INDUSTRIAL WORLD.

LATEST DEVELOPMENTS IN SCIENCE AND INVENTION.

A Wonderful Press for Printing Pine Engraving -A Velocipede for Use on Stow and Ice Same Wonders in

Press for Copper Plate Printing. ings requires very particular care that from the calandrias are made very up to the present has not permitted of large and are connected to special fatracting the work to a machine, the water and vapor foceivers; there is hand of the workman alone being also an ingenious arrangement of judged espable of giving the inking pipes and cocks connected to the main and the wiping of the plate the finish condenser, and by means of which necessary for the obtaining of a good proof. As well known, what is called copper plate engraving is done upon by drawn off, the accumulation of plates of copper, either by means of such game being one of the sources of squafortis or the grayer, and some interruption to the free distribution times by the o two means combined. and inculation of the vapor steam in It is the hollows in the plate that the calendries. The usual back precgive the black lines, the parts of at sure or exhaust ateam of three to five tacked being reserved for the lights. pounds per square inch is ample to It is necessary, then, in order to ob-tain a good proof, to apread the lak matic in its action. Both labor and very uniformly over the lines of the fuel are said to be largely saved by engraving, to carefully wipe the non-the use of this apparatus, chigraved parts and a terward to give a very strong pressure, in order that the paper may take up the ink in the hollows. It will be understood from this very brief description of the operation that this kind of printing un hand, it will take considerable time a new and attractive industry. The and the post will be very high. That misthed, as thus perfected, and which

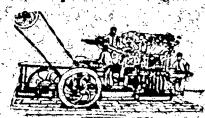
the latter is produced by reliefs. Other The application of the color can be soprocesses, such as engraving upon complished in several ways, socording wood, sto, permit of this kind of to the effect which it is desired to proprinting; but what has been long duce, and in one of several colors. It sought for in copper plate engraving can be done by a machine, so as to parts, so that the natural color of the himself on the discovery of painted printer done by a machine, so as to parts, so that the natural color of the himself on the discovery of painted inather appears, or printing with a rereduce manual la or. Tentatives leather appears, or printing with a re-have doubtless been made in this di- serve composed of four parts of virgin rection for a long time. We may wax, four of castor oil, one of torax mention especially a machine con-structed in 1852 by R bot Neale, an gredients—all of course of the purest Englishman. Wany others also have quality obtainable—being mixed tosought a solution of the problem, but gether. The castor oil may be rewe cannot find that any have been placed by any mineral or vegetable five different points. They measure successful. It was at the exposition of 1889 that the first machines of this kind were presented that gave satis-

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PRESS FOR PRINTING COPPER PLATE.

ENGRAVINGS. by Mr. duy. Since that epoch however, we have not as yet seen them much employed. One of them is in operation in Berlin and another at St. The wint and another at St. The Petersburg ... As in all mechanical prosses, the

machine consists of a table, upon which is fixed the type to be reproduced. This table has a to and fro motion, during wiring the type is linked in passing under rollers prepared for the purpose and then presents itself under a cylinder, which carries a sheet of a cylinder, which carries a sheet of paper, and bears strongly against it is afety bloycle, and driven in the same is order to give the impression. The way, but which is acapted for use on usw and interesting part that consider the copper plate press is found interesting. The irane is preferably toward the right of the illustration. At the upper part are seen rolle a. L. its rear and terminates in an axle on each carrying a woundup band of which are pivoted bearing blocks secleth. The extremity of this band cured to the top of a runner a igning passes under a horizontal rod, F, and with the driving wheel. On the front afterward winds up under another and of the frame in a ball bearing is cylinder not visible in the figure. The a sleeve through which extends the rod, E, receives by means of disks. C, steering post, at the lower and of provided with came, a rapid to and fro motion in various directions, so as to abling it to be easily turned in steer-

Some of the common ideas concerning as beston appear to have resulted in appear from both members of the in mistakes of a serious practical nat fork in which the wheel is journaled, ture. Thus, the usual conception that are posts connected by a stiff flat it is in no wise affected by heat is true spring with the frame, the spring beonly to the extent that, though infusible except at very high temperature, a depending link pivoted to a lever it is a fact that only a very moderate fulcrumed on the back part of the degree of heat heating to low redness frame, at a point lower down, the in a platinum, crucible, for instance forward end of this lover being held is required to entirely destroy the flexibility of the fibre and render it so whereby the spring is relied or brittle that it may easily be crumbled lowered to illt the fram; of the drivbetween the thumb and finger. Another mistake is that relating to its high non-conductivity or power of re-sisting the action of heat—the assumption being that because asbestos is infusible, it must, of necessity, bea good non-conductor. The contrary asser-tion to this is made and proved on good authority, namely, that by plac-ing a vessel of water on a sheet of asbeetos cardboard, and applying heat from below, or, more simple proof still, by placing a piece of wood on a sheet of subestos miliboard on a hot stove. If, however, asbestos is teased out and worked into a fuffy mass, there is thus obtained a non-conducting material, but it is the air enclosed by the fibres that is the real non-conductor, the asbestos serving simply to entangle the air.

Magnetium of Irem.

Avery extensive series of experiments has lately been conducted by Prof. Liversidge of Sydney, New South Walsa, with almost every description of iron ore from all quarters of the globe, and with other bodies, such as apenel, garnet, serpentine, bernite, lin-zione conglomerate, artificially prepared ferric hydrate, jewellers rouge, chrome iron, franklimite, hornblenschist, and dufrenite. Samples of each of these were ground in a porcelain morter and crushed to a fine powder in an agate mortar. An elec-tro-magnet, capable of lifting eighteen ounces, was employed; and in all cases but one, viz pyrrhotite, where the mineral showed signs of a magmetic property, varying amounts of magnetite were separated out of the powder by the magnet. The portions seperated by this means were in every case analysed chemically in order to make sure that they consisted of magnotite; and thus the magnetic properties of specimens of chrome from, Franklinite, spenel, garnet, some hometites and other minerals were found to be entirely due to the gree-

used through their many and only pyrrhotite shares with magnetite the inherent property of being attracted by the magnet

The Sugar Industry.

The sugar interest, commercially and industrially considered, has been enhanced in value by the introduction of some highly perfected machinery, the latest example being an evaporat-ing apparatus for insuring complete and apid circulation of the cair juice, combined with the most effective distribution of the steam for heating the The printing of copper plate engrave juice. The condensed water outlets gases of any density, lodging in any part of the calandrias, are immediate

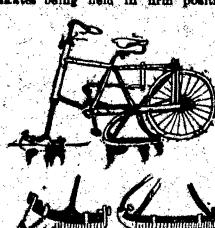
It appears that the experiments for some time past made in France for obtaining a satisfactory method of color never be done with the lext. It will printing on leather have been so far be seen, besides, that if it is done by successful as to open up a prospect of is wby in books, copper plate engravity described in its essential details in ingrare always printed outside of the the columns of L'industre Textile, is text, and this increases the price of early practicable. The skins must be free from grease and if they have To succeed in printing along with been prepared with tannin are first like with Homer's city. Due allow- crown prince of contume the text is not to be thought of, since atcepted in a preparation of suman ance made for postional license the Denmark, the youngest brother of the

> To Replace the Switching Rogins. An expert in railway metters declares that the day is not far distant when the switching engine will be en mented stones. The walls are in-tirely done away with, its place being climed, the courses of masonry sloping taken by the electric capstan. The latter is already in use to a certain ex- to give solidity to the structure. An tent on some of the Pennsylvania lines, suggested a tower to the northeast has The motor which actuates the capatan been unedvered to a height of twentyby means of gearing, runs at the rate of some twelve hundred revolutions. minute, and the gearing, motor, and switch of the apstan are all contained in a water-tight iron case, the top of which comes flush with the ground; the motor are carried through an iron-

produce the effect of the band wiping ing. The driving wheel has a thin with a cloth.

Asheston.

Asheston. ing clasped near its center by pins on at the desired beignt by a rack bar, ing wheel and thus regulate the height of the wheel in relation to the rest of the machine. The saddle is carried by an arrangement similar to that in use on the ordinary safety bicycle. When the machine is to be need on ice, skates, as shown at the bo tom of the picture, are attached to the front and rear runners, the akates being held in firm position



SNOW AND ICE VELOCIPEDE.

spon the runners by lugs, danger and thumb screws, while the construction admits of their ready attachment or removal. The machine may be very easily and rapidly driven and perfeetly controlled.

Meldory. Teacher-Define memory. Dull Boy-It's what we always has till we come to speak a prese.

Not Very Mecherly. Little Johnny-I guess Tommy Dodd's mother is his step mother. Mamma-la shot

Little Johnny-Sho mus be couse

who never she may she'll tell his father

on him, she siways does.

ABOUT ANGIENTILIOS

EXCAVATIONS AT TROY PROVE MYTH A REALITY.

The Walls of the City More Recently Been Blackened by Exception-Dr. Despirate ancres in Clearing Away Alba Mist



tions at Troy, or like, under the diother members of

the staff furnished by the Gorman government has left. It will be remained by those interested in the maxion to know what young prince maxter that Dr. Schliemann divided the artificial mound of Himarlik into six superposed cities prior to Mallenia, Macedomian and Roman occupation. Homer's Troy he placed in the second of their queen, and that the Gorman comparison to know that young prince it is not that the Gorman comparison to know that young prince of the comparison to know that young prince it is not that the comparison to know that young prince is a superior that the comparison to know what young prince of the comparison to know what young prince will be shown to know what young prince is a wall to be shown that young prince of the comparison to know what young prince will be shown to know the future of the comparison to know what young prince will be shown to know the future of the comparison to know what young prince will be shown to know the future of the comparison to know what young prince will be shown to know the future of the comparison to know what young prince will be shown to know will be shown to kno 0,000. France has been exhausted, and city, where the golden areaures were some of Prince Alfound. Many attacks were made against this theory, the forcest by will be chosen but this photon would schilemann's six cities were nothing more than a large crematory used for a great number of ages. A, conference of agentia, invited by Schliemum to Historilk in jects. Other prin1863, condemned Bottleher's theory,
Still skentialism swinted in the minds Still elepticism existed in the minds mentioned are, one QUEEN WILMELMING of several as to the identity of Hisser of the sons of the IN NATIONAL doled bein bes stole and and brick war is of the second city mover imap red the well-built lofty towers constructed by Neptune and Apollo."
Dr. Dorpfeld has been singularly

with that found at Mycene, the principal synchronism of the two ancient sites suggested the clue to Homer's

The "broad and very fair" walls of the sixth city have been exposed at twenty feet in breadth and are faced. with well-drawed hard limestone blocks, besutifully stied. Where not worn a knife cannot be introduced between the interstices of the uncemented stones. The walls are ininward atright angles with the face five to thirty feet, while the base has not bean reached.

Corroborative and important evidence of synchronism with the sixth city is also furnished by the gray-col-

In the center of the accompanying illustration in the angle of a Trojan tower: to the left a Roman wall, with builder's lettered stonen 'probably a repaired Macedonian building, abuta disgonally on the Trojan siructure; to satonished firemen at first paned, but the right a rough Hellenic atsiresses and wall sensing spainst the others their whips, and to e away after the to the right the Trojan tower. Still farther the fire. Interested stresses delicated the Trojan west many their whips, and to e away after the to the right the Trojan west many the fire. to the right the Trojen wall reappears in similar conjunction with the Ro-

In the trench made some years previous to the commencement of Schilemann's excepations the lettered wall aguired was discovered and followed. Had the trench been advanced another



BECENT EXCAVATIONS AT THOY. would have come to light, and Schliemann's "liles" and "Trois" would The Chronicles of the World's Fellies

have been written otherwise. The evidence in hand proves that Homer was not guided by tradition slone—the walls of liles were visible in the poet's day (minth century B. C.), also in Macedonian and Roman times. Now can the scene be realized as it a delightful represented itself to the immortal poet's treat from the meninetion.

The chronological date of the sixth ing size pleased city may be placed approximately to him quite to much the twelfth century B. C. Several while he was there antecedent centuries may be added to as the visits from the age of the first city, which is congood Prof. Bott, temporaneous with the attlers on privy councilior of A of Protesilans. These form the earliest cridence of neolithic man on the Heilespont Paleolithic man, relies of the most learned of the River Rhudius, 120 gravel beds of the River Rhudius, 120 state. What American who has been found in the glacial period. Between the Hott? His appearance is delighted to the manual of the most learned of the most

Wedlock and Rappiness.

It is very often said that when a

logical to preach to lovers that they should generously retrain from re-

quiring encrifices of each other. This is far more consistent with the only idea of marriage which makes it stiructive. To paint it as consisting mostly of "eacrifices" which single se would not have to make in to remder it repulsiya.

The accompany ar portrait of the

a part of Holland, wearing the curious gold head-dr. se, covered with lace, wors by ladies of soble birth. The beautiful ernaments across the forehead are of diamonds set in gold, as are also the a de praumente

Guesa Wilhelmina is a very pratty girl, with bright-blue eyes, and a particularly sweet expression of counternames. She is fond of all out-of-deer nection of Dr. W. mames. She is fond of all out-of-deer Dorpfeld, director pleasures, and rides and drives every of the there as school of archa o horses, oats, and birds of all hinds; logy at Athena, as and abo has the faculty of attracting sisted by Dr. A all animals to her. Queen Wilhe mina Bruckner and colebrated her thirteenth birthday en the line of August as ausivement the expedition, that was kept with great rejoioings all have been brought over the kingdom of Holland. Her to a close for the majery looks much older than she sobliemanns fould of really is, and more the a girl of 16 then only it.

queen of Wurtemberg, Prince Maximilian su Schaumburg-Lippe, and Duke Heinrich of Meek-

lemburg-Hob worls. The young qu on will, like Queen Victoria, marry young, and in all probability her engagement will be announced when she has completed her seventeenth year.

A MOVABLE FIRE.

Strange Rome Rosently Witzmood in the streets at Mt. Louis.

It appears that in some nort of civic demonstration in Ht. I ouls the other day-perhaps the celebration of the founding of Chicago, or something of that sort-two immense floats, representing respectively the Monitor and the Merrimac, were in the procession. It was an avening parade, and in some way while passing down Grand aver nue the unformante Monitor cought fire. A though ful citizen turned in an alarm, and the fire department respended with promptness. It hap-pened that the captain of the Monitor was a men in the mary, haring hefore hern in the merchant service as commander of a track, and, bear-ing the noise of the engines behind cludes that the time for flight had come, so bitting the mules a creek with his whip he went tearing away: at the rate of twenty knote an hour, foot and small boys brought up the

How long this thing kept up we are not told, but we are assured that Hampton Roads on the last day's fighting was a quiet place compared with Grand avenue, it was evidently the object of the grafty Monitor sommander either to get out to see or to run in under the guns of some friendly fort. But the St. Louis are departm nt, though a customed tolying inwith a single bound, showed that it could course a fire wish necessary. it was used to old-fashioned fires, but ran, the departmen was willing to do to at it could to catch it and hold it still wolle it put it out. So while the M nit r s.o. d out to sea, carrying every pessible pound of mule, the engi es and hose our a foll wed close in her wake Finally, the ill-starred craft being burnt to the water's edge, the fire went out, and the bulk drifted down a sid- street with the noble commander clinging to a floating mule. The fire department returned to head-

EDMUND VATES.

an invalid at Marionbad.

Edmund Yates, cheery chronisler of the foliles and folbles of two genera-tions, has been taking acurs at Marienbad, and found is

world's cares. Noth-

in the glacial period. Between the Bott? His appearance is delightful; two people there is an immense gap of his manner charming; his diagnosis time which discovery has not yet careful and searching. This is the list bridged. which he gave Edmund Yates: "Eggs you shall est, but boiled and soft; nor fried nor roast, I wish not Butter and cheese and fat. I wish not young couple get married they should walk, you shall a little, yes, do it with a perfect understanding that only by mutual ascrifices can their married life to create the parties of the himself, which is knock their married life to create a queer cleal?) meel at midday, and a cault

This has always struck uses queer sounding proposition. Lovers look upon marriage as anything but a sacrifice; and if they did regard it as another name for a life of mutual sacrifices, very few would enter into such a relation. It would seem more mended the patient to "plast" kinnelf, medico so espitally played by Arthur Cacil in a recent comedy, who recommended the patient to "plast" himself, to "polt" himself, and to "roll his pelly mit a clove!"

> She-I hope that poor Mr. January inally died a converted man. He I'm afraid not. He was a bigu-mist and had promised both his wives to meet them above.

young queez of the Netherlands is one of the last taken of h. r. maje ty, and represents her in the national dress of

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