

SCIENCE AND PROGRESS.

USEFUL INFORMATION FOR INQUIRING MINDS.

Improved Fire-Escape Devices--Electrical Utilization of Niagara--Automatic Adding and Recording Machines

Animated Lamplighters.

In the days of our grandfathers... matches were not the common article that they are now, and it is only a few years ago that they were so expensive as to cause substitutes to be largely used where possible.

The youngsters of the present day have no use for these articles, unless it may be to play a trick with them like the following--Take a strip of quite heavy writing paper, about six or eight inches long and two inches wide.

Now carefully unroll the strip and bend it in the middle lengthwise the inside of the roll outward. Be careful in bending not to take the curl out any more than possible.

After bending cut a slit along the bend to within half an inch of each end. Then hand to the person upon whom the trick is to be played, of course not letting him see any of the preliminary preparations.

Light a match and touch to the end of this lamplighter and set it on fire. Perhaps a better way would be to have one of the lighters, also, without the victim's knowledge, light the end of the match.

The trick is an amusing one and not less dangerous, for the victim does not generally hold the paper long enough to get burned.

Improved Fire Escape Devices.

A decided acquisition to the means available for the saving of life and property from fire is a new extension ladder and fire escape which can be readily raised or lowered by a steel wire cable operated by a windlass. The ladder can be taken from the truck on which it is brought to the scene of the fire by eight men, extended to 66 feet in length and secured in forty-six seconds, or, when lying on the ground, in thirty-seven seconds.

It is constructed of Upland spruce timber, and the iron and steel work is made as light as is consistent with strength and safety.

Excellent as is the work done by the fire brigades in this country we have still something to learn in some departments of the service. This is shown by the creditable record which the adoption of improved appliances has enabled the Fire Department of Vienna to make.

In that city the firemen are provided with a sort of diver's suit and a fine mask by means of which they can make their way into a burning building in spite of steam and smoke and effect rescues that would be impossible without these devices.

The danger of suffocation is greatest where the fire occurs in the cellar, and in such cases even the firemen have to use the utmost caution. The smoke will often collect in such dense masses that any ordinary light would be extinguished, but this difficulty is overcome by the use of a zinc lamp invented by the chief of the department. Vienna is said to have one of the best organized and most efficient fire departments in Europe.

Electrical Utilization of Niagara.

It has been supposed that all the work looking toward the electrical utilization of Niagara was being done on the American side, and the truth is that so far the practical operations have been confined to the New York shore, where the borings have been steadily pushed for some time by a company which has \$7,500,000 behind it. But there is a Canadian scheme also on foot, and our cousins take so kindly to it that they have already invested \$200,000 in buying up some of the Niagara and Queenston Land and Electric Company's real estate. The broad idea involved in this Canadian project is to tap the Chippewa river, on the Canadian side, carry the water across country by canal, a distance of about two miles, to the Queenston Heights, and there discharge it into the Niagara river as it swirls along below, a drop of 320 feet being thus secured, which is double the drop obtained at the Falls. By this means the company expects to furnish not less than 100,000 horse-power at Queenston at the modest rate of \$10 per horse-power. A new manufacturing city of Queenston is to be developed on the magnificent highlands traversed by the canal, as has been said, the plan is looked upon with no small favor in the Dominion and in Europe. There seems, in fact, to be no good reason why it should not be carried out except the absence in Canada of a large market, such as is provided in America, for manufactures.

Automatic Adding and Recording Machine.

A remarkable machine, styled "the comptograph," has recently been patented. By its means figures may be placed in tabular order with the rapidity of ordinary typewriting, and their amount can at the same time be automatically added with absolute certainty. The machine is adapted to record and foot upright columns of figures, and it can be made with even a capacity of ten columns. The first two columns are used for units and tens of cents, the next three columns for the units, tens and hundreds of dollars, and the remaining three for units, tens and hundreds of thousands, the machine being thus adapted to all amounts under a million dollars. The comptograph is

THE MARVELOUS METAL.

ALUMINUM GRADUALLY CONQUERING SKEPTICS.

Its Weak Points Those of All Infancies--Already Enthroned in My Lady's Toilet--It is Pushing its Way Everywhere.

Aluminum in appearance is a white, shining metal of a shade between silver and platinum, and lighter than all other workable metals. It is found chiefly as silicate, in clays, slate, marl, granite, basalt, and a large number of minerals. Mica contains much aluminum, while rottenstone is an aluminum silicate, mixed with organic matter.

Lavoisier, the chemist who worked so laboriously for the scientific world, was the first to establish its probable existence. His death on the guillotine in 1794 cut short his investigations, however, or he might have made the discoveries that other chemists did twenty years later.

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Increasing Use of Rubber Tires.

The application of rubber to wheel tires has proved a great boon to the bicyclists, and the increase in this branch of industry is remarkable. There are 100,000 bicycles made every year in this country, and 40,000 more are imported. As all these have tires of the best rubber, it can be seen that a good percentage of the world's supply is absorbed in this way. Each tire weighs on an average between three and four pounds, and this together with renewals involves a yearly consumption of not far from one million pounds. The solid tire was first used, but the cushion and the pneumatic are now the popular forms. Each of these, however, is being further modified and improved, and the comfort of bicycle riding is being daily increased.

Does Wood Absorb Disease Germs?

A celebrated physician has remarked that every house ought to be pulled down at the end of the sixtieth year, as it has by that time absorbed all of the diseases of those that have lived in it. This idea is based on the theory that wood and plaster absorb gases, foul air, and feverish exhalation as readily as milk or water does. But, as it is not practical to tear down houses every half-century or so, some eminent authorities claim that all the wood used in the interior construction of houses, and all to the surface of plaster, should be thoroughly oiled or varnished, so that the power of absorption would be almost entirely destroyed. In the latter event the destruction of houses on sanitary grounds would no longer be desirable.

Scientific Hints.

A machine has been invented for picking hops, which it is claimed will do the work as clean and much more rapidly than it can be done by hand. The description is very simple, and it requires but two men to work it.

The improved sewing needle, recently introduced, secures the end of the thread in the eye, instead of having a running thread, as in the case of ordinary needles. One end of the eye is chisel shaped, with sufficient elasticity to hold the thread perfectly rigid.

A system of photographing in colors, following that of M. Lippman, proceeds on the theory that there are four primary colors--green, red, blue and violet. Four pictures are taken simultaneously by means of four lenses, in front of which is a screen of the color originally used. Pictures are produced which include the colors of the original.

Mr. Edison J. Haddock, of Big Springs, Tex., has patented an invention for arresting all sparks on locomotives and consuming all smoke, which well-informed railroad men say must undoubtedly soon come into general use. It does away entirely with the ordinary smokestack of the locomotive, and is said to improve the draft of the furnace.

The method of purifying water, invented by Dr. William Anderson, and now employed at Antwerp with success, consists in passing the water through a slowly revolving cylinder containing metallic iron in the form of scraps or filings. The estimated cost of purifying a million gallons in this way is about \$1.50.

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THE PERKINS WIND MILL.

NO DOUBT A FACT.

BUY IT! TRY IT!

After 23 years of success in the manufacture of Wind Mills, we have lately made a complete change in our mill, all parts being built stronger and better proportioned and a self-lubricating bushing placed in all boxes to save the purchaser from climbing high towers to oil it.

The reputation gained by the Perkins Mill in the past has induced some unscrupulous persons to imitate the mill and even to take our name and apply it to an inferior mill. We have secured the Perkins name and logo as a trademark, and we manufacture both pumps and windmills, tanks, pumps etc., and general Wind Mill supplies. Send for circulars and prices. Address: PERKINS, WIND MILLS & CO., 41-43 W. WABASH ST., CHICAGO, ILL.

Barber & Fowler, Sole agents for the Standard Perkins Mill. Unscrupulous parties are claiming to imitate the Standard Perkins mill, but have only an imitation of the Perkins mill. See Barber & Fowler, 225 North 10th St., Lincoln, Neb.

American Live Stock

COMMISSION CO. Room 34 Exchange Building. IS CO-OPERATIVE AND SELLS

Alliance Stock

CONSIGN TO ALLEN ROOT, Care of A. L. S. CO., SOUTH OMAHA, - - NEBRASKA.

It Will Prevent Hog Cholera.

Western Stock Food

Is the greatest discovery of the age for Horses, Cattle, Sheep, Hogs and Poultry.

It is a natural remedy and preventative of all diseases of the blood and digestive organs. It acts freely on the liver and bowels; leads to tone up the whole animal system and is a sure preventative of Hog Cholera. 1 lb. 50c and 5 lbs. \$2.50. Sold at 25c. and 50c. per lb. Manufactured only by WESTERN STOCK FOOD COMPANY, Bloomfield, Iowa.

The Iowa Steam Feed Cooker.

The most practical, most convenient, most economical, and in every way the BEST STEAM FEED COOKER MADE. A glance at the construction of it is enough to convince any man that it is far superior to any other. For descriptive circulars and prices apply to MASTERS STEAM FEED COOKER CO., Omaha, Neb. 301

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KENESAW, ADAMS CO., NEB. Breeder and shipper of recorded Poland China hogs. Choice breeding stock for sale. Write for wants. Mention Alliance.

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CLEAR AS MUD.

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"I am making a sympathetic harness for the polar terrestrial force," explains Mr. Keely the motor man, "first, by exciting the sympathetic concordant force that exists in the corporeal interstitial domain, which is concordant to it; and, second, after the concordance is established by negative thinking, six or eight months of this concordance, thereby inducing high velocities with great power by intermittent negation, as associated with the dominant thirds."

A bluish defined by Dr. T. C. Minor as "a temporary erythema and calorific effluence of the physiognomy, attologized by an overexcitement of the circulation, when in a predicament of unquietude from a sense of shame, anger or other cause, eventuating in a paresis of the vaso-motor capillaries, whereby, being divested of their elasticity, they are suffused with radiant, nerated, compound nutritive circulating liquid, repugnant from an irritated precordia."

FACTS AND FRIVOLITIES.

The official lists of Berlin are said to contain 60,000 persons named Schütz, Schulze or Schultze.

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A carrier pigeon, which had been bought at Charlestown, near Berlin, and taken to London, has reappeared in its old home, having most likely escaped and successfully undertaken the long flight back.

A Fort Worth, Tex., man says that he has the largest madstone in the world. It is nearly as large as a hen's egg and was taken, he says, by his father from the stomach of a white deer found in the Ozark mountains.

The newest gimcrack in the hands of the New York street peddlers is a little trick savings bank, a wooden box with a tiny drawer which opens to receive a coin, and loses the coin mysteriously whenever it is shut.

Doctors in Hudson county, N. J., have formed a protective association. All delinquents are wanted upon by the collector of the association, and if a settlement is not effected within a reasonable time the party is blacklisted.

According to Rev. C. E. Amos, president of the French Canadian college at Springfield, Mass., there are now about 50,000 French-Canadians in New England and New York, and 1,000,000 in the United States. The number is rapidly increasing.

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Henry Clews, the New York banker, devotes a great deal of time and money to beautifying his house. He is particularly well pleased with anyone who expresses a desire to go through it, and one of the first rooms he will take a visitor into is his bath room. He is said to have expended \$40,000 on the room. The walls, floor, bath, in fact, every part of the room is of onyx.

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WHEELER & WILSON NO. 9.

SEWING MACHINES.

The Song of the No. 9. My dress is of fine polished oak. As rich as the finest fur cloak. And for handsome design 'Tis just what you need. No. 9, No. 9.

I'm beloved by the poor and the rich. For both I'm impartially strict: In the cabin I shine, In the mansion I'm fine-- No. 9, No. 9.

I never get early or tired. With me I always am first; To hard work I incline, For rest I never pine-- No. 9, No. 9.

I am easily purchased by all. With installments least monthly do fall: And when I am done, Then life is bright-- No. 9, No. 9.

To the Paris Exposition I went Upon getting the grand prize intent: I left all behind, The grand prize was mine-- No. 9, No. 9.

Besides the Wheeler & Wilson we have cheaper makes, as low as \$20.00. LEISS' SEWING MACHINE EMPORIUM, Phone. 586. 122 N. 14th St. Lincoln, Neb.

DECORAH STEEL WINDMILL and STEEL TOWER.

The Decorah Steel Windmill has the most powerful moving parts ever developed in a windmill. It lifts the pump rod with equal ease at all parts of the stroke. The line of draft in lifting is kept directly over the center of the lifting shaft; the coil spring governor is in the most perfect position to regulate the speed of the mill.

We guarantee our eight foot mill to do the work of any ordinary ten foot mill. It is half the weight, costs you half the freight, and a much less expensive source of energy. It has to crank or wring pin, with "air leverage" to act against the weight.

Will Run a Pump in a Lighter Wind Than Any Other Wind Mill Co. Ever Made. "The World Do Move" See what we have to incurment before making contracts. We will stand by our old time tested

W. A. ROULDS & CALDWELL CO., Mrs. 22 & 24 N. Canal St. Chicago, Ill.

POMERENE & COOPER.

Agents for the CELEBRATED WAUPUN WIND MILLS.

PERKINS MILLS, Pumps of every description from the old style plunger, wood and chain pumps to the latest double acting force pumps.

DEALERS IN Pipe, Fittings, Tanks, Rubber Hose and Wire.

Mc DONALD Brass, Brass Lined and Iron Cylinders.

At prices to suit the purchaser.

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CAPITAL NATIONAL BANK.

LINCOLN, - - NEBRASKA

CAPITAL, : : : : : \$300,000.

C. W. MOSHER, President. H. J. WALSH, Vice-President. R. C. OUTCAIT, Cashier. J. W. MAXWELL, Assistant Cashier.

DIRECTORS: W. W. HOLMES, D. E. THOMPSON, C. W. MOSHER, R. C. PHILLIPS, E. P. HAMER, C. E. YATES, A. P. S. STUART.

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LINDELL HOTEL.

ALLIANCE HEADQUARTERS.

CORNER 13TH AND M STS., LINCOLN, NEB.

Three blocks from Capitol building. Lincoln's newest, neatest and best up-town hotel. Eighty new rooms just completed, including large committee rooms, making 125 rooms in all. A. L. HOOVER & SON, Props.

ELITE STUDIO.

The finest ground floor Photograph Gallery in the State. All Work in finest finish. Satisfaction Guaranteed. 226 1/2 11th street.

T. W. TOWNSEND, Proprietor.

ECLIPSE STUDIOS.

We have opened a new Studio at 1222 O street, up stairs and will be pleased to have the citizens of Lincoln call and examine our work. We make a specialty of ARISTOTYPIA--a new process of Photography, and call your special attention to the fine results we are obtaining. With every dozen Best Cabinets we will present customers with a fine life size portrait. This offer will hold good but a short time to introduce our work, so avail yourselves of this great opportunity.

ECLIPSE STUDIOS, Lincoln, Nebraska.