-HANGER-F. J. S. Miely, Gunnison,
Colo. This invention relates to Colo. This invention relates to door hangers
and especially to such as are employed for and especially to such as are employed for
hanging sliding doors such as car doors, barn hanging sididing lioors such as car doors, parn doors, and the like. The object is to provide
a track of improved form which will be re a track of improved form which will be re improved means for supporting the track.

## Hardware.

Strainer.-T. Richardson, New Orleans, La. This device is for application to faucets thereby removing wigglers, bugs, and othe thereby removing wigglers, bugs, and other is to provide in such a device a detachable
straining element, which is easily applied and straning element, which is easily applied and
dor cleansing and other purposes with out removing the device from the faucet.
NUT-LOCK.-T. HAND, Walla Walla, Wash. This form of nut lock is much stronger, more rapidly applied and removed and may be manu-
factured at much less cost on account of its simplicity, there are no key holes or cavities to become clogged, it automatically adjusts
itself to a constantly tightening position and may be removed by simply exerting a holding may be removed by simply exerting a holdin
strain on a lug by a crow-bar, pick, or othe
tool, if the wrench should not be available. MITER-BOX-W E SHUTTS, Elle
ter, N. Y. This inventor provides a box where in the saw is guided to operate at a variety
of angles from the perpendicular, while operat. ing at various angles on horizontal planes. The operative positions may be readily and
iating the depth or extent of cutting of th blade.

## Heating and Lighting.

BOILER-TUBE CLEANER.-J. D. THOMP on, Eureka, Cal. The object here is to pro directing a jet of steam through the boiler
tubes from their rear, it being possible to use the cleaner without dismantling the boiler or furnace in any manner and without drawing
recrow che rurnacte.

ELECTRICALLY - OPERATED WATER HEATER.-J. A. Hunnewell, Lowell, Mass The more particular purpose of the inventor minimum of parts, the latter being so arranged that water passes through a long tube contain one end of this tube and the hot water being drawn from the opposite end of the same.
VACUUM AIR-VALVE.-C. A. DUNHA Marshalltown, Iowa. This invention pertains to certain improvements in vacuum air valve intended for use in connection with vacuo-vapor heating systems, or for any class of heating
work in which it is desired to vent air from work in which it is desired to vent air from
the mains, returns, or other portion of the the mains, returns, or other portion of th
system in which low pressure steam is used

## Household Utilities.

Revelstoke-SHADE SUPPORT.-C. C. Brown, Revelstoke, British Columbia, Canada. The
object of this invention is to provide a new object of thes invention is to provide a new
and improved window shade support, arranged for convenient up and down adjustment on the window, to allow moving the shade roller to any desired height, and to permit
manipulation of the window shade.

FLUSH-TANK.-B. WALEER, JR., Austin, Texas. The improvement refers to flush tanks, valve of simple to produce a tank having a valve of simple construction which will oper
ate to close automatically after the water of the tank has run off. $\dot{A}$ further object is provide an improved construction for conprovide an improved construction for con-
trolling the main lever of the tank which operates the flush valve.
FOLDING CRIB OR BED.-E. Gundelach, New Rochelle, N. Y. The intention in this case is to provide a crib or bed, which is sim-
ple and durable in construction, exceedingly strong and cheap to manufacture, and arranged to permit of conveniently folding it into a
comparatively small bundle for transportation comparatively small
or storing purposes.

JAR-OPENER.-J. H. Smith, Rochester, N. Y. The object of the invention is to provide
an opener for jars containing fruit, vegetables an opener for jars containing fruit, vegetables
and other food stuffs, and arranged for convenient application to pry the closure open, with a view to break the vacuum in the jar thus permitting convenient removal of the closure.

## Machines and Mechanical Devices. <br> EINFORCEMENT FOR BOOK-LEAVES.

 F. H. Crump, Los Angeles, Cal. The main purpose here is to strengthen the binding edges of loose sheets to such an extent that thesheets may be moved upon the posts or other binding mechanism without mutilation. Another purpose is to provide a binding edge forcement has been applied, as the main body f the sheet
SPEEDOMETER.-E. Schneider, XV. Staglcasse 8, Vienna, Austria. The speedometer, according to this invention, is connected to an
ordinary clock work, which couples a spindle o an indicator device intermittently for a definite period of time, so that the index of the indicator is set in accordance with the speed of the spindle at the time.
COIN-SORTER.-T. F. Galligan, Providence, R. I. This apparatus is for use in automatically separating coins according to their sev-
eral denominations. It has coin delivery openings successively decreasing in size, from the size of the coins, a coin carrier in to the size of the coins, a coin carrier in each pas-
sage, means for sweeping the coins into the pockets of each carrier and means for revolving the carriers to finally carry those coins remaining in the pockets over the several de-
nomination outlets whereby the coins drop nomination outlets
SAUSAGE TWISTING AND LINKING MA-Chine.-W. J. Collins, New York, N. Y. An efficient machine which can be driven from any suitable source of power, and which forms ausage links of uniform length. The links may be also formed of different lengths with-
out danger of tearing or injuring the out danger of tearing or injuring the same, and the machine twists the casing
that it cannot subsequently untwist.
TRIGGER MECHANISM.-E. R. Williams, t. Joseph, Mo. The purpose of the inventor
is to provide a mechanism provided with a very sensitive auxiliary trigger on the usual or sensitive auxiliary trigger on the usual or
main trigger, to securely lock the main trigger and hammer in firing position, and to permit an easy and quick release of the hammer for firing purposes.

Prime Movers and Their Accessories.
COMBINED TIMER AND DISTRIBUTER. G. T. Brown, New York, N. Y. This invention
is for use in connection with multi-cylinde
internal combustion engines for controlling the passage of the spark at the igniter. The casno movement whatsoever, and upon the central shaft the inventor provides a helical contact member movable longitudinally of the shaft
and rotatable therewith. The pitch of the and rotatable therewith. The pitch of the
helix and position of the helical member on the shaft determine the time of closing of the lectric current.
STARTING-CRANK FOR INTERNAL-COMLork, N. Y. This invention pertains to im provements in cranks for internal combustion ngines, and more particularly to an improved means whereby the crank may be locked to the shaft by the mere act of grasping the handle of the crank, and whereby the releasing of
the handle will release the grip of the crank upon the shaft.
COMBINED TURBINE MUFFLER AND FLY-WHEEL.-J. A. Lawson, New York, N. Y Mr. Lawson not only utilizes the pressure of the gas, but he prevents the high temperature
of the gas from injuring the wheel rotated of the gas from injuring the wheel rotated
thereby. This wheel is so constructed as to hereby. This wheel is so constructed as to
operate as a fly wheel, and furthermore he utilizes the wheel in creating a partial vacuum at the exhaust valve or valves of the engine
during the cranking or starting of the engine.

## Pertaining to Vehicles.

HANDLE-BAR FOR BICYCLES.-J. R. Loand Fresno, Cal. The intention in this case
is to provide a bar for bicycles which serve as a receptacle, in which the hose employed in connection with a pump for inflating the tires always at hand ready for use, and by utilizin the bar, a receptacle is provided, which is not in the way
handle bar.
WEAR-STRIP FOR CART AND WAGON bodies.-J. T. Hamilton, Council Bluffs, Ia rying grain and similar material which may leak out at the rear of the vehicle body. The invention strengthens the parts at this point, renders them more durable, and operates posi-
tively as a preventive of the waste of grain by leakage.
furnished by of any Con Please state the name of the patentee, title o the invention, and date of this paper.

## Fsf <br> Notes <br>  and Queries.

Kindly write queries on separ ate sheets when writing
about other matters such as patents, subscriptions


(12129) F. A. McD. says: There has recently been brought out an electrolytic alter understand, of aluminium electrodes immerse in a solution of aluminium chloride. If you struction of this apparatus, or know of any such description having been published, would be pleased to have you advise where
may find the same. A. You will find the elec may ind the same. A. You will find the elec-
trolytic rectifier described with plans for its construction in Supplement Nos. 1478, 1644 1679, and in the Scientific American, Vol these papers for ten cents each.
(12130) C. C. says: I have quite a lot of dry batteries. They have gone dead
Is there any way they could be charged worked over to put some life into them? A. Nothing can be done for dead dry cells to reare punched in them and they are put into jar as wet cells, getting some current out of them Sometimes the top is cut out and fresh solution of sal ammoniac is put in. The strength pay for the labor and cost.
(12131) J. R. says: Will you kindly tell me how much per house-power is the sell ing price of electricity when it is generated and sold to consumers. I ask this question
for the purpose of framing a lease for a water power which we are trying to have improved cents per kilowatt hour, either for power or lighting purposes. The kilowatt is the more usual unit of measurement because it may be mlying the voltage of the current by the
amperage, e. 10 amperes of 250 -volt current amperage, e. g, 10 amperes of 250 -volt current
gives 2,500 watts or $21 / 2$ kilowatts; 746 watts or $3 / 4$ of a kilowatt nearly are equivalent to one horse-power, or one kilowatt $=11 / 3$ horse-
power. The price varies in different parts power. The price varies in different parts
of the country, being higher at remote coalburning plants where fuel is expensive, and
lower at hydro-electric generating stations where power costs nothing. The highest price we know is 22 cents per kilowatt hour, and the lowest 5 cents, the New York price above price to estimate upon.
(12132) C. R. says: Allowing that a man weighing 300 pounds and 3 ounces weighed 300 pounds by spring balance- 3 ounces being -what would he weigh at the North Pole, with 13 miles less of earth under him?
say 295 pounds, as there is less matter to tract. What would he weigh at the top of a mountain 5 miles high, equator? Would he weigh less than 300 in or over the deepest ( 5 miles) ocean, equator? That is, does the Will the Scientific American get a sea captain to try a common ball with spring balance at sea level, New York, and then over the deepest ocean abyss? A. The weight of a person at different places on the earth is calculated by the application of Newton's law of gravity. The weight is directly proportional to
the attracting mass, and inversely proportional the attracting mass, and inversely proportional to the squares of the distances between the that a body will weigh about $1 / 190$ part more at the poles than at the equator. (See Young's "General Astronomy," Chapter V.-The Earth as a Globe. We can send the book for $\$ 3$,
postpaid.) equator is $1 / 289$; hence, a man or other body really weighing 300 pounds would seem to weight a trife less than 299 pounds at the equator, because of centrifugal force. The loss given by you as 3 ounces is too small. At the
poles a man whose real weight is 300 pounds The earth's mean would weigh 301.5 pounds. 7,917.6 miles, as given by Young in his latest book. The oblateness of the earth is usually taken as 26 miles. From these figures you will
see that the equatorial radius is $3,965.3$ miles and the polar radius is 3 ,952 3,965 miles. You may disregard the fraction and use only the whole numbers. At the pole there is a little
less matter to attract a body, and for this less matter tha atrach body, and for this reason it would weigh a little less, but at the attracting body. It is $3952 / 3965$ as far rom the center, and hence the attraction increased to the same degree. The weight on the top of a mountain 5 miles high at the equator would be ${ }^{-}(3965 / 3970)^{2}$ times the
weight at the sea level. We do not know weight at the sea level. We do not know
what change of weight there would be over what change of weight there would be over
the deepest ocean. Pendulum experiments to determine this are not easy on a ship, nor is accurate weighing very easy on shipboardweight. Balances for weighing heavy articles are not sensitive enough to determine the are not sensitive enough to determine the
weight to a small fraction of a unit. We may say that the water attracts less than the rocks of the earth, since it is less dense than the
rocks. We must leave you with these exrocks. We must leave you with these ex-
planations to figure out the results, since "we do not solve problems for correspondents, as
you will see by referring to our Hints to you will see by
Correspondents.
(12133) H. L. T. says: Some years ago I heard of an instrument used by archi-
tects to determine the extent of the sun's hadow for any given condition, at any particular season of the year. Could you inorm me who manufactures or sells this inrument? 1 have made inquiries from a numuccess. A. We do not know any instrument This can be drawn by a protractor when the altitude of the sun above the horizon has been determined. To find the altitude of the sun for any day at noon, when the shadows are hortest since the sun is highest, you should ave the latitude of the place and the declinaplace from 90 deg. To the remainder add the place from 90 deg. To the remainder add the
declination from March 21st to September 21st. rom the remainder subtract the declination from September 21st to March 21st. This ives the angle of altitude of the sun at noon above the southern horizon. With this angle,
the shadow cast by any object can easily be the shad
drawn.
(12134) F. Electric Company says: Can you favor us with receipt of formula for the silvering of lens mirrors, such as are used You will price ten cents, full and accurate directions for silvering glass for mirrors. The method is the one now in general use by precipitating
silver upon the glass from a solution. With leanliness and gass from a solution. With ficult to obtain
(12135) J. D. asks: Are you aware any plan being discovered how the pyramids Egypt were built? A. We believe that
authorities upon Egyptian antiquities are agreed as to the probable method of handling arger statues and obelisks which the much hundreds of miles and set up in place. Man oes alone can have done the work, and it known mot seem necessary to suppose any un-
more used for doing the work With men enough, all can be accounted for. Frescoes exhibit such work going on. Some
have thought that earth was filled in to form an inclined plane as the pyramid was raised to the higher portions, and the stones were then slid up this 'plane, which was removed after the building was completed. In modern times such stones have been moved long distances by man power: The base of the statue
of Peter the Great in St. Petersburg was
dragged from Firland to its preseńt location by men. Its weight is estimated at 2,000 tons.
Iron rails were laid upon which cannon balls Iron rails were laid upon which cannon balls
rolled, and thus the huge block was drawn by men.

## NEW BOOKS, ETC

Kriechtiere und Lurche Deutschlands By Dr. Kurt Floericke. Kosmos Gesellschaft der Naturfreunde. Ge handlung in Stuttgart. Price, 50 cents.
In this book Dr. Floericke has presented popular account of the principal reptiles and amphibians of Middle Europe. To those who are familiar with the German language and desire to obtain a general knowledge of an
interesting class of animals. without delving interesting class of animalso without delving into tech
mended.
The Fixed Law of Patents. By William Macomber. Boston. Little, Brown $\&$ Co., $1909 . \quad$ Large 8 vo.; pp. 1,060
Price, $\$ 7.50$ net. Price, $\$ 7.50$ net
In this work Mr. Macomber has presented in digested form the patent statutes, the decisions
of the Supreme Court of the United States, and the decisions of the nine Circuit Courts of $\mathbf{A p}$ peals, the three constituting what Mr. Macomber calls "The Fixed Law of Patents." As a piece of compilation and arrangement the book
is indeed admirable; as a reference work for is indeed admirable; as a reference work for the patent lawyer it will be extremely help-
ful. The principles of patent law, although fairly few in number and simple in essence have in later years become more or less be ogged in the effort of non-technical judges
to administer the patent law fairly. In view of that fact, any attempt to bring something ike order out of a chaos of decisions is cer tainly commendable. Because the book gathers up the appellate law, in the language pecialist. Unless he has digested the law for himself, the specialist will hardly have such a compilation. Considered as a whole, the of the courts' language in important cases, therefore absolutely authoritative.
Inns and Taverns of Old London. By
Henry C. Shelley. ${ }^{\text {Boston: L. }}$ L. C .
Page \& Co., $1909 . \quad 364$ pp. Price, $\$ 3$. The subject of inns and taverns in London literature concerning them is quite voluminous The present volume sets forth the historical and literary associations of those haunts, to gether with an account of the most notable the British metropolis. The English have al ways had a reputation of being essentially a home-loving people; still in the seventeenth and elghteenth centures they seem to have ex tutes for that home which they ought to have loved above all else. When the Londoner had procured his taverns and inns, he set to work volving a new species of public resort in the coffee house. That type of establishment appears to have been responsible for the development of the club as the substitute for the
home, and then came the age of the pleasure home, and then came the age of the pleasure garden. Both of the latter survive, the one in
the form of a more rigid exclusiveness than the form of a more rigid exclusiveness than
the eighteenth century Londoner would have dreamed possible; the other is so changed that frequenters of the latter would scarcely ecognize the relationship. The engravi taken from old prints, and are of great in
terest. The book is beautifully printed and most attractively bound.
Imagination in Business. By Lorin F. Deland. New York: Harper Brothers
1909. 18mo.; 108 pp . Price, 50 cents

This little book contains a number of shrewd essays which deal with a curious phase of business. It shows the remarkable part which
Light and Heavy Timber Framing Made
Easy. By Fred T. Hodgson. Chi-
cago: Fred J. Drake \&
The present work is a copious treatise on the modern practical methods of executing all
kinds of timber framing, from the simple cantling shed or lean-to to the heavy and com plicated timber bridges, centers, needling, and frames and taper structures, and is illustrated by 450 engravings and diagrams.
The Romance of Modern Manufacture. By Charles R. Gibson.
J. B. Lippincott \& Co.,
1910 .
12mo. 320 pp. Price, $\$ 1.50$.
In the present volume the author has en-
deavored to trace the evolution of the dif ferent industries, and to describe in every day language the methods of modern manu facture in all of the principal industries. It deals with textile machinery, laundry machinery, needle machinery, thread machinery, shoe machinery, manufacture of pottery by machinery, paper making, manufacture of
books, artificial light, manufacture of confectionery, the mechanical baker, clocks and watches, manufacture of iron, making steel rails, the railroad and the locomotive,
ing a ship, and other chapters. The illustrations and diagrams are particularly clear,
and we are glad to note a number of the
best ones have appeared first in the Scientifi
American, and that they are reprinted prop merican,
rly credited
Machine Drawing and Design for Begin-
ners. By Henry J. Spooner, C.F Ners. By Henry J. Spooner, C.E. New York and London: ${ }_{\text {Green }}^{\text {Longmans, }}$ Co., 1908.8 vo ; 266 pp .; 743 illustrations. Price, \$1.25.
The author is director and professor of mechanical and civil engineering in the Poly
technic School of Engineering in London, technic School of Engineering in London, and
is the author of valuable works on drawing and machine design. The work is an excellent one, and the drawings which are reproduced are thoroughly common sense. Of course English practice is slightly different from American, but the differences are not so
great as to militate against the value of this great as to militate against the value of this
book. The questions suitable for examination and home work are valuable, but the Board of Education examination papers are worthles for American students.
Experimental Study of Bagasse and
Bagasse Furnaces. By E. W. Kerr, Bagasse Furnaces. By E. W. Kerr
M.E., assisted by E. M. Percy, B.S Baton Rouge, 1909. 8vo.; 106 pp.
During the last few years the writer, wh as charge of the instruction of students in
the engineering branches of the Audubon Sugar School, has visited a large number of sugar factories in Lovisiana for the purpose of gathering data and information for classroom use. In these visits he has been par
ticularly struck with the lack of uniformity ticularly struck with the lack of uniformity
in the methods employed for utilizing bagasse in the methods employed for utilizing bagasse
as a fuel, both as to the form and proporions as well as to the manipulation of th urnaces. With a view to standardizing a decided to conduct a series of investigations the object of which should be to gain a thorough insight, by general observation and by tests, into the methods used in Louisiana for
ullizing the heat from bagasse. The result of the labors of the author is included in th present pamphlet, which gives his views on the
subject most exhaustively and refiects great sobject most exhaustiv.
credit upon the author.
Laboratory Notes on iron and Steet Analyses. By Walter Macfarlane London and New York: Longmans, Green \& Co., 1909.12 mo .462 pp . hese
for the guidance of the staff in an iron and steel works laboratory, which was for some where the results of over 40,000 estimations were annually placed on record. The method equired to be reliable and rapid, so as to con operations. It was necessary that all the analysts should work on identical lines, and the accuracy of the methods were tested in daily practice and conirmed by other analysts. These notes have been explained and pub lished, and are for the benefit of all students.
The general aim of the book has been to set out a full course of assaying or analysis in full detail. The work is an excellent one, and is certain of a considerable sale.
Modern Practice in Mining. Volume II.
The Sinking of Shafts. By R. A. S
Longmans, Green \& Co., 1909. 8 vo .
275 pp. Price, $\$ 2.25$ net.
The sinking of shafts for the purpose of
pening out and developing mineral wealth constitutes one of the most important branches of mining; and although a vast amount of information respecting such operations is disseminated throughout the proceedings of the
various mining institutions, and excellent chapvarious mining institutions, and excellent chap-
ters are devoted to the subject in many textbooks on mining, so far as the present writer knows, shaft sinking has not hitherto been treated from the British standpoint of the practice, it cannot. help but be of interest to the mining engineers in this country. The il-
lustrations are numerous and are well executed on are numer

Areika. By D. Randall Maciver and C. Leonard Woolley. With a chapter on
Meroitic Inscriptions by F. Li. Grif-
fith. Oxford: The University Press, 1909. 4to.; $56 \mathrm{pp} . ; 42$ plates.

This volume is the first of a series which Egypt planned and financed by Mr. Eckley B. Coxe, Jr of Philadelphis and this is the first volume of the series to be known as the Eckley B. Coxe, Jr., Expedition to Nubia. The expedition is to be conducted for five years on
behalf of the University of Pennsylvania, and behalf of the University of Pennsylvania, and
the antiquities that may be obtained will be presented to the University Museum. The dis trict selected for the researches is a part of
the country which lies between the First and Second Cataracts, and this first volume records plates are beautifully executed, and the monograph is an important contribution to the archa
ology of a section of the world concernin which very little is known.
The Autobiogiraphy of Sir Henry Morton
Stanley, K.C.B. By his Wife Dorothy York: Houghton, Mifflin \& Co., 1909. 8vo.; 550 pp. Price, $\$ 5$ net
Stanley was a remarkable man, and this
stands as one of the books of permanent im and important autobiographies that have seen the light in the last decade none perhaps has wider appeal to all classes of readers than The grim workhouse thenry Morton Stanley The grim workhouse, the squalid life in Liver
pool, the terrible experiences at sea, his adop tion by a New Orleans merchant, his life as planter, the enlistment in the Confederate in prison and escape, his finding of Livingstone the exploration of the Dark Continent, the founding of the Congo State, and his closing
years are described with a vigor of style which years are described with a vigor of style which
has rarely been surpassed. The book is beautifully printed and illustrated, and is certain everyone.
Mechanical Drawing for Trade Schools By Charles C. Leeds. New York: D
long 4to.; 58 plates and text long ${ }^{\text {Price, } \$ 2 \text {. }}$
This work on mechanical drawing has been rounding with a purpose in view of thoroughly grounding draftsmen and others of the vari-
ous machinery trades in the principles of mechanical drawing. It is also intended to familiarize them with modern drafting-room practice. The author does not believe in using copyists, and in this he is undoubtedly correct. The author, who is connected with the Carobtained by this system are excellent. The plates are on an enlarged scale, and the drawngs from which they are made are well exe.
uted. There is a bill of material with nearly every plate.
Irrigation Engineering. By Herbert M. \& Sons, 1909. 8vo.; 625 pp. Price, \$4 net.
The Reclamation Service of the United States now has 21 projects which have reached such a state of completion that water is being
furnished settlers for irrigation of their lands. At this date 675,514 acres are under lands ion from Reclamation projects and $\$ 42,932$, 787 have been expended upon the construction of works completed or in progress. The revenues collected to date from projects in
operation and available under the law for re expenditure on future construction amount $t$ $\$ 1,070,596$. The present or sixth edition ha been almost entirely rewritten, bringing up
to date the tremendous progress made in con truction by the Reclamation Service. Since
struas he last edition important changes have been used in structures on irrigation works as result of the very general adoption of reinorced concrete for such works
hitectural Perspective. By I. P
Hicks. New York: Industrial Pub ication Company, 1909. Square 12mo.; 38 pp. Price, 50 cents.
Building Plans and How to Draw Them By I. P. Hicks. New York: Indus
trial Publication Company, 1909 Square 8 vo .; 73 pp . Price, 50 cents.

## Leǵal Notices

## Pative

In ENTORS ar Mnnn \& Co., 361 Broadway, New York, or
625 F Street, Washington, D. C., in regard to securing valid patent protection for their in regisered. Design Patents and Foreis Patents secured.
A Free Opini
binty of an invention will be reaily patentainventor furnishing us with a model or $\begin{aligned} & \text { eken to any }\end{aligned}$ brief description of the device in question. All communications are strictly confdential Our
Hand-Book on Patents will be sent free on request.
Ours is

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MUNN \& CO., 361 Broadway, New York Branch Office. 625 F St., Washington, D. C.

INDEX OF INVENTIONS
For which Letters Patent of the United States were Issued for the Week Ending

## November 2, 1909,

ND EACHBEARINGTHAT DATE
$\qquad$

Acid, new mercury salt of para-aminophenyl

938,939
938,501


