

## FIVE HUNDRED YEARS OF PRINTING.

All civilized nations took part in a great festival at Mainz, Germany, on Saturday last, in commemoration of the five hundredth anniversary of the birth of Gutenberg. Robert Hoe, the famous creator of printing presses, gave out many interesting facts about the advance in the art of printing and its future possibilities. Mr. Hoe is having a special medal prepared to commemorate Gutenberg's five hundredth birthday anniversary.

BY ROBERT HOE.

Any article which would attempt to cover the ground of the progress which is being constantly made, and what may take place in the development of the arts connected with printing, could not be recorded without an expenditure of a great deal of time and more space than can be allotted in an ordinary newspaper article. Volumes could be written on the subject.

One thing is certain: that the fundamental principles upon which printing is executed at the present time are the same as those instituted, practically approved and adopted by Gutenberg and his assistants and successors. The foundation of all printed reading matter was in the matrices from which types were cast and whether these were cast a single type at a time or whether cast in several separate words or lines, as is often done, the principle is still that of the individual type with a metal

body, susceptible to the necessary combinations. Nor has any process of printing from plates or sheets of metal by transferring designs upon them proved more than partially successful. The only invention of importance which has survived and which has proved successful during the many years has been that of Senefelder, who originated the art of lithography. This, of course, involves either the writing upon the stone of the design or matter to be printed or the writing of it upon paper and transferring it upon the stone.

The process was, of course, a distinct departure from the art of typography as developed by Gutenberg and his followers, and as practiced today. It would never come into general use for any other purpose than the printing of designs of various kinds; nor have any of the imitations of the process of transferring on stone, either upon prepared zinc or prepared metals of any other kind, proved successful in competition

with the movable type.

No perfect metal has yet been discovered upon which transfers can be made for surface printing which shall give the ability to take from it any large number of impressions.

The temptation, of course lies in the facility with which photographs can be transferred or etched upon a flat metal surface; but in this case the plates cannot be duplicated one from another, as the forms of type may be duplicated by means of the matrix and the cast plate.

In fact, it would seem safe to assert that the only really great invention in the art of printing itself subsequent to the time of Gutenberg—and in this we do not have reference to the presses or the mechanical appliances for taking impressions, but to the art of making forms from which to print—has been that of making stereotype and electrotype plates, which is the taking of the impression either in the prepared matrix of paper mache or the mold of wax and casting

the metal upon the former or precipitating the copper shell upon the latter.

Without these the multiplication of printing forms for the purpose of publishing newspapers and books in large quantities would have been impossible, and the modern newspaper would not have existed, except in smaller and expensive editions.

There would have been no necessity for fast presses, and papers with a circulation of 100,000 to 1,000,000 copies per day would have been unknown.

Therefore, in commemorating the anniversary of Gutenberg's birth and in a memorial of this man whose name is imperishable, that of William God of Edinburgh should not be passed by in silence. It was he who, I believe, first conceived the idea of making stereotype plates, and brought the process to successful operation.

Of course, there have been many improvements made upon his original clay or plaster molds and methods, but to him I think may be justly attributed the invention of the stereotype plate. It appears that as far back as 1725 he began his experiments. After several years of labor and discouragement he succeeded in obtaining a privilege from the University of Cambridge to print Bibles and prayer books; but the pressmen of those days were as jealous of the prerogatives as now, and in the absence of the masters they, "in the infancy of the compositor," injured the plates so that they could not be used.

It is said that his first printed book was an edition of Saul's list, finished in 1736. The types for this were set up by James Ged, the son of the inventor, who had been apprenticed as a printer. The forms were set up in the night and the plates cast after the other compositors had gone home.

The invention of the art of stereotyping has been claimed by the famous

house of Didot of Paris; but the honest testimony seems to prove that to William Ged, a native of Edinburgh, who commenced his experiments about 1725, and brought them to a practical degree of perfection, belongs the honor.

So far as we are able to judge from present appearances no process of surface printing from metal plates, either by transfer, electricity or any other means, has been discovered which is sufficiently practical and economical and expeditious to take the place of movable types or the reproduction of forms made up from movable types, or of pictures or engravings reproduced in any other way than by stereotyping or electrotyping, when the conditions of economy, speed and good quality of the printing to be done are demanded.

Gutenberg's invention revolutionized the literature and art of the world. As a young man he went to Strasbourg, where he made experiments leading to the invention which has made him famous. Although it is supposed by some

that he exercised the art to some extent at Strasbourg, there is no positive evidence in proof of this fact.

About 1440 he is supposed to have started his printing office in Mayence, in connection with Faust and Schoeffer, one of whom assisted him with money in carrying on his experiments. The first book known to have been printed from movable types is the Bible, comprised in two large folio volumes, two columns to the page and printed in gothic, or black letter. In the printing of this, for the times a stupendous work, a simple screw press was used, and probably not more than one page printed at a time; but the printing is so perfect that for clearness and beauty of impression, and in other points contributing to the beautiful book it may be said never to have been surpassed. Gutenberg not only made the punches and dies, but also cast the type and printed the book. The two volumes were not completed until, as is now universally conceded, the year 1456.

## THIN YELLOW LINE OUR BLUEJACKETS MUST BREAK.



Above is the first regular Chinese regiment ever organized—the First Infantry of Hong Kong. It is going to Tien Tsin by forced marches to drive the "foreign devils" from the white quarter. This command is armed with modern rifles. Above is a photograph showing its two crack companies at drill.

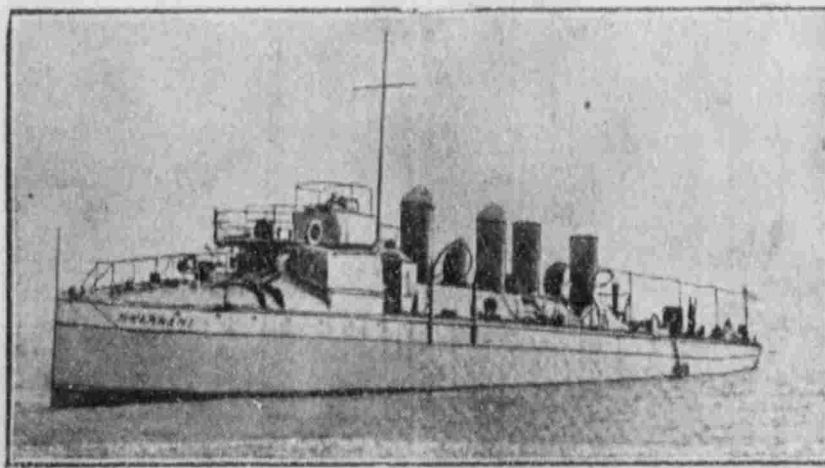
gout here, and other kings tarried awhile to hunt in the neighboring forests, the monkish king, Philip II, was first to declare Madrid "the only court," and add all its other high sounding but meaningless titles—"El Cuidado Imperial," "Coronado," "muy noble, muy leal, ye muy heroica"—the imperial and crowned city, very noble, very loyal and very heroic. Mr. John Hay, our secretary of state, in his book entitled Castilian Days, says on this subject: "It seems hard to conceive how a king who had his choice of Lisbon, with its glorious harbor and unexcelled communications; Seville with its delicious climate and natural beauty, Salamanca and Toledo, with their wealth of tradition, splendors of architecture and renown of learning, should have chosen this barren mountain for his home and the seat of his empire. But when we know this monkish king, we wonder no longer. He chose Madrid simply because it was cheerless and bare and of ophthalmic ugliness. The royal kilt delighted in having the dreariest spot on earth. After awhile there seemed to him too much life and humanity about Madrid, and he built the Escorial, the grandest idea of majesty and ennui the world has ever seen. This vast mass of granite has somehow acted as an anchor that has held the capital fast moored at Madrid through all succeeding years."

Arrived at Madrid, you find the railway station infested with an importunate crowd of beggars, porters, guides and lottery-ticket-vendors, through whose

## FRAGRANT RANKS

you fairly fight a passage to the line of waiting cabs. Jumping into the nearest cab, you are hardly started hotelward before the driver suddenly pulls up and an official, putting his head into the door, requests you to descend. "What is the matter?" you ask, fumbling for the ever-ready passport. "Reconocer el equipaje." Inspection of baggage is the reply. "Oh, yes! Though your trunks have gone to the custom house, that little hand-bag was forgotten in escaping the swarm of beggars at the station, who now hem you in and settle down upon you like locusts on a Kansas field. Probably rain is falling, as it usually does five days out of seven in Madrid; but there you must stand in the mud, at the mercy of the crowd, with your effects exposed to the wet, while the inspector makes a deliberate examination even of your tooth brush and shakes out your robe

## JAPAN'S SPEEDIEST GUNBOAT.



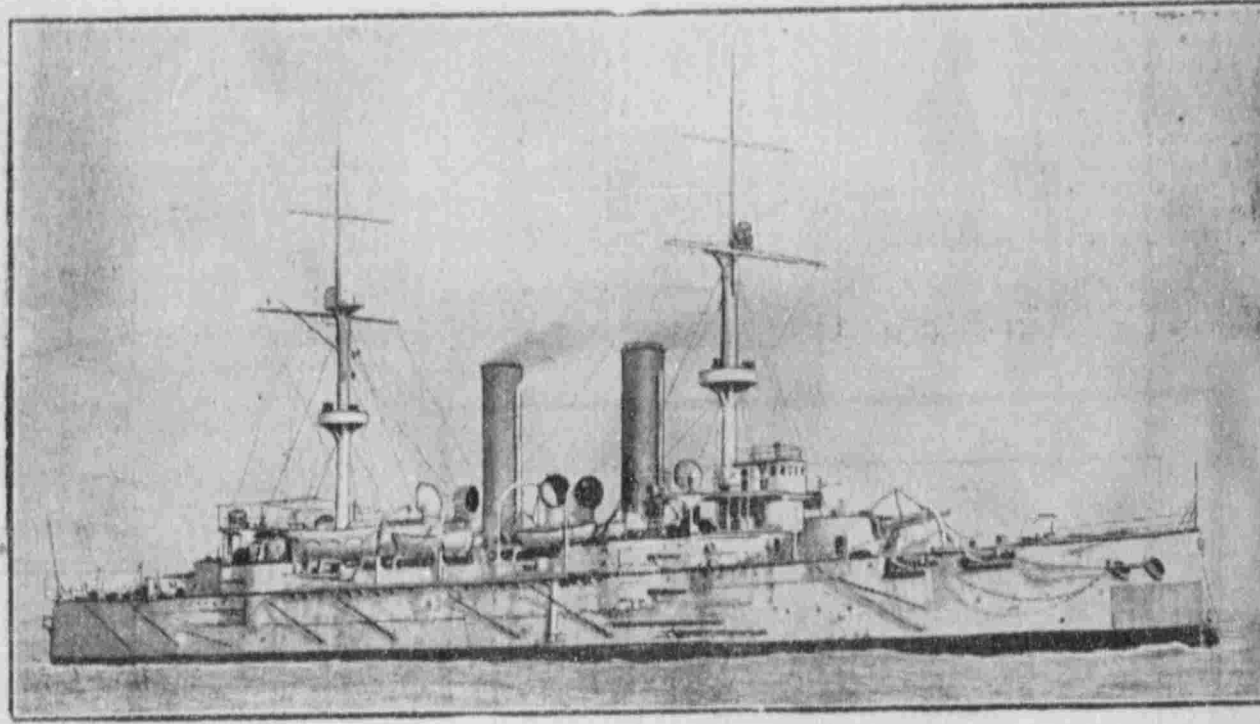
The Sazawabi, armed to the teeth and loaded for bear, is operating with the foreign squadron in Chinese waters.

de nuit, to make sure that you have nothing concealed in it; then thrusts your things back helter-skelter and "gate duties," are bound to be attended to. If you carried so much as an apple, or a sandwich, it would be promptly confiscated, for the benefit of the government, and probably there would be a fine to pay, if not something worse. A most vexatious tax is levied upon all articles of food before they are allowed to be carried within the walls, or exposed for sale in the markets of any town. Every pound of flour, every pint of wine, every orange, pays tribute to the reigning family; of course the burden of this imposition upon the

falls heavier upon the poor. The tax is collected without pity, and the slightest attempt at evasion is sure to be followed by the seizure of the violator in question, and the fine or imprisonment of the offenders. These argus-eyed officials, whose wits are sharpened by hunger and bad pay, are, however, not altogether indifferent to an influence styled El untar de las Manos, which, freely rendered, means "greasing the machine."

Driving through wide and well paved streets—such a contrast to Toledo and Cordova!—you are struck by the extraordinary number of tramway lines running in all directions, and the word "Inglese," meaning, English, labelled on everything in sight. In Spain the word "American" is applied only to South America, and all the inventions of the United States go in under the term "Inglese." Thus the street cars, made in Delaware, are credited to England, along with St. Louis and Milwaukee beer, Elgin watches and New York cock-tails, such as England never dreamed of. There are "Inglese" hats, "Inglese" corsets, "Inglese" biscuits, "Inglese" everything, even to Inglese maple sugar made in Vermont, and Inglese apples grown in Michigan. The Hotel de Paris, said to be the best in

## JAPANESE BATTLESHIP ATAGO.



Not only is this sturdy vessel one of the latest additions to Japan's fleet, but she also is one of the most effective. She was present at the bombardment of Taku by the allied naval forces.

## MOORISH FORTRESS.

It disappeared long, long ago; and now the vast oblong space is surrounded by splendid buildings of light-colored stone, showing decided Parisian taste and influence, which have helped to give Madrid the sobriquet of "little

## WHAT THE BIG CONVENTION COST PHILADELPHIA.

Philadelphia, Pa., Friday.—Conservatively estimated, the cost of the national Republican convention in this city would be \$352,200.

In order to get the convention here Philadelphia guaranteed to the national committee \$100,000, and of this amount \$75,000 has already been paid. The citizens' committee raised in all \$110,000, and the expenses of altering and decorating the convention hall were \$22,000.

The allied Republican clubs spent for general entertainment, a river excursion to the delegates and the big parade, at least \$5,000. Citizens and storekeepers expended for decorations and illuminations about \$5,000.

Actual expenses of the national committee, including rent at the Walton, printing and transportation, are estimated by Secretary Dick at \$25,000. A fair estimate of expenses for the 1,852 delegates and alternates for four days is \$185,200. It is known that one of the New England States and some States from the Middle West paid expenses on the assessment plan, and when the settlement was made last night each delegate was assessed \$100.

Of course, many of the delegates from the South and from nearby States did not spend \$100 while here. Delegates from the far West, on the other hand, spent almost twice that amount. The average is increased by the apparently unlimited expenditures of such men as Hanna, Woodruff, Bliss and Wolcott in entertaining friends and State delegations.

Senator Hanna had a suite at the Stratford that cost \$50 a day, although he did not use it an hour. Mr. Bliss had an equally expensive suite in the same hotel. Messrs. Hanna, Wood-

ruff, Roosevelt, Platt and Depew all had hotel headquarters in addition to apartments.

It is estimated that Mr. Woodruff's brief campaign here cost him at least \$1,000.

Senator Wolcott rented a house in Spruce street for a week and brought one of the late John Chamberlain's cooks from Washington. His reception room and the headquarters of his delegation at the Stratford were, of course, an additional expense.

In the \$50,000 expended jointly by the national committee and the city committee was included the cost of fifteen thousand pine chairs at twenty-one cents each, and the salaries of twenty-five hundred attendants.

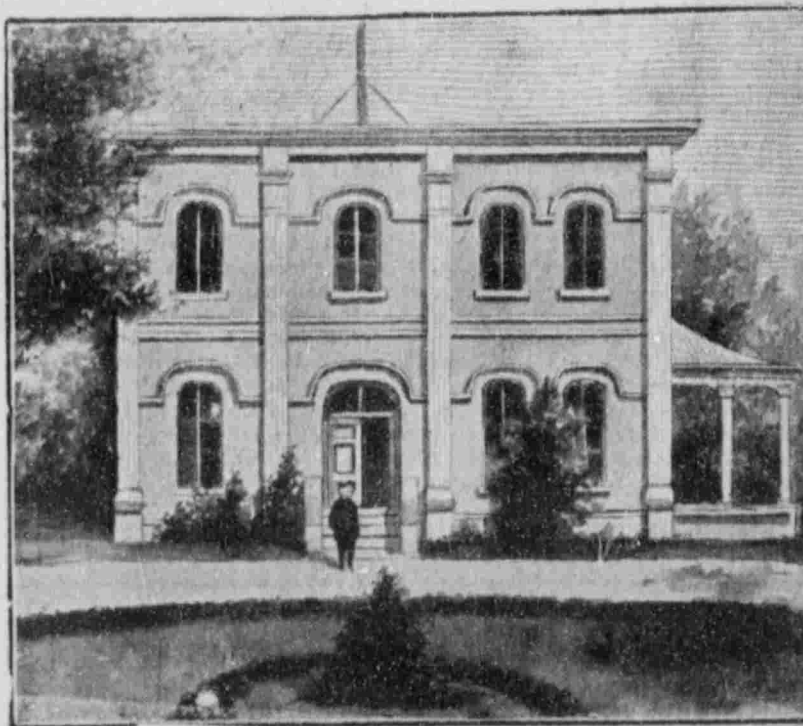
Storekeepers and hotelkeepers today expressed divergent opinions as to the amount of money the convention brought into Philadelphia.

All the hotelkeepers admit that they made profit above the \$5,000 subscribed by them to the citizens' fund. They say they did not charge more than the regular rates, but by putting four or five persons into a room ordinarily intended for two, and putting coats everywhere they could, each room was made to more than double its usual revenue.

Merchants assert the increase of trade due to an influx of 150,000 visitors was counter-balanced by the loss of business from regular patrons, who kept away during convention week. A moderate estimate for a convention crowd expenditure is \$5 a day for each person (so that 150,000 at that figure would net \$750,000).

The street railway companies carried 1,000,000 passengers a day for the three days of the actual business of the convention, which is twelve per cent more than the normal traffic. No estimate can be obtained from the railroad companies of their share in the general business.

## UNITED STATES MINISTER'S RESIDENCE AT PEKIN.



The United States Legation at Peking is quartered in a handsome house in the center of a fine garden. When the cherry blossoms fall upon its pretty portico and the air is all a-quiver with vernal scents, it is a charming residence.

## MADRID, THE ROYAL CITY OF SPAIN.

A Site Which Has Nothing to Recommend it, Except that a Former King Fancied Its Bleak Climate Good for His Gout.

## Special Correspondence.

Madrid, Spain, May 30, 1900.—From Toledo to the capital is only two hours' ride, by railway, through some of the loveliest scenery to be found in Spain. The first glimpse of the royal city, upon its elevated plateau, faced with noble edifices, is most imposing, as the train winds slowly toward it along lesser hillsides. But it renders disappointment greater when the goal is reached, for palaces which show off with startling effect from afar, are found on closer inspection to be bare and meager indeed. But there are redeeming features. The snow-capped Guadarrama range forms a background of which any city might be proud; and the great parks of Madrid—just not at their best in summer leafage—afford refreshing contrast to eyes wearied by the bare rocks of Toledo and the dull, brown landscape between.

Strange—is it not, how differently objects appear to people from various "angles of vision?" While all foreigners agree that Spain could hardly have chosen a less desirable site for her capital, the Spaniards themselves lavish upon it extravagant praises. A hundred favorite sayings are rife—such as: Solo Madrid es corte; Donde este Madrid calle el mundo; Desde Madrid el

Cielo—signifying: "Madrid is the only court." "Where Madrid is, let all the world keep silent." "Madrid is but a step from heaven." Sevillians glorify their sunny city of the Giralda with a couplet to the effect that: "Who has not seen Seville has not seen a marvel." But citizens of the capital cap the climax by declaring: "Who has not seen Madrid has seen nothing at all!"

This is what the Germans call a Reizenstadt,—meaning a town which has become a capital from being the residence of a prince. Gouty and dyspeptic King Charles V., imagining that he found relief from his sufferings in this sharp, brisk air and consulting only his personal comfort, deserted the

TIME-HONORED CAPITALS of Valladolid, Seville, Toledo and Granada, (about the year 1540), to establish his permanent residence here, on a spot which Iberians, Romans, Goths and Moors had all rejected. When captured by Alonso IV in 1363 it was merely a Moorish fortified outpost of Toledo, named Mayarrit—an Arabic word meaning "current of air." Being surrounded by dense forests, it was made a royal hunting residence, and nearly six hundred years later Argote wrote of it as "a good cover for boar and bear." Hence no doubt came the tree, vert, with a bear climbing up it, which figures so conspicuously in the arms of Madrid. The forests have long since disappeared, and now not a tree, nor

## DUSKY DEATH-DEALERS.



Here are some of the haughtiest officers in the army of H. I. M. Victoria, empress of India. They are the native staff of the Seventh Bengal Infantry, en route from Bombay to Hong Kong. All are of high caste, and they regard low caste natives of all nationalities as less than the dirt under their feet. Desperate fighters, too, those Bengalese patriots. Their men follow them to the cannon's mouth with unflinching alacrity, and they regard death on the battle-field as the most desirable end possible.

## THE SINGULAR FACT

that it is not an archiepiscopal see and possesses no cathedral. It is related that when the French troops entered the city, they exclaimed: "What has the river too run away?" To them is due the epigram, which yet clings to Madrid, concerning "men without courage, women without modesty, and a river without water." There are plenty of Spanish rivers without bridges, but this presents the anomaly of a splendid bridge crossing nothing at all. It was built by Philip IV. to whom wits of the time suggested that he would better buy a river or sell his bridge. In the reign of Charles II. the court used to amuse itself by driving up and down the dry, rocky bed of the Manzanares, and local traditions preserve many amusing mishaps that occurred. Up in fifty years ago this great city of about 475,000 inhabitants, depended entirely upon the Gallegos, or human carriers, for every drop of water used; and so scanty was the supply, and for so high a price did it sell, that most of it was drunk and very little left for lavatory purposes. Thanks to an English company, the city is now abundantly supplied with delicious water, which is distributed into every part by hydraulic works. It is brought from the source of the river Lozoya, away up in the Guadarrama range, more than thirty miles away, through the anomaly of a splendid bridge crossing nothing at all. It cost twenty-five million pesetas.

Though Ferdinand and Isabella occasionally set up their pilgrim tabernacle on the declivity that overhangs the Manzanares, and Charles V. nursed his