

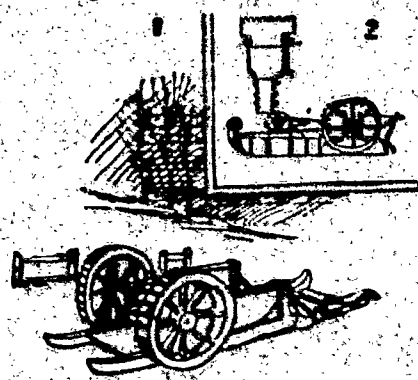
## INDUSTRIAL WORLD.

### SCIENCE AND PROGRESS IN MANY LANDS.

**A Propeller Sleigh Among the Latest Devices for Lessening Labor—Brooks' Comet of 1893—Wonders of Chemistry—Current Notes.**

#### A Propeller Sleigh.

A sleigh designed to be readily propelled and steered over ice and snow, either by the occupant or by a suitable motor, is shown in the illustration, and forms the subject of two patents recently issued. On bearings which permit of vertical adjustment at each side of the sleigh are journaled short shafts carrying paddle wheels of novel construction, adapted to engage the snow or ice to propel the sleigh forward or to steer it. The shafts may have suitable crank arms for propelling the sleigh by hand, or they may be connected by pitmen with a motor, and the paddle wheels have spokes, each having its outer end forked, as shown in Fig. 2, the transversely extending paddles being made of sheet metal, with



PROPELLER SLEIGH.

their outer edges serrated. Near the forward end of the sleigh, on each opposite side, is a curved rudder held normally out of the snow by a spring, but by pulling on a rearward extending cord a downward swinging motion is given to one of the rudders to move its rear curved end into contact with the snow or ice, to steer the sleigh to the right or left as desired. To conveniently pass the sleigh over ground a pair of front wheels is provided, their axes journaled in pivoted side arms and looked in places by a pin, the arms being swung downward when it is desired to wheel the sleigh over the ground, the paddle wheels being at the same time locked in their lowest position, whereby the sleigh is lifted entirely off the ground. When the snow or ice is again reached, the arms carrying the front wheels are swung into their upper position and the paddle wheels are raised to the height best adapted to effectively engage the surface of the ice and snow. The invention also provides for the convenient and ready attachment to the main runners of different forms of auxiliary runners specially adapted for running over ice or hard frozen ground or loose or wet snow.

#### Brooks' Comet of 1893.

From the Scientific American: The announcement of the discovery of this comet on the morning of Oct. 17 has already appeared in the Scientific American, with the promise of further particulars when sufficient observations had been secured.

The comet was observed on four succeeding mornings, before clouds and the full moon interfered, and these observations showed that the comet was moving in a northeasterly direction, with a rate of three-quarters of a degree daily. The comet passed perihelion about Sept. 20, so that theoretically its brightness should be decreasing, but it is holding its light well, and on the morning of Oct. 22 it appeared brighter than at any previous observation. The tail then had a slight curve near the head and a faint auxiliary tail was seen branching from the main tail at an angle of thirty degrees.

The accompanying drawing shows the normal appearance of the comet when the tail was straight and as viewed with a power of forty diameters in the telescope. The tail could be traced to a length of three degrees. As the comet may be followed for some time with moderate sized telescopes, I send herewith a few positions, from which the course of the comet can be plotted to the end of the month or longer.

R. A.	Decl. North.
Oct. 19.....	hour. m. deg. m.
Oct. 20.....	18 24 40 20
Oct. 21.....	18 35 44 40
Oct. 22.....	18 50 49 12
Dec. 1.....	06 53 33

From the above it will be seen that toward the end of November the comet becomes circumpolar, and hence ob-



THE BROOKS' COMET OF 1893.

servable all night, and on Nov. 27 it is just at the end of the tail of the Great Bear. WILLIAM R. BROOKS. Smith Observatory, Geneva, N. Y., Nov. 8, 1893.

The "Pallograph." The name of "Pallograph" has been

given to a newly invented German apparatus founded on the principle of so hanging a weight that, in consequence of its inertia, it takes no part in a given direction, in the tremblings and oscillations of the point to which it is suspended. In a series of experiments with this device, made on board a twin-screw vessel of the German navy, it appears that the vertical vibrations always attained their maximum when the horizontal were at their smallest, and vice versa; this phenomenon was peculiar to twin-screw vessels only, and is explained by the difference in the number of the revolutions of the two engines and the reaction of the masses of the moving parts. The horizontal direction was exactly the reverse, and the action of the masses of the heaviest moving parts of the engines—neutralized each other because they were of equal size and acted in opposite directions. The older passenger steamers had much smaller dimensions, and the engines, as is well known, ran at much smaller speed than those of today. The smaller the length of the ship the greater the number per unit of time of its vibrations. With the increase of dimensions, the period of the vibrations became steadily longer, while the necessarily greater engine power which was requisite compelled the increase of the number of revolutions.

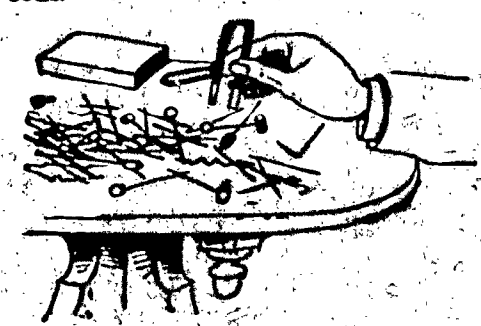
#### Chemical Experiments.

Some recent results in French chemical experiments have attracted considerable attention, from the fact that, by new methods, a temperature has been obtained far lower than hitherto known, namely 273 deg. Cent. below zero, or 491 deg. Fah. below the freezing point of water. This temperature was obtained, it seems, by using a series of cold wells according to a simple and original plan. In the first of these wells there was used a mixture of carbonic acid and sulphuric acid, and by their evaporation, a temperature was secured of 110 deg. Cent. below zero; in this cold well was then immersed a condenser in which the vapors of a still more volatile liquid, protoxide of nitrogen or ethylene were condensed, and thus reached 150 deg. below zero; in another well 210 deg. was marked, and again 273 deg. In the case of these last-named wells nitrogen, carbonic oxide, marsh gas and atmospheric air under a pressure of forty atmospheres, were employed, and the instruments with which measurements of the lower temperatures were made consisted of hydrogen thermometers graduated by comparison with sulphuric ether instruments. It is thought that the low temperatures obtained by these experiments will lead to some new chemical combinations of an important character.

#### Magnetic Jack Straws.

The illustration below shows one of the most ingenious devices for the amusement of children to be found this season among the various toy stores and elsewhere.

It is a game that will not only amuse children, but affords an endless source of amusement to adults as well, and can be played by any number of persons.



MAGNETIC JACK STRAWS.

The game is put up in a neat little box, and contains a large number of metal straws of various colors, crooked, and angled, and crimped, and some of them having little heads of colored wood in various forms, together with two magnets.

The object of the game is to withdraw a single straw from the bunch by means of a magnet and without touching or disturbing the other straws.

#### For Duplicating Writing.

An Italian inventor proposes a novel method for duplicating copies of writing. The mechanism for this purpose is provided with two pens, supported by a framework in such a manner that their points are always in the same horizontal plane; a pen at the right is intended for the operator or writer, and the least stroke made by this pen is at the same time duplicated by a pen at the left. The framework is so jointed and hinged that the pens can be moved in any direction, and a counterbalance takes the weight of the frame from the hand, so that the act of writing is made almost as easy as with the usual pen and holder. Two ink wells are provided at the base of the stand, and the dipping of a pen in one well causes the pen to dip in the opposite well; and when the two sheets of paper to be written on are placed parallel to each other and secured the remainder of the work is as simple as ordinary writing. The instrument is designed in especial for furnishing duplicates of contracts and of those legal and other documents which it is often desirable to have duplicated not only in words but also in the paper and handwriting.

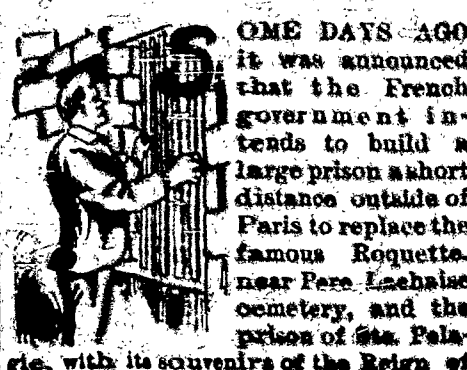
#### For Preserving Wire Ropes.

For preserving wire ropes carried under water or under the earth's surface a mixture of thirty-five parts of slaked lime and from fifty to sixty parts of tar is found thus far a very satisfactory means, as compared with other processes which have been resorted to. The compound is boiled and applied hot. For dry-lying cables a stick mixture of graphite boiled in tallow and some of crude linseed oil and vegetable tar have both proved a suc-

## HISTORIC PRISONS.

### FRENCH BASTILES TO THEIR EARTH AGAIN.

Famous Old Roquette and St. Pelagie Seen for the First Time—Relics of the Terrible Commune—To Be Replaced by Churches.



ONE DAY AGO it was announced that the French government intends to build a large prison at a distance outside of Paris to replace the famous Roquette, near Pere Lachaise cemetery, and the prison of St. Pelagie, with its souvenirs of the Reign of Terror. Every American visitor to Paris has seen La Roquette, which is called known as the place outside which the guillotine is erected whenever there is an execution in the French capital.

It was in the street in front of La Roquette that Pranzini the murderer, had his head cut off in 1877. The following year witnessed the execution of Prade, the infamous assassin of women. Eyraud, the stamper, was a recent victim of the guillotine in the Place de La Roquette.

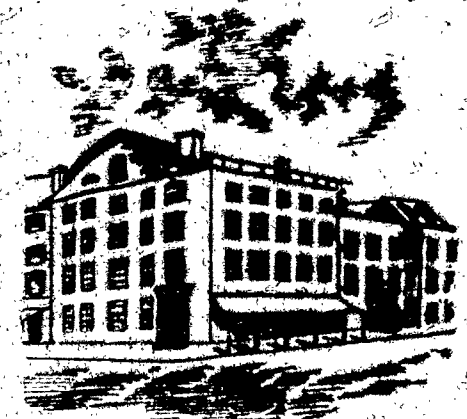
It starts with the public prosecutor, and not with the judges, in France to determine in what prison a delinquent sentenced by the courts shall be confined. Prisoners condemned for crimes of comparatively minor importance often obtain permission to pass the time of their sentence in La Roquette on condition of paying 10 cents a day to the state. The discipline of the prison is not rigorous.

At the end of one of the long corridors is the narrow prison which served as a place of confinement for Mr. Darby, the archbishop of Paris, who was shot with the rest of the hostages by the communists in 1871. Since that august prisoner was inclosed within the four narrow walls the cell has never been entered by any criminal. It has remained intact. The bed is just as it was when the great prelate was called to meet his fate. The same sheets have been left, and the iron cross which closes the apophore into the cell is still unannounced by the Latin words, "Vilae rober, mentis salus," written in pencil by the archbishop, who occupied some of his weary moments in sketching the scourge, the sponge dipped in hyssop and other instruments of the Passion on the door of his prison.

The small winding staircase may still be seen by which the host ages went down when they were summoned to meet the firing party in the yard of La Roquette, where the feeble old prelate, who had overtaxed his strength, was compelled to cling to the arm of his companion, M. Bonjean, to avoid falling. The spot is still pointed out where the five hostages fell; where Mr. Darby called down forgiveness for his murderers, who knew not what they did. The mark of the bullet which struck him, which records one of the most sanguinary acts of the Paris rabble. Evergreen mark the place where the men fell who died victims of its blind fury.

There is an old prisoner in La Roquette who remembers sitting in the cell of Billoir, the noted murderer, when the venerable Abbe Crozes, the chaplain, and Beaumesne, the governor of La Roquette, entered and informed him that Marshal McMahon had rejected his appeal for mercy, and that the sentence of death passed on him for the murder of Marie La Manche was about to be carried into execution. The murderer, who had been playing cards all the evening and who had expressed his confidence in the clemency of his former general, was terror-stricken. His chest heaved spasmodically, and a strong dose of opium had to be given to him before he could summon up courage to remember that he had been a soldier and had won the military medal.

Another old prisoner tells an incident connected with the Commune, which is recorded by Abbe Faure, the



OLD FRANCISCAN TAVERN.

present chaplain of the prison. It relates to the Rue Haxo affair at Montmartre. The persons who were shot in that street were eleven ecclesiastics, thirty-seven gendarmes or municipal guards and four civilians. On May 26, 1871, they were marched out of La Roquette prison toward Pere Lachaise. Behind them was a howling crowd of drunken and delirious demons, who shouted "Down with the gendarmes and the priests!"

The communist mayor of Belleville, a ruffian named Ravier, ordered them to be taken to the fortifications and shot after they had been allowed a quarter of an hour to make their wills. While he was talking one of the priests, who was over 80 years old, was struck several times. The communist, however, thrust for blood, and when the doomed man had got as far as No. 45 Rue Haxo they were ordered like the "jail" there, the story was

was on general order, such as a kick as they passed. A man of court-martial was held by the chest, but before its termination a girl of 18, who acted as vivandiere in a communist regiment, shot two gendarmes, a boy shot another, and the butchery began.

Recently the Franciscan monks of Paris bought the ground where the members of the order were shot by the communists on that occasion for the purpose of building a chapel over the spot.

"The criminals at La Roquette have no complaints to make," writes Abbe Faure, the chaplain. "They are treated with fraternal solicitude, and legend says that those who have grown old in houses of detention and have made the round of every prison in France have shown the greatest unwillingness to leave this place when the law has declared them free. There are several old men about the place without family ties, who, forgetting the world and forgotten by it, have managed to obtain some kind of employment so as not to be compelled to leave the prison and to warrant their being fed and lodged at the expense of the country."

"The name of one of them is mentioned as a terror to any one who might be tempted to betray the secrets of the prison—a certain liberated criminal who had some small duties assigned him so that he might not be thrown on the street with his gray hairs and infirmities. He managed to make a good living by giving hints of information to journalists when any special criminal occupied the condemned cell. He announced the appearance of the mounted municipal guard, who always deputed to bring from the ministry of justice that sealed notice which leads to the guillotine being put up on the Place de La Roquette."

It was in St. Pelagie that the last batch of suspects during the reign of terror heard the joyful news of the downfall of Robespierre. There is a tradition that they first guessed how matters were going outside by hearing a jailer say: "Now, then, Robespierre," as he gave a savage kick to a dog.

An interesting question is raised in Paris by two men who have started the business of polishing up old playing cards so that they may be used again. They charged eight cents for cleaning and a pack could be cleaned three times. The government has stepped in and seized the plant of the three factories, on the ground that the renovated cards should pay the usual excise tax imposed upon new cards. The card cleaners are resolved to fight the case in the courts, as the business was very profitable.

#### READY READING.

More people die in the spring than in any of the other seasons. A new India rubber tree has been found on the island of Madagascar.

There is a falling off in the number of children attending public schools in New York.

The shortest names mentioned in the Bible are Al, Ar, Ed, Og, No, On, So, Ur and Uz.

A Shawnee lad, who entered the Indian school in Virginia as Tommy Wild Cat, remains under the disguised name of Thomas W. Carr.

A very sad death is that of Miss Annie Lofton of New York, who expired in the arms of her lover two nights before her wedding day.

It is stated that a pail of water containing a handful of hay, if placed in a room where there has been smoking, will absorb all the odors of the tobacco.

A movement has been inaugurated at Scranton, Pa., to send a choir of 180 Welsh-Americans to Wales next year to represent the United States at the national eisteddfod.

The most highly prized piece of ancestral silverware preserved by the Lees of Virginia is a mammoth silver cup, which even when empty is a burden for two stalwart arms to lift up.

The selling of scattered buck's heads is just now one of the industries of the North Woods. The heads are sold at 25 cents, and it costs 210 or more to prepare one for use as a hat rack or a wall ornament.

The musical instrument called the Jewsharp, once very popular among the negroes of the South and mentioned by a doubtful chronicler as one of two instruments that Connecticut Puritans might lawfully play on Sunday, was really not named in honor of the Jews. It was once called the Jewstrump or Joy trumpet, and the name Jewsharp is the result of a popular misapprehension.

Furniture is now being made out of the deepest canyons of the Southwestern plains. The stalks are split, seasoned and rolled into boards. The result is a natural siliceous, very delicate in appearance, but very strong. J. N. Blundin of Highspire, Pa., offers the readers of the Philadelphia Ledger the following cure for kleptomania: He says by using a half-teaspoonful of baking soda, dry, the ailment will entirely disappear.

A most curious phenomenon—the action of solids held in suspension in moving water—may be practically demonstrated, says M. Gallot, by taking a bottle of white glass about three inches in diameter, and with a flat bottom, putting into it to the depth of about one-fifth inch some fine and very clear siliceous sand, such as will not interfere with the transparency of the water, filling the bottle with this and corking it so as to exclude all air. On giving the bottle a rapid movement of rotation around its own axis, either by placing it on a turn-table or by suspending it from a previously well-twisted cord, all the sand will be projected upon the cylindrical sides of the bottle by centrifugal force.

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— OF THE —

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