THE OMAHA DAILY BEE, MONDAY, SEPTEMBER 29, 1890.

A TELEPHONE TO THE SUN

The Marvelous Experiment Edison Now Has Under Way in Jersey.

CLOSED ELECTRIC RAILWAY CONDUITS.

Description of One of the Latest Devices-A Register for Telephone Exchanges-Remarkable Multiplex Telegraph-Sparks.

At Ogden, N. J., there is a mass of fron ore a mile long standing perpendicular and extending into the bowels of the earth to great but unknown depths, said to contain several hundred million tons of magnetic material. As the violent storms and uprushes in the sun produce disturbances of the earth's magnetism which are recorded on the magnetometers at the Kew and other observatories, it has occurred to Mr. Edison, says the New York Jun, that the strength of the solar disturbance as exerted in our planet could "be increased enormously by utilizing a vein of magnetic iron ore, and running around the body of one several miles of wire, forming an inductive current, into which powerful electric currents would be thrown by any disturbance of the earth's magnetism." "By the use of instrumentseverychange," he says, "could be recorded, and the use of the tele phone all sounds produced on the sun would be heard on our planet He is, accordingly, erecting tele-graph poles on each side of the Ogden ore hill and parallel with it, on which he is coiling an insulated wire many times around the whole area where the earth's magnetic lines leave the iron mountain and extend into space. The two ends of the long wire will be taken into his observation station and connected with the receiving telephone.

From every point of view-poetic, spiritual and scientific-this promises to be one of the most thrilling experiments ever made. Its successful conductorlike Wordsworth's

"Curious child, who dwelt upon a tract

Of inland ground, applying to his car The convolutions of a smooth-lipped shell," hearing "sonorous cadences" and nolding converse with the unseen universe itself-will be able to listen to the aweinspiring rush and roar of the sun's mountainous billows of fireas they splutter forth in inconceivable fury from his cyclopean furnaces. What a sermon will be preached into the receiving instrument! A voice from the central orb of our planetary system-type answer-ing to anti-type thundering forth the eternal power and godhead of him whom the Christian pulpit, often too feebly for our dull ears, proclaims "the light of this world.

From a scientific point of view the value of this experiment may be im-Every new fact brought cermense. tainly to light respecting the actual phenomena in "the regions beyond," nowever insignificant it may seem at first, becomes to science in her on ward path of research the key stone of an arch serving to bridge some hitherto impassable chasm. Almost every great outburst of a solar cyclone is followed by a magnetic storm on our little planet, and simultaneously the ices of its polar circle glisten in the light of the aurora borealis.

Familiar examples of this are found in all astronomical and magnetic observations. The magnetic storm of November 7, 1882 (succeeding the appearance on B. SUD SDO mensi

dred miles. It is proposed to furnish the electric current from a series of generating stations distributed along the line, and the cost of the undertaking, including rolling stock, is estimated at only about 43,000 per mile. Archangel, the proposed northern terminus, lies in 641° north latitude, close to the Arctic north latitude, close to the Arctic circle. It is far above the latitude of the northern shore of Hudson bay and almost as far north as the narrowest part of Behring's straits, the suggestion of crossing which by a railway has been assumed by many to be impracticable. It may be that electricity will furnish the solution of the difficulty of operating rallways in extremely cold regions which attends the use of steam. Evidently an electric railway can be built of any desired length if power generationg stations are supplied at proper intervals, and hence it becomes only a question of obtaining sufficient traffic to warrant the cost of construction and operation. The electric locomotive has no steam or water pipes to freeze and burst in the intense and long continued cold of a far northern winter, and electricity, which trains can be lighted, will doubtless erelong be successfully applied to the purposes of heating also. Should the remarkable enterprise of an electric railway to the White sea be actually carried into execution it will not be hard to believe that a similar line may be pushed through Alaska to meet at Behring's straits an extension of the

White sea, a distance of over five hun-

Russian railway system through Siberia and complete a continuous railway line uniting America, Asia and Europe."

Closed Electric Railway Conduit.

An enormous amount of energy has been spent by inventors in trying to work out the practical solution of the very difficult problem of electrical traction without overhead wires.

All sorts of plans have been schemes to avoid the trouble, and of these one of the neatest we have seen is the closed conduit recently patented by Mr. C. J. Van Depoele, says the Electrical World It consists of a very small conduit with a slot above for admitting the contact de vice, but almost completely closed by flexible lips which are only separated plow attached to the carrying the brushes as the car and carrying the brushes or rollers forces them apart. We have, Car then, a slot which is normally completely losed by flexible walls. The thin ploy simply separates these enough to allow of its passage so that with the exception of a short space immediately under the car and almost entirely filled by the plow the conduit is closed in such a way as to exclude dirt, dust, and even water. Of course it is almost hopeless to expect that nothing of these could make its way into the conduit, but a very large pro portion^a of the disturbing intruders

must be kept permanently out. The conduit itself may be very small. and the main conductor may be carried with cable underneath it and tapped into the conductor strip at intervals If the flexible walls can be made so as to retain their elasticity and the reasonaly long-lived, very much of the trouble hat has hererofore stood in the way of the development of conduit traction will have been removed. Rubber in various forms, packing strips of canvas or duck, permeated with waterproof insulating ompounds and supported by metallic strips, fibrous packing of various sorts, alternate strips of rubber and canvas, and fibrous packing strips driven with sufficient elasticity by steel spring, are among the forms proposed.

A Remarkable Multiplex Telgraph.

A most remarkable developement of the multiplex telegraph has just been devised by Lieutenant F. Jarvis Petten, who has already done yeoman's service in this field, says the New York Sun. The improved system depends for its operation upon the synchronous and uniform movement of two or moreelectric motors placed at distant points, the nenromism being in this instance, delicate, as it usually is, but powerful and trustworthy. The possibilities of this arrangement point to the wonderful conclusion that with repeating stations at suitable intervals and branches connected to the same synchronizing circut, an entire network of lines and instruments can be operated with the dis tributing brushes from Maine to California, kept on the same sergments by the impulses emanating from New Ysre. Lieutenant Pattent affords a brilliant instance of what can be done in an unfamiliar field by any one who has the grit to concentrate himself upon it. Lieutenant Patten was stationed out west with his regiment. While on the trackless plains, where so many of the officers attempt to relieve the tedium of the weary days by the

Refining Silver by Electricity.

consists in using an ordinary electrolytic

inches, are placed in muslin bags which

The current used is 150 ampheres, and

period of work brushes are kept moving

sweep off the silver deposited into

taken out and sent to the furnace.

Heat and Magnetism.

tained in the matte.

understood.

iron suddenly

According to a foreign journal devoted

It is most suitable for the refin-

TO WATER THE 'ARID LANDS. ganese, as in manganese steel,, it be-comes almost completely non-magnetic, says Engineering and Building. Thes facts show us that iron is not necessarily magnetic under all conditions, for ad mixture with a small quantity of another metal, and even mere change of temperature render it non-magnetic. Stranger still, some observers report that iron be-comes magnetic when the temperature reaches whiteness, but this lacks confirmation. The behavior of nickel steel is very re-

markable. As usually received from the maker, nickel steel with 25 per cent nickel is non-magnetic; and yet it is a mixture of two magnetic metals, iron and nickel. If, now, we cool this nickel steel-20 degrees C, (-4 degrees Fahr.) it becomes very decidedly magnetic, and remains so when it again returns to the normal temperature. If, finally we heat it, it remains magnetic until reaches its critical temperature of 58 degrees C, (1,076 degrees Fahr.), when it again becomes non-magnetic, and mains so until again cooled to -20 degrees C.

Kinship of Electricity and Light.

What has electricity still in reserve for us? said M. Cornu, io his address to the French Associations for the Advancement of Science. Nobody can foresee it, yet; much is expected from it, and from every side. The art of engineer-ing urges it to furnish the transformation, and the universal distribution o energy; medicine and surgery call for it, in difficult cases; physiology asks for it for the secret of nervous transmission, which is in such intimate analogy with the electric current.

As the pure theory, great results are approaching. Geometers who are the continuators of Ampere, Poisson, Fourier, Ohm, Gauss, Helmholz, Thompson, Maxwell, and have helped so much in connecting electricity with the laws of mechanics, are preparing a great syn-thesis which will mark an epoch in the history of natural philosophy. they are very near demonstrating that the electro-magnetic are subjected to the same elementary laws as the optical phenomena; that they are two manifestations of a motion in the same element, ether; the problems of ontics are solved by equations of electro-magnetism. From an experimental standpoint. very promising results are already ob tained; the speed of light, fixed by optical methods, is measured also by purely electrical measures; it has even been al most possible recently, after the much-bruited experiments of Mr. Hertz, that the experimental identification of electrical discharges, and of luminous undulations of waves was an accomplished fact. If more decisive proofs are still wanted, it can be said that, in the mind of physicists, the intimate connection between electricity and light is very near being rigorously defined.

Soft-Boiled Eggs Prepared a la Kemm The novel experiment of boiling eggs by electricity was tried in the office of the electric supply company, in the

Masonic temple, on Third street. Of course, they were boiled in water, but electricity was the heating agent, says the Cincinnati Times-Star. Luke Lilley the city's assistant electrician, was chief cook; Charley Marshall, the underwriter's agent, ate the first egg boiled by the agency of the subtile current. It required six ampere (quantity of electricity) and ninety-six volts (pressure of force) to accomplish the operation with about two quarts of water in a huge tin cup. The news of the egg-boiling

spread quickly, and, as it was about lunch time, brokers, bulls and bears, bankers, insurance men and lawyers crowded the office. About thirteen dozen eggs were consumed, the only disappointment being that a drink did not go with each egg.

The Electric Light Unpopular in China If report is to be relied on the Chinese have still a long way to go before they will be in a position to avail themselves

of the benefits of modern scientific pro-

gress. It is stated that the imperial

palace, by order of the young emperor.

lights. The imperial cabinet was called

ogether to witness the formal opening

of the new system of illumination. In-

stead, however, of their expressing ad-

miration of the brilliant light they stood

aghast. This wonderful sheen, which came and wentat the touch of a button,

could only be the offspring of super-

natural powers and was probably a machination of evil spirits Thus in sol-

emn conclave the mandarins decided.

and in a few days the electrical plant

throughout with electric

Mr. Jones of Kansas Has a New Scheme of

Irrigation.

ARTESIAN WELLS ARE NOT NEEDED.

He Believes that Water Is to Be Had Near the Surface-The Operations now in Progress Near Ogalalla.

Mr. Jones, the well known irrigation ditch builder, is hard at workat Ogalalla on a plan by which he expects to get from beneath the surface sufficient water to redeem the arid wastes of Kansas and Nebraska. A correspondent of the Denver News tells how the work is done. In the suburbs of the town he has built an immense reservoir with a sixty-five foot fall for the storage of his water. This is from a half to three-quarters of a mile long by 800 feet wide and twenty feet deep, well walled by an immense embankment all around. Thirteen miles up the South Platte from Ogalalla Mr. Jones began his work a year ago. A short distance from the bed of the river he has dug a long canal parallel to the now dry bed of the stream. With a breadth of fourteen feet he has constructed this canal for two miles along the course of the river up stream, keep ing all the way but a very short wa from the bed of the stream. The latter has a descent or fall of eight feet in a mile. The fall of the ditch is but but two feet. In these two simple facts lay the key to Mr. Jones whole plan. As far as the canal has been carried it

has been dug through sand. Every where four feet below the surface little veins of water are struck, the percola tion being from east to west. In boring into the earth stratas of clay and gravel were penetrated. The latter being very coarse and comparatively loosely packed together. Water seeps through it very readily, and the interstices are filled with water. Thus the hydrostalle pressure forces the water to the surface when an outlet for it is given by means of the pipes. It seeks its own level, and as that is considerably above the bed of the canal, therefore it overflows, "Buffalo" Jones, in his unbounded faith in the inexhaustibility of the supply of the underflow, goes the geologists one better and declares there are lakes and seas of water underground. He does not believe that man can use it up. Hecites eminent authorities for hisbelief, and says that the underflow is going to redeem the great American desert. Western Kansas, he declares, will one day be a beautiful, pro-

ductive plain, and prophesics the same glorious future for all those barren tracts of land that have hitherto not been marketable.

As can be seen his system is simple and comparatively inexpensive. The only question can be the limits of the supply, and whatever he does Mr. Jones will be thoroughly testing this. It is worthy of note that the beauty of this system is that it exemplies what is known in logic as the mutuality of cause and effect. Nothing is ever lost in nat-The water brought to the surface ure. ov these artificial means is spread over the surface of the earth, and the far greater amount after havby ing done its service sinks into the earth again to be brought to the surface again and untilized in the same manner with the same result, and so on in unending succession. The water will be used and reused again and again, uncon-

sciously, of course. The Ogalalla canal will not be of any benefit to the citizens of that country this season, but next year they will have the opportunity of

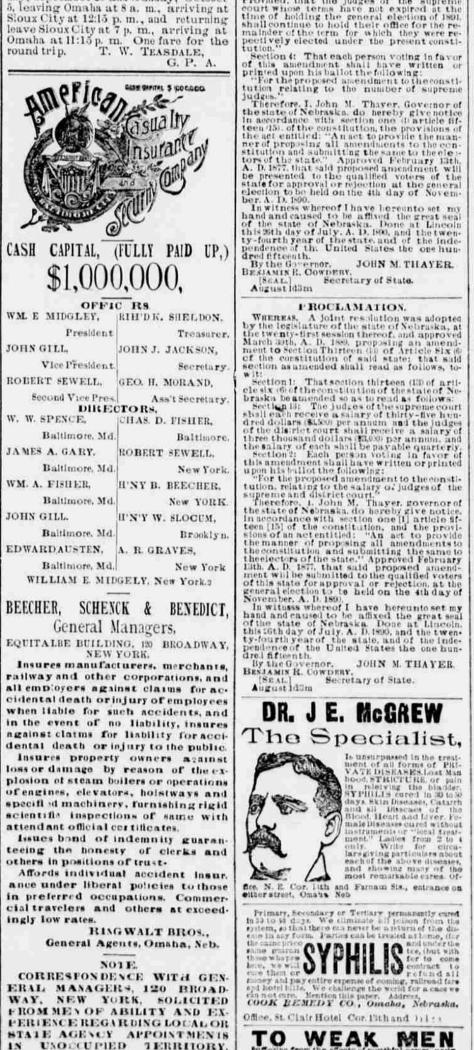
pendent of the United States" for her wheat supply in 1590. Only three years ago those same British writers discovered 'a remarkable deterioration in American flour," asserting that it had lost its "strength" and was "merely respectable offal." During the past "mercely respectable offal." During the past six months these same writers have made the appailing discovery that American wheat flour is "adulterated" by the admixture of com-meal. All these statements are disproved and our credulous Yankee economists, who fake matters for the sensational dailies, should occupy the time between drinks to learn a few facts connected with American wheat culture and is capacity. for developwheat culture and its capacity for develop-ment. There are very good reasons for re-fusing to believe that the United States will fusing to believe that the United States will in 1990 be unable to produce enough wheat for home consumption. In the first place, there are millions of acres of good wheat lands in the United States that are not yet under culture. Even with the present exhausting method of cropping wheat, the additions to area alone would be sufficient to carry us fur be-uend but about the present decade brune us an yond 1900, should the next decade bring us an population. Again, the American practice of cropping wheat without using fertilizers of special tillage will be abandoned as land be comes more valuable, as population increases and as the overtaking of supply by consump-tion enhances the value of wheat. A simple computation will suffice to illustrate the ca-pacity of the United States. Conceive the wheat area to remain at its present figure, 35,000,000 acres in round numbers. Conceive 1990 to have arrived and the population large enough to consume the 450,00000 bushels of wheat grown on the 35,000,000 acres of land. Now fertilization is generally adopted. The capacity of the soil is increased so as to raise the "average yield per acre of the country" one bushel. In the first year of fertifizing and careful culture that adds 38,000,000 bushels to the capacity of the country. The second year brings better results still and adds another bushel to the "average," implying an increase of 76,000,000 bushels. The third year adds another bushel to the acre's yield and brings the increase up to 114,000,000 bushels. These in reases are small when compared with the increases achieved in France, and as the soil of the United States is superior to that of France, it is safe to predict that the "aver-age" of twelve or less bushels to the acre in this country may be raised to twenty and more bushels, so that the present 35,000,000 acres under culture may be taken to represent a producing capacity of 750,000, 00 to 1,000,000,000 bashels of wheat. At the rate of five bushels per head, it would require 200,000,000 inhabitants in the United States to consume all that the present acreage can produce under an enlightened system of cul-ture. Go further, and conceive the wheat area extended from 38,000,000 to 50,000,000 acres, which is within the probabilities, and the average of thirty bushels to the acre with nean a wheat crop of 1,500,000,000 bushels. mean a wheat crop of 1,500,000,000 bushels. Density of population implies en-forced intensity of population, and when once the American deposits of fertil-izers are brought into use, all crops will re-spond by raising their acreage. Natural soils in the valleys of Oregon and Washington have yielded seventy-two bushels of wheat to the area.

to the acre. When less fertile soils are made to resemble those wonderful western soils, wheat growing will assume a magnitude that would now seem incredible. Bulls and bears, foreign pessimists, native blockheads and gamblers in grain the world over should move the "importing" date of the United States forward from 1990 to 9100.

To Dispel Colds,

Headaches and fevers, to cleanse the system effectually, yet gently, when costive or bli-ious, or when the blood is impure or sluggish, to permanently cure habitual constipation, to awaken the kidneys and liver to a healthy activity, without irritat, them, use Syrup of Figs. without irritating or weakening

Sloux City Corn Palace and Return. The Chicago, St. Paul, Minneapolis & Omaha railroad (depot 15th and Webster sts.,) will run a special train from Omaha to Sioux City and return, Sunlay, September 28 and Sunday, October , leaving Omaha at 8 a. m., arriving at



PROCLAMATION. WHEREAS, A joint resolution was adopted by the legislature of the state of Nebraska, at the twenty-first session thereof, and approved February 13th, A. D. 1880, proposing an amend-ment to the constitution of said state, and that said amendment shall read as follows, to with

Omaha Manufacturers

Boots and Shoes.

KIRKENDALL, JONES & CO.

Wholesale Manufacturers of Boots & Shoes

Agonis for Boston Rubber Shoe Co., 199, 1164 and 110 Harney Street, Omaha, Neb.

Brewers.

STORZ & ILER.

Lager Beer Brewers,

1501 North 18th Street, Omaha Neb.

Cornice.

FAGLE CORNICE WORKS.

Manufacturers of Galvanized from Cornice

Artists' Materials.

A. HOSPE, Jr.,

Artists' Materials, Pianos and Organs,

1515 Douglas Street, Omaha. Neb.

Coal, Coke, Etc.

OMAHA COAL, COKE AND LIME CO.,

Jobbers of Hard and Soft Coal.

S. E. Cor. lith and Douglas Streets, Omaha, Neb.

Cigars.

DEAN, ARMSTRONG & CO.,

Wholesale Cigars.

40 N. lith Street. "Hello!" 1430.

Dry Goods and Notions.

M. E. SMITH & CO.,

Dry Goods, Furnishing Goods and Notions

Corner lith and Howard Streets.

KILPATRICK-KOCH DRY GOODS CO.

Importers and Jobbers in Dry Goods,

Gents' Furnishing Goods. Corner 1/12 and Harney Streets, Omaha, Nob.

Furniture.

DEWEY & STONE

Wholesale Dealers in Furniture,

Farnam Street, Omaha, Nebraska

CHARLES SHIVERICK.

Furniture.

Omahs, Nebraska

Groceries.

MeCORD, BRADY & CO, Wholesale Grocers,

Lib and Leavenworth Streets, Omaha, Nebrasta,

Lumber, Etc.

G. W. DOUGLAS & CO.,

Dealers in Hard wood Lumber,

Yard 1810 N 16th St., Ogana.

JOHN A. WAREFIELD,

Wholesale Lumber, Etc., Etc.,

Imported and American Portland Comont. State agent for Milwaukes Hydraulic Comont, and Quincy White Lims.

Section 1: That at the general election to be held on the Tuesday succeeding the first Monday of November, A. D. 180 there shall by sumitted to the electors of this state for ap-Mondary of November, A. D. 1880 there shall by similated to the electors of this state for approval or rejection an amendment to the constitution of this state in words as follows: "The manufacture sale and keeping for sale of intoxice ting liquors as a betrage are forerer prohibited in this state, and the legislature shall provide by law for the enforcement of this provision." And there shall also at said election be separately submitted to the electors of this state for the inpurval or rejection an amendment to the constitution of this provision." And there shall also at said election be separately submitted to the electors of this state for their approval or rejection an amendment to the constitution of the state in words as follows: "The manufacture, sale and keeping for sale of intoxicating liquors as a beverage shall be licensed and regulated by law."
See 1. At such election, on the ballot of each elector voting for the proposed amendment to the constitution shall be written or printed the words: "For proposed amendment to the constitution prohibiting the manufacture, sale and keeping for sale of intoxicating liquors as a beverage." or "Against the probating the manufacture, sale and keeping for sale of intoxicating liquors as a beverage." The manufacture, sale and keeping for sale of intoxicating liquors as a beverage." The shall also be written or printed on the amendment to the constitution, the words: "For proposed amendment to the constitution the manufacture, sale and keeping for the proposed amendment to the constitution and keeping for sale of intoxicating liquors as a beverage in the sail of each elector voting for the proposed amendment to the constitution and keeping for sale of intoxicating liquors as a beverage and regulated by law," or "Against anie proposed amendment to the constitution the words: "For proposed amendment to the constitution the state for the said proposed amendment to the constitution of the said proposed amendment to the constitution the themanufacture, sale and

Window caps and metallesky lights. John Spencier, proprietor. 108 and 110 South 10th street.

herefore I. John M. Thayer. Governor of Therefore, L John M. Thayer. Governor of the state of Nebraska, do hereby give notice in accordance with section one [4] article [15] of the constitution and the provisions of the act entitled "an act to provide the manner of proposing all amendments to the constitution and submitting the same to the electors of the State." A provoed February lith. A. D. 1877, that said proposed amendment will be sub-mitted to the qualified voters of this state for approval or rejection at the general election to be held on the 4th day of November, A. D. 1899. In witness whereof I here unto set my hand.

In witness whereof 1 here and 5st my nand, and cause to be affixed the great scal of the state of Nebraska. Done at Lincoln this 26th day of July, A. D. 1899, and the 24th year of the state, and of the independence of the United States the one had dide afficients. By the Governor, JOHN M. THAYER, Destance P. Coursey BENJAMIN R. COWDERY, Secretary of State.

August 1d3m

FROCLA MATION.

FROCLA MATION. WHEREAS, A joint resolution was adopted by the legislature of the state of Nebraska at the twenty-first session the reof, and approved March 20th A. D. 1880, proposing an amend-ment to section two [2] four [4] and five [3] of Article six [6] of the constitution of said state and that said section as amended shall read as follows, howit:

Article Six (c) of the constitution of said state and that said section as amended shall read as follows, to-wit: Section 1 That section two (2) of article six 6) of the constitution of the state of Nebraska be amended so as to read as follows: "Section 2: The supreme court shall con-sist of five 5) judges, a majority of whom shall be necessary to form a quorum or to pronounce a decision. It shall have original jurisdiction in cases relating to revenue, civil cases in which the state shall be a party, mandamas, quo warranto, habcas corpus, and such appel-late jurisdiction as may be provided by law. Section 2: That section four (4) of articles six do. of the constitution of the state of Nebrask, be amended so as to read as follows: Section 4: The judges of the supreme court shall be elected by the electors of the state at large, and their terms of office, except as herein after provided, shall be for a period of five (5) years."

arge, and their terms of office, except as hereinatter provided, shall be for a period of five (5) years." Section 3: That section five (5) of article six (6) of the constitution of the state of Net ras-ka, be amended so as to rend as follows. Section 5: "At the first general election to be held in the year 1891, and after the adop-tion of this am adment to the constitution, there shall be elected three (5) judges of the supreme court, one of whom shall be elected for the term of one (1) year, one for the term of three (5) years and one for the term of five (5) years, and at each general election there after there shall be elected one judge of the supreme court for the term of five (6) years. Provided, that the judges of the supreme court whose terms have not expired at the time of holding the general election of 1891, shall continue to hold their office for the re-pectively elected under the present consti-tution." Section 4: That each person voting in favor

CONSOLIDATED TANK LINE CO., Wholesale Refined and Lubricating Oils. Axle grease, etc., Omaha. A. H. Bishop, Manager. Paper. CARPENTER PAPER CO., Wholesale Paper Dealers. Carry a Nice slock of printing, wrapping and writing paper. Special attention given to card paper. Safes, Etc. A L. DEANE & CO., Halls' Safes, SII and 323 South 10th St. Omaha. Toys, Etc. H. HARDY & CO., Jobbers of Toys, Dolls, Albums, Fancy Goods, House Furnishing Goods, Children's Carriages. 120 Farmam street, Omaha, Neb. Water Supplies. U. S. WIND ENGINE & PUMP CO., Steam and Water Supplies, Halliday wind mills. 915 and 920 Jones st., Omaha. G. F. Ross, Acting Manager. Iron Works. PAXTON & VIERLING IRON WORKS, Wrought and Cast Iron Building Work Engines, brass work, general foundry, machine and blackspilth work. Office had works, U. P. By, and 17th street, Omaha OMAHA SAFE & IRON WORKS. Mant'rs of Fire and Burglar Proof Safes, Vaults, jail work, iron shutters and fire escapes G. Andreen, propr. Cor 14th and Jackson Sts. Sash, Doors, Etc. M. A. DISBROW & CO., Wholesale manufacturers of Sash, Doors, Blinds and Mouldings. Branch office, 12th and Irard streets, Omaha, Neb. South Omaha UNION STOCK YARDS CO., Of South Omaha. Limited. NEBRASKA National Bank U. S. DEPOSITORY, OMAHA, NLB. Capital. - - - - \$400,000 Surptus Jan. 1st, 1890 . 87,800 Officers and Directors - Henry W. Ystes, Presidents Lewiss, Reed, Vice-President; James W. Sarage, W. V. Morse, John S. Collins, R. C. Cushing, J. N. Patricz, W. H. S. Hughes, cashier. THE IRON BANK. Corner 12th and Farnam Sts. A General Banking Business Transacted. BONDS WANTED Correspondence solicited. COMPANIES, ETC. N.W. HARRIS & COMPANY, Bankers, 163-165 Deerborn Street, CHICACO. 70 State Street. BOSTON. THIS PAPER IS PRINTED FROM $\Gamma Y P E$ - FROM THE -Great Western Type Foundry Prof. F. C. FOWLER. Moodus, Conn. 1114 Howard St. OMAHA. WEAK MANHOOD health fully restored Variocale cured. Parts scilarged transfit and Mount of Variocale cured. Parts scilarged broather and the Burres and scilarged becreary. Prof. II. & BUTTS, 174 Fullow St. N. 2

CHAS. R. LEE. Dealer in Hardwood Lumber. Wood carpets and parquet flooring. 9th and Douglas Streets. Omaha. Nebraska. FRED W. GREY. Lumber, Lime, Cement, Etc., Etc. Corner 9th and Douglas Streets, Omaha. Millinery and Notions. L OBERFELDER & CO., Importers and Jobbers in Millinery, 208, 210 and 212 South 11th street. Notions: J. T. ROBINSON NOTION CO. Wholesale Notions and Furnishing Goods 1124 Harney street. Cmaha. Oils.

Allepheny observatory, covered at. 2,200,000,000 square miles), seriously interrupted the telegraph lines at New York, and cable messages were delayed nearly an hour, while at Chicago, the switchboard was a dozen times on fire. As an experiment one of the Western Union wires between Washington and Baltimore was worked with the earth current alone. There is every reason therefore, to expect that the strength of all such disturbances will be increased enormously in Mr. Edison's inductive circuit of the Ogden iron mountain; that by the use of this instrument the variations of intensity can be recorded, and, as he hopes, "sounds produced on the sun will be heard on the telephone."

A Register for Telephone Exchanges. With the growth of the long-distance telephone system has come the need of ture, and other amesements of a more an entirely new set of devices exciting character, he took up the study for faciliting work phone exchanges. The in of long-distance service, both electricallyand otherwise, are sufficiently dif- trical target, which still stands, an ob forent from those ordinarily met with to ject of curiosity to the Indians at Fort demand special apparatus, says the Electrical World. The device that calls for attention in the present article isone intended more especially to facilitate keeping close account of the business transacted in an exchange, and particularly of the different calls and general service of long distance lines, where the charges are necessarily high and min-dynamos and motors, but has brought to charges are necessarily high and min-utes mean money. It provides means notice some of the most beautiful and for registering the various circumcomprehensive systems of telegraphy everdevised. He has other ideas on stances occurring in the routine of ex change service; the number of calls made in the day, the time at which calls which he is at work, and he has already secured an enviable reputation in Europe. Lieutenant Patten is a pheare made, the time occupied in connecting, and similar data, are presented in printed form, so that the closest check nomenally rapid worker, and his inventions have been brought to perfection in can be kept on the operation of the lines. a remarkably short time. The means adopted are comparatively simple. A tape is passed automaticall

through the apparatus at a known and determined rate and on it are impressed to the mining and kindred interests, the the various characters required to show method of refining silver electrically is the nature of the service. A large time wheel keeps track of the internow coming into a somewhat extended use, says the Chicago Journal of Combetween the different signals led, while these latter are wals merce. recorded, ing of auriferous silver containing about printed by one or more printing 11 per cent of gold, the cost in this case levers and wheels thrown into action being only about 14 cents per pound. The during the operation of the system: for principle upon which the method is based example, at the moment of calling a star will be automatically impressed upon the bath anodes of an argentiferous matte. ribbon, and when the necessary connec and a thin plate of pure silver as the cathode. The bath consists of a tion with the station called is made the small detting wheel shown prints along very weak solution of nitric acid, containside the time scale a row of dots, coning about 1 per cent of the acid. The tinuing until the station called is dis anodes, which are about one-half inch connected. The star then locates the thick, with a surface of about 13.5 square moment of call. The interval between the star and the appearance of the dot rotain the gold, platinum, peroxide of lead and similar foreign materials conline shows the time taken to make connections. The length of the dot line de termines the exact time during which the potential difference between the the telephone was in service by the subscriber. Obviously this form of appa plates one voit. During the whole ratus can be elaborated to any desired extent, so that, for example, it will be up and down the silver plates, which possible to read from the paper ribbon an exact account of the use made of a troughs put for the purpose at the bottom of the bath. These troughs are re-moved from time to time, and the silver long distance line within a day's opera tion, and when, as is often the case charges for such service are made on th the matte contains copper, this is dis-solved by the nitric acid, but is not debasis of the time occupied, the use of such an automatic registering device as posited on the cathole. The electrolytic that here described certainly means a very considerable saving in many cases.

A Railroad in Arctic Regions.

London Iron gives the following particulars of a project, the success of which would doubtless be followed by similar enterprises on this side of the Atlantic: "The boldest electrical project yet sug-gested is one which is under consideration in Russia for a line from St. Peters burg northeast to Archangel, on the

was removed. Sparks. perusal of the highest possible litera-Captain Williams of Jeffersonville. Pa., twenty years blind, is recovering his sight. He thinks the glare in his tele- of electricity, with which he occupied al room of an electric light has something conditions his spare time. The first result of this to do with his recovery. application was the invention of an elec-It is stated that the German electric company of Madrid has in contempla-

was fitted

tion the installation of a plant for elec-Sidney, Neb. He came east to put himtric ploughing on a large property in self in line with the latest work and the central part of Spain. ideas, butso far from having anything to Trees do not suffer from electric learn, he was at once accepted as one of lights, as has been supposed. Dr. Siethe foremost inventors, and his ideas mens is said to have proved by experiare now attracting univeasal attention. ment that the electric light aids vegetation.

In the Sikkim expedition a telegraph office was opened which enjoys the dis-tinction of being the highest in the world. It is situated at Bhutong, at an altitude of 13,500 feet, two and threequarters miles above the level of the

An electric company in Germany has announced itself as prepared to transmit 300 horse power from the Neckar at Lauffen to the Frankfort exhibition, a distance of about one hundred miles, on condition that an ordinary overhead cable, connecting the two places, is pro-

vided free of cost. A simple method of curing the troublesome creeping of salts on batteries is described by M. Ernst Gerard. This is to smear the surfaces to be preserved with a thin coat of vaseline. The vaseline is unchangeable by air, is not attacked by most chemicals, is easily applied, keeps in place, and does not cover up from sight the parts to be protected.

In the course of recent experiments in England a curious effect was observed, namely, that the formation of ozone is hindered by the presence of oil of turpentine, and that the electrical conductivity of the air at once disappears when some of the vapor is introduced Not only turpentine, but several of the essential oils, when acted upon by atmospheric air, transform a portion of it into ozone, and again, turpentine will

absorb ozone without decomposing it. The question whether or not electricity is manufactured is now being tried in certain courts. If it is manufactured,

the producers in numerous states are liable for taxation. Benjamin Franklin held that electricity was not manufac tured, but was taken from one body to be delivered to another, and that practically nothing was lost in the transition. Hitherto our scientific men have held this to be true in a broad sense.

method of treating mattes containing A tall tree in front of 19 Stuyvesant the precious metals will doubtless come street, New York, was discovered to be into general use when its value is better alive the other afternoon. It held a group of men and boys around it for a long time. The bark had been wet by the rain, and those who touched it got a It is now pretty widely known that on suddenly ceases to be magnetic pretty strong charge of electricity, similar to that from a medical electrical mawhen heated to the critical point of its "recalescence" or "after-glow," and that chine. Electric light wires were fastened to a bracket nailed to the trunk. alloyed with some 12 per cent of man-

testing what reliance they may place upon it. "Buffalo" Jones is confident that they will be unable to exhaust it. and his reasons for this belief must be admitted to be well founded.

A News reporter obtained Mr. Jones opinion as to the feasibility of sinking artesian wells all over the arid belt which it has been suggested the government might undertake. Speaking of this he said, "there has been a great deal of inquiry and speculation on this point, I know, Water, of course, can be had anywhere by boring far enough into the earth's crust; the further you go the more water you obtain. There are now a great many wells in the country sunk by private individuals, ranging all the

way from a few hundred feet to several thousand feet. But it is too expensive. One well often costs \$10,000. You can get water without going so far below the surface. I don't care where it is you can get water any where without going very far beneath the earth's surface.

"Why do you select the vicinity of a river? "Well, it is generally admitted that the water flows more freely in the neighborhood of the underflow of a stream. But then I will on the same plan find water not far down on the arid plains out here. You don't have drive wells. drift gradually for your water and will strike it like a miner his vein. I don't think the government will ever try any plan of boring artesian wells on an extensive scale. It may to a certain extent. But individual companies cannot afford to carry out a scheme of this kind. Especially when the system I am devel oping is much cheaper and productive of petter results I do not think it will be

tried. With my works I can bring more water to the surface than can 100 artesian wells costing \$10,000 apiece. Mine costs \$20,000; and you can figure out the difference without much trouble. I got eighteen feet into the earth and they over one thousand. The plan loutline and am following i comparatively cheap. It will save mil lions of needless expense to the country and furnish it with a boundless supply of water. It will reclaim this whole barren waste. The irrigating ditches will not be drying up and the rivers will not be taxed so. To get at this subterranear water has been the question, and the problem to be solved has been one of exense. This scheme gives the solution believe. You, see, as you strike the water in this way you give it an outlet, and there are walls of it on each side it is forced immediately to the surface. There can be no question that the subterranean waters are inexhaustible. and I believe, as I have said, that my method, perhaps improved on, will be the one that will be found most feasable to get at them.

Fits, spasms, St. Vitus' dance, nervousnes and hysteria are soon cured by Dr. Mile's Nervine. Free samples at Kuhn & Co.'s, 15th and Doughs.

AMERICAN WHEAT.

1.8

STATING QUALIFICATIONS.

JOSEPH GILLOTT'S

STEEL PENS.

GOLD MEDAL, PARIS EXPOSITION, 1889.

THE MOST PERFECT OF PENS.

No Danger That We Shall Be Compelled to Import.

Superficial writers on wheat growing are ust now asserting and reasserting that the United States will be compelled to import wheat grain in the year 1890, says the Milling World. This assertion took its latest start at the recent convention of the National Asso-ciation of British and Irish Millers, when Editor Rush of the London Millers' Gazette made use of the prediction. Americans should not be too ready to accept as confirmed truths all the wild predictions made in Europe con-cerning the United States. We have only to go back four or five years to find British writers jubilantly declaring that India's pro-duction of wheat would develop so rapidly that Great Britain would be "absolutely inde-

TO WEAK MEN Information of the effects of youthful errors, early leady wanting weathers, lost transhood effect in particulars for home cure, PR FE of charges, A man who is nervous and sebulitated. Address the provide the second of the read by cure particular for home cure is the second of the read man who is nervous and sebulitated. Address

Fois LADIES ONLY-OF. Leduc's Periodical Pills the French remody, act on the meastrum system and cure suppression from whatever cause. Promoto menstruation. These pills should not be taken dur-ng pregnancy. Am. Pill Co., Royalty Proce. Spen-cer. Clay Co., in Genuine by Sherman & McConnell, Dedge st., hear P. O., Onnaha, C. A. Meicher, South Omaha, M. P. Ellis, Councel Bluffs E, or 3 for 4.