Fremont Elkhorn & Mo. Valley

RAILROAD Trains leave 9:55 a. m. and 19:05 p.m. THE ELEHORN VALLEY LINE.

To free homes in Northwestern Nebraska an Southwestern Dakota. To the Black Hills and the Hot Springs. To Central Wyoming coal and on fields an

cattle ranges. To Chicago and the East, To St. Paul, the North and Northwest.

For further information inquire of L. M. TYLER, Agent. 115 South 10th street,

J. R. BUCHANAN, W. F. Frren. General M'ger, Gen'l Pass. Ag't Missouri Valley, Iowa.



Owns and operates 5.500 miles of thoroughly quipped road in Illinois, Wisconsin, Iowa, Missouri, Minnesota and Dakota.

It is the Best Direct Route between all the Principal Points in the Northwest, Southwest and Far West.

For maps, time tables, rates of passage and freight, etc., apply to nearest station agent of CHIOAGO, MILWAUKER & ST. PAUL RAIL WAY, or to any Railroad Agent anywhere is the world.

the world.

B. MILLER,
General M'g'r.
J. F. TUCKER,
Asst. Gen'l Pass, & T'kt Agt.
GEO, H. HEAFFORD,
Asst. G. P. & T. Agt.
Milwaukee, Wisconsin.

CAPITAL NATIONAL BANK
CAPITAL STOCK \$200,000,
C. W Mosher, President. W. J. Waish, V. Pre
R. C. Outcalt, Cashier.

OBELEY & STEPHENSON REAL ESTATE and LOAN BROKERS, Farm Mortgage Loans a specialty, Room 8, Richards block.

Rigg's Injection.



MANUFACTURED ONLY BY

KENNARD & RIGGS.

Chemists and pharmacists, Lincoln, Neb. PRICE \$1. Mail orders promptly attended to.

Western Resources.

A Journal Devoted to the Industries and Resources of the West.

This Journal is printed on toned book paper, the type used is clear and new, the title page is illustrated each month with something suitable, and in general appearance it is as metropolitan and elegantly gotten up as Hampen's Werkelly, and it is exactly the same size as that paper.

The object and aim of Western Recouraces is to give the best stock men, and farmers and general business men a thoroughly representative medium for obtaining and exchanging valuable information on those topics of viral importance to their industries.

Live Stck Dairy, Agriculture Horticulture, Turf, Poultry, and Foresty,

Are departments under careful editorship, and able articles from our own correspondents on Cities, Counties, States, Crops, Railroad Building Commerce, etc., form a special department.

Hos. Rosent W. Funnas, the editor, is ably assisted by practical and scientific writers.

To introduce this paper in every locality in the West we will send it for the remainder of 1887, beginning with the May number, for ONE DOLLAR.

One Extra Copy with Each 5 Subscribers. GET UP CLUBS.

Agents send for terms and exclusive territory. RESOURCES PUBLISHING CO. LINCOLN, NEB

TAKETHE Missouri Pacific Railway

The Shortest, Quickest and Best Route to

Atchison, Leavenworth, Kansas City, St. Louis, Cincinnati, Washington, Baltimore, New York and Boston.

RECLINING CHAIRS FREE ON ALL TRAINS.

For further information, Folders, etc., call or or address

H. G. HANNA. City Ticket Agent, Cor. O and 12th sts. P. D. BABCOCK, Depot Ticket Agent. R. P. R. MILLAR, en'l Agent.

SCIENCE AND PROGRESS.

A PURE AIR INDICATOR THAT MEASURES THE CARBONIC ACID.

A Mortar That Will Stand in Frosty Weather-Scientific Experiments Which Furnish Instructive and Pleasing Recreation at a Small Cost.

The simple scientific experiments illustrated in the cuts here given are reproduced from La Nature, which journal explains them as follows:

Place the hands over the ears, and pass a piece of string around the head, as shown in the engraving. Then let another person press the string between his fingers, and gradually draw them over it. The vibrations of the string will be transmitted



PIG. 1-SCIENTIFIC EXPERIMENT. through the hands to the ears, and produce a loud noise resembling thunder. By drawing the nails over the string the sharp claps For information in reference to Lands and Towns owned by the Chicago, Milwau-kee & St. Paul Ratiway Company, write to H. G. HAUGAN, Land Commissioner, Milwaukee and roaring can be reproduced. The inthunder are imitated, and by varying and roaring can be reproduced. The intensity of the sound produced by this simple

means is astonish ing and shows how weak are the vibrations that actually affect the ear, ever in the case of the loudest noises. That sound is due to vibrations, and that a sounding body is a vibrating body can be proved by a very simple experi-ment. Take a gob-

FIG. 2-SCIENTIFIC Ex- let of thin glass and PERIMENT. attach to the handle a boot button suspended by a string so that the button will rest against the rim. If the goblet is then struck so as to produce a musical sound the button will be thrown away from its surface, showing that the glass is actually vibrating.

A Substitute for Hydraulic Cement.

Mr. Miles, a well known engineer, makes the statement that ordinary brick dust, made from hard burned, finely pulverized bricks, and mixed with common lime and sand, is universally and successfully em-ployed as a substitute for hydraulic cement. Mr. Miles says that during an engineering experience of some six years in Cuba his op-portunities were ample for testing its merits, and he found it in all respects superior to the best Rosendale hydraulic cement for culverts, drains, tanks or cisterns, or even for roofs. In an experiment to test the strength of this product, it was found that a block of it, half a minute in thickness, without sand, and after immersion in water four months, bore without crushing, crumbling or splitting a pressure of fifteen pounds per square inch. It is thought that, by the addition of pulverizing mills to brickyards, to utilize the waste and broken bricks, a profitable manufacture might be carried on.

Gold in Jewelry Changes Col-It is well known that the human body con tains humors and acids, similar in action to and having a like tendency toward baser metals, as nitric and sulphuric acids have, namely, to tarnish or dissolve them, varying in quality in different persons. Thousands wear continually, without any ill effects, the cheaper class of jewelry, with brass ear wires, while if others were the same article for a few days they would be troubled with sore ears, or, in other words, the acids con-tained in the system would so act on the brass as to produce ill results. Instances have occurred in which articles of jewelry of any grade below eighteen carats have been tarnished in a few days, merely from the above named cause. True, these instances are not very frequent; nevertheless, it is as well to know them. Every case is not the fault of the goods not wearing well, as it is generally called, but the result of the particular constitution of the wearer.

Pure Air Indicator.

It is estimated that the air in a room becomes distinctly bad for health when its carbonic acid exceeds 1 part in 1,000. An apparatus has been recently patented by Professor Wolpert, of Nuremberg, which affords a measure of the carbonic acid present. Scientific American gives the following information concerning it: From a vessel containing a red liquid (soda solution with phenolphthalein) there comes every 100 seconds, through a siphon arrangement, a red drop on a prepared white thread about a foot and a half ong, and trickles down this. Behind the thread is a scale beginning with "pure air" (up to 0.7 per 1,000) at the bottom, and ending above with "extremely bad" (4 to 7 per 1,000 and more.) In pure air the drop continues red down to the bottom, but it loses its color by the action of carbonic acid, and the sooner the more there is of that gas present.

Brick Layers in Frosty Weather. A writer in The London Building News thinks every bricklayer ought to know that mortar made in the following manner will stand, if used, in almost all sorts of weather: One bushel of unslaked lime, three bushels of sharp sand; mix one pound of alum with one pint of linseed oil, and thoroughly mix this with the mortar when making it, and use hot. The alum will counteract the action of the frost on the mortar.

To Keep Brass Bright.

To keep highly polished brass, absolutely bright and free from tarnishing, it is thinly coated with a varnish of bleached shellac and alcohol. So long as this varnish remains intact the brass will continue to be bright. Much of the decorative brass now used is finished in this manner, thereby saving the housewife labor in way of cleaning and pol-

A Good Marking Ink.

Coal tar, thinned with naphtha to a proper consistency, forms, says Popular Science News, a very good marking ink, which will not wash out. Another kind is prepared by mixing two parts of powdered acetate copper, four parts of sal-ammoniac, one part of lampblack, and twenty parts of water.

Mix well together, and shake before using.

The Russian apron is now the correct thing for the young lady who presides over the samovar and brews the 5 o'clock tea

THE CURIOSITY SHOP.

Who First Used Forks ?- The Greeks in Bible Days.

Forks are distinctly mentioned in I Samuel, xiii, 21, in connection with the file which was used to sharpen the prongs. In the Penta-teuch mention is made of "flesh hooks," evidently used for taking the meat out of the pots or off the pans. Ateneus mentions the "fork," but it does not appear whether it meant a bident or a trident, and it is certain that the ancient Greeks were ignorant of the use of the fork while eating. Two branched instruments were found at Hercalaneum, but they were not known to be used in any period of Roman history. The Duke of Burgundy used forks at table and is said to have had two. In his time the loaves were made round and were placed by the side of the carver, who had a pointed carving knife and a skewer of silver or gold which he stuck into the joint of meat, and having cut off a piece placed it on a slice of bread, which was served to the guest on the point of the carving knife. This custom still obtains in many parts of Europe. Before the revolution in France, when a gentleman was invited to dinner it was customary for him to send his servant with his knife, fork and spoon, or, if he had no servant, he carried them in his breeches pocket as a carpenter carries his rule. The use of forks was not introduced into England until the time of James I, having been brought from Italy. Their use was ridiculed by many as a superservicable piece of finery. Ben Johnson joined in the laugh against them in his play of "The Devil's Ass." It is not difficult, even now, to remember when the knife only, notwithstanding the presence of the fork, was used to convey food to the mouth, showing how difficult it was to get rid of old customs.

Luminous Clock Dials.

There are clock dials so coated with a phosborescent preparation as to absorb sunlight during the day, and thus be in a measure luminous at night, but in the opinion of a large dealer in clocks and watches these dials are comparative failures, inasmuch as they to not retain their luminous power for any great length of time, while the effect of the phosphorus upon the movement is to tarnish, corrode and seriously impair its usefulness. Phosphorus, as is well known, possesses no light in itself, but absorbs when placed in the sunlight the luminosity which it afterward displays in the dark, therefore such dials must be placed during the day where they can get the sunlight. There is no preparation on the market, so far as the writer has been able to ascertain, which can be applied to a dial, unless it is the simple phosphorus. The latter is readily obtainable; but whether its use upon the face of the clock would secure even the temporary result desired remains to be proven. If it is to be experimented with, care should be taken to avoid touching the hands or the figures of the dial, the phosphorus being applied to the plain white surface only, thus allowing, providing the illumination is achieved, the hands and figures to be sharply defined against the light.

A Curiosity in Verse. "Come, kiss me, sweet Phyllis," said Corydon

gay, As he walked with the maid through the clover one day; "And tell me you love me; there's nobody near; No one to look at us, no one to hear.

"Pray tell me what's growing, sir, just over there, In the field next the clover," said Phyllis, the fair. "Why corn and potatoes," said Corydon gay;
"Yes, corn and potatoes, now kiss me, 1 pray.

And tell me you love me; there's nobody near; No one to look at us, no one to hear." "You're wrong," said sweet Phyllis, with confi-

"You're wrong, for we both can be heard, sir, and I can't say 'I love you,' and kiss you. Not here, Where corn and potatoes are growing so near; To know I am sure you're sufficiently wise

That corn has got ears and potatoes have eyes Boston Courier. Etching.

The art of etching was introduced about the middle of the Fifteenth century by Thomas Finiguerra, a Florentine. Its value met with prompt recognition in France, Italy and Germany, but it was reserved for later times to carry it to a state of perfection. It is an open secret that etching is the corresive action of certain acids on metal and glass, the plates acted upon having been covered with wax, bearing the design that has been wrought with the etcher's needle, Etching was first regarded as an industrial art, but it soon grew to a higher value, re-producing in graceful freedom and precision of touch the very feeling of the artist.

Cleopatra's Needles.

There were two so called Cleopatra's needles. They stood originally at Heliopolis in front of the great Temple of the Sun. After remaining there 1,600 years they were floated down the Nile by the Romans and reerected in 23 B. C. One of them was presented by Mahomet Ali to the British government, and it now stands on the banks of the Thames in London. The other was pre-sented by the khedive to the city of New York, and in 1880 it was brought over and set up at Central park in that city. It is 70 feet high, 7 feet square at the base and weighs 196 tons. The size and weight of the London needle are about the same.

Author of Lorna Doone.

Richard Doddridge Blackmore, the novelst, is the son of the Rev. John Blackmore, and great-great-grandson of Dr. Doddridge. He was born at Longworth, Berks, in 1825, and graduated at Oxford in 1847. He was called to the bar in 1852, and afterward practiced as a conveyancer. His first novel was "Clara Vaughn," published in 1864. His most famous book is "Lorna Doone," published in 1869, and first appreciated by the Americans.

The Cabinet.

President Cleveland's cabinet consists of secretary of state, Thomas F. Bayard, Delaware; secretary of the treasury, Charles S. Fairchild, New York; secretary of war, William C. Endicott, Massachusetts, secretary of the navy, William C. Whitney, New York; postmaster general, Don M. Dickinson, Michigan; secretary of the interior, William F. Vilas, Wisconsin; attorney general, Augustus H. Garland, Arkansas.

The Cigar Tax.

The internal tax is \$3 a thousand for cigars of any kind. There is a license of \$6. The dealer goes to the office of internal revenue and buys long strips of paper called stamps. These are marked 100, 50, 25 or any other number that may be in the package. For strips enough to put on packages holding 1,000 cigars the dealer pays \$3.

Foreign Marriage. International comity has established the rule that a marriage contracted in a foreign nation by a subject or citizen of another nation, if made in accordance with the law of the land where the marriage takes place, is held to be a valid marriage in the country to which either of the parties owes allegiance, provided the marriage was such as could be lawfully contracted there.

ALL AROUND THE HOUSE.

Practical Directions in a Graceful and

Useful Art-Appetizing Recipes. To carve well and gracefully is an enviable accomplishment in man or woman. One who has not acquired the polished art is sure to mourn the lack of it some time or other, After a sharp knife of suitable size, dexterty and address in the manner of using it is the chief requisite of good carving. A suf-ficiently high seat and a good sized platter facilitate the carver's work very much. For any thick joint and for a ham, a long, sharp pointed knife should be used; for game or poultry a shorter knife is preferable. Good Cheer gives some useful suggestions in this

In carving a turkey, cut off the wing nearost first, then the leg and second joint; then slice from the breast, after which insert the knife between the bones and separate them. The side bone lies beside the rump, and the desired morsel can be taken out without separating the whole bone.

Ducks and chickens should be placed on the dish with the breast uppermost, and the fork should be put into it, taking off the wings and legs first, without turning the fowl; then the "wishbone" should be cut out so as to leave the well browned skin over it, and a portion of the meat. Then the side bone should be cut off, and the fowl which is left in two, from the neck down; the joints may be divided also.

Partridges may be carved like other fowls, but the breast and wings are not divided.

A sirloin of beef should be placed on a dish with the tenderloin underneath. Thin cut slices should be taken from the side next the carver first, then turned over to cut the

A shoulder of mutton should be cut across to the middle of the bone first, and then from the thickest part till it comes to the gristle. In a forequarter of lamb separate the shoulder from the ribs, then divide the ribs To carve a loin of veal, begin at the small end and separate the ribs. A fillet of veal should be cut first from the top. In a breast of veal the brisket and breast must be sep-

arated and then cut in pieces,
A ham may be carved in several ways. First, by cutting long, delicate slices through the thick fat in the centre down to the bone, or by running the point of the knife in the circle of the middle, and cutting thin circular slices, thus keeping the ham moist; and lastly, by beginning at the knuckle and slicing up-

A Handsome Slipper Bag. A slipper case is always convenient but not



always as ornamental as might be. The oriental slipper bag is an exceedingly pretty and decorative form of this useful

article. The bag represented in the cut kid, lined with sky blue ottoman silk and sparkling on the turn down corners with sprays of flowers, repro-duced in various

ORIENTAL SLIPPER BAG, tints of bronze jet. Loop, knots and tassels are in thick chenille cord, yellow, brown and blue.

Delicious Oyster Pie. Lovers of oysters will read the following recipe with approval: Line a buttered baking dish with pastry, and place in it a layer of fine large oysters. Rub two tablespoonfuls of butter smooth with as much flour, and place small bits of it here and there on the oysters. Sprinkle with pepper and salt. Follow this with another layer of oysters, lotted with butter and seasoned as before Continue this process until the dish is full Pour in enough oyster liquor to fill the dish to within an inch of the top, and cover all with a rich pastry. Bake until a delicate

Points in Making Angel Cake. Success in angel cake depends upon the manner of making and baking. Miss Parloa directs that the whites of the eggs should be beaten to a stiff, white froth, then the sugar beaten gradually into them, and finally the flour and cream of tartar should be added and the mixture beaten thoroughly. Now place in a very moderate oven and bake slowly. Thorough beating and slow baking are what give a fine, moist texture. The cream of tartar gives the cake that pearly whiteness and neutralizes the peculiar flavor of the whites of the eggs.

Chicken Rimoles.

Take cold baked chicken left from dinner; free the meat from the bones and chop fine Rub a little dried bread into fine crumbs, and to this add any heated liquor of chicken, or hot water, and moisten the bread thoroughly. To a pint bowl full of crumbs and meat-the proportion may be as necessity makes itallow one teaspoonful of salt, one of pepper, one of sifted sage and one heaping teaspoonful of butter. Make into little cakes, dust with flour and fry to a light brown.

Frizzled Beef.

Frizzled beef is one of the best of simple breakfast dishes. Shave very thin half a pound of dried beef. Melt one large tablespoonful of butter in a frying pan, add the meat, stir over the fire for about two minutes, or until the butter begins to brown; dredge in a little flour, stir again, add half a pint of milk, a very little pepper, and stir till it boils. Add the beaten yelk of one egg just as you take from the fire. Serve immediately.

Cleansing Fluid for Gloves, Laces, Etc. For cleansing kid gloves, laces and ribbons, the following is recommended by Harper's Bazar: To two quarts of deodorized benzine add two drams of sulphuric ether, two drams of chloroform and four drams of alcohol. Pour the fluid in a bowl and wash the articles as if in water, rinsing in a fresh supply.

Worth Trying.

American Druggist tells how to prepare a blotter that will wholly remove ink spots from paper. Take a thick blotting paper and steep it several times in a solution of oxalic acid or oxalate of potassium. While the spot is still moist apply the prepared blotter and the ink will be entirely removed.

To Wash Fine Blankets.

For washing fine blankets take two gallons of water, add a half cup each of alcohol and ammonia, mixed to a suds with custile soap. They should be sopped up and down in it, rinsed in topid water, well shaken, and improved by carding with a comb while on the line drying.

The Naval Academy.

Candidates for admission to the naval academy at Annapolis must be between 14 and 18 years of age. For the educational requirements write to the navy department at Washington. Congressmen have the ap-pointing power, each for his own district

SCRIBNER'S MAGAZINE

Prospectus for 1888---Beautiful Christmas Number.

Among the important articles to appear during the year 1888 are the following-Send for prospectus;

ROBERT LOUIS STEVENSON will contribute regularly to each number during the year. He will write of many topics, old and new, and in a familiar and personal way, which will form new bonds of friendship between the au thor and his thousands of readers. In his first paper entitled "A Chapter on Dreams, appearing in the January number, he relates incidentally, in connection with the gen eral subject, some interesting facts concerning the origin of the now famous story. "Strange Case of Dr. Jekyll and Mr. Hyde.

RAILWAY ACCIDENTS, by W.S. CHAPLAIN, will be the first of an especially important and interesting series of papers on railways, their administrations and construction, including great engineering feats, famous tunnels and passes and, indeed, those branches of the subject which in this day engage the attention of the whole country. The illustrations which will accompany this series will be very elaborate, original, and beautiful. The authors and the titles of the future articles will be

DR. D. A. SARENT'S papers on Physical Proportions and Physica Training will be continued by several of increasing interest, with as rich and unique illustration as those which have already appeared.

ILLUSTRATED ARTICLES of special interest will be those of the Campaign of Waterloo, by JOHN C. ROPES; on "The Man at Arms," by E. B. BLASHFIELD; two papers by EDWARD L. WILSON, illustrating results of recent Egyptian research; a further article by WILLIAM F. APTAORP, on a subject connected with his recent contribution on Wagner, and many other of equal interest PROFESSOR SHALER'S articles on the Surface of the Earth will be continued and articles upon two of the most interesting groups of contemporary European writers will be accompanied by rich and novel portrait illustrations.

ELECTRICITY in its various applications as a motive power EXPLA SIVES, etc., will be the subjects of another group of illustrated articles of equal practical interest, by leading authorities upon three topics.

MENDELSSOHN'S LETTERS written to his friend, Moscheles, at a peculiarly interesting time of his career, will furnish the substance of several articles of great interest to musical readers, which will be illustrated with portraits and drawings from Mendelssohn's own hand

THE FICTION will be strong, not only in the work of well-known writers but in that of new authors, in securing whose co-operation the Magazine has been so fortunate during its first year of publication. A serial novel, entitled "First Harvests," by FREDERIC J. STIMSON, will be begun in the January number, and early in the year no elites will be published by HENRY JAMES and H. C. BUNNER. The short stories are of noticeable strength and presuness,

ILLUSTRATIONS. The Magazine will show increased excellence in its illustrations. They will be more abundant and elaborate than ever. It is the intention of the publishers to represent the best work of the leading artists, and to promote and foster the most skillful methods of wood engraving.

SPECIAL NOTICE.—To enable readers to possess the Magazine from the first number (January, 1887) the following inducements are ordered.

A year's subscription and the numbers for 1887, A year's subscription and the numbers for 1887, bound in two volumes, cloth,

\$3.00 a Year, 25 Cents a Number.

Remit by Bank check or money order to

CHARLES SCRIBNER'S SONS, New York.

MUCH VALUABLE INFORMATION FROM A STUDY OF THIS MAP OF THE



CHICAGO, ROCK ISLAND & PACIFIC R'Y.

Its central position and close connection with Eastern lines at Chicago and continuous lines at terminal points, West, Northwest, and Southwest, make it the true mid-link in that transcontinental chain of steel which unites the Atlantic and Pacific. Its main lines and branches include Chicago, Joliet, Ottawa, LaSalle, Peoria, Geneseo, Moline and Rock Island, millinois; Davenport, Muscatine, Washington, Fairfield, Ottumwa, Oskaloosa, West Liberty, Iowa City, Des Moines, Indianola, Winterset, Atlantic, Knoxville, Audubon, Harlan, Guthrie Centre and Council Bluffs, in Iowa; Gallatin, Trenton, Cameron, St. Joseph and Kansas City, in Missouri; Leavenworth and Atchison, in Kansas; Minneapolis and St. Faul, in Minnesota; Watertown and Sioux Falls in Dakota, and many other prosperous towns and cities. It also offers a CHOICE OF ROUTES to and from the Pacific Coast and intermediate places, making all transfers in Union depots. Fast Trains of fine DAY COACHES, elegant DINING CARS, magnificent PULLMAN PALACE SLEEPING CARS, and (between Chicago, St. Joseph, Atchis n and Kansas City) restful RECLINING CHAIR CARS, seats FREE to holders of through first-class tickets.

THE CHICAGO, KANSAS & NEBRASKA R'Y

GREAT ROCK ISLAND ROUTE Extends west and southwest from Kansas City and St. Joseph to Fair-bury, Nelson, Horton, Topeka, Herington, Hutchinson, Wichita, Caldwell, and all points in Southern Nebraska Interior Kansas and beyond. Entir-passenger equipment of the celebrated Pullman manufacture. Solidly bal-lasted track of heavy steel rail. Iron and stone bridges. All safety appliances and modern improvements. Commodious, well-built stations. Celerity, cer-tainty, comfort and luxury assured.

THE FAMOUS ALBERT LEA ROUTE

Is the favorite between Chicago, Rock Island, Atchison, Kansas City, and Minneapolis and St. Paul. The tourist route to all Northern Summer Resorts, Its Watertown Branch traverses the most productive lands of the great "wheat and dairy beit" of Northern Iowa, Southwestern Minnesota, and East-Central Dakota.

The Short Line via Seneca and Kankakee offers superior facilities to travel between Cincinnati, Indianapolis, Lafayette, and Council Bluffs, St. Joseph, Atchison, Leavenworth, Kansas City, Minneapolis, and St. Paul.

For Tickets, Maps, Folders, or any desired information, apply to any Coupon Ticket Office in the United States or Canada, or address

E. ST. JOHN, E. A. HOLBROOK, CHICAGO, ILL.