

lottery, in which there is a hope entertained that the competitor will gain the prize. But imagination can picture behind that scene the expectant M. P. or candidate for some public office buying the good-will of the "Dorens Society" with fifty dollars wherewith to provide clothing for the poor; bribing the "Munse" Committee of this congregation, and the "Church Building" Committee of that, with liberal contributions; and flooding the local charities with the suddenly opened well-spring of his heretofore arid benevolence in the hope that a plentiful return of votes will reward him on election day. Many other characters might be suggested as companion pieces to this picture, but these the fancy of the reader can readily supply.

The sixth illustration displays more of rough good nature than of either charity or alms-giving. The scene is evidently Canadian, and might have taken place the other day in the neighbourhood of Shebandowan. Let us suppose our gallant volunteer camp with provisions enough, and to spare, besieged by a lot of hungry Indians, doubtless when the soldiers' wants are fully supplied the surplus will be turned over with good-natured nonchalance, and with less consideration for the necessities of "poor lo" than for the fact that they themselves are satisfied. The last scene has no such dubious relation to charity. The "widow's mite" is offered, as her prayers are offered, in the spirit of trustful and unassuming piety and devotion to Him Who is the Lord and Master of all.

ABDICATION OF QUEEN ISABELLA.

The formal abdication by the ex-Queen of Spain, Isabella II., of the crown which she virtually lost a year and a half ago, took place in Paris on Saturday, June 25th. The ceremony was conducted in what is called by courtesy the throne-room of her exiled Majesty's palace, the hotel Basilewski, in presence of the members of the royal family, and a number of the public men of Spain. Among these the following were present:—Gen. Lersundi, Gen. Gassel, Gen. San Roman, the Duke of Medina-Celi, the Duke of Rianares, Duke de Sesto, Duke d'Arco, Duke de Ripalda, Duke de Rivas, the Marquis de Casa Irujo, the Marquis de Pena Florida, and the Count d'Espelata. The ex-monarch entered the throne-room, dressed in rose-coloured silk, profusely covered with white lace, and wearing a splendid parure of pearls and a diamond girdle. Her face wore a very pleasant look, and she glanced kindly at her followers as though the business in hand had been of the most entertaining nature. When all the assistants had taken their places, the ex-queen rose from her throne, and announced her resolution of abdicating in favour of her eldest son, Don Alfonso. She then read the following manifesto addressed to the Spanish people:—Spaniards, my long reign has seen many sad and troubled periods—sad above all for me, because the glory of certain facts and the progress realised while I ruled the destiny of our dear country cannot make me forget that, loving peace and the increase of the public good, I ever saw my deepest and most cherished feelings, my noblest aspirations, and my most earnest wishes for the prosperity of Spain thwarted by acts independent of my will. As a child thousands of heroes proclaimed my name, but the horrors of war surrounded my cradle. As a girl I had no thought but to second proposals which appeared good and calculated to secure your happiness, but the heated strife of parties allowed no time for the law and for the love of prudent reforms to take root. At an age when reason is fortified by experience, the ungovernable passions of men whom I would not oppose at the cost of your blood, more precious to me than my own, have driven me to a foreign country far from the throne of my ancestors, to this friendly, hospitable, and illustrious land, but which is not my own country, nor that of my children. Such, in brief, is the political history of thirty-five years, in which I have exercised the supreme representative power of the people committed to my charge by God's law, by personal right, and by national right. Reflecting upon this period, I cannot accuse myself of contributing with deliberate intention either to the evils laid to my charge, or to misfortunes which I was powerless to avert. A constitutional Queen, I have sincerely respected the laws. A Spanish woman before all, and a loving mother, Spain's sons are all equally dear to me. The misfortunes which I could not prevent were mitigated by me as far as possible. Nothing was more grateful to my heart than to pardon and reward, and I omitted nothing to prevent my subjects' tears from flowing for my cause. With desires and feelings that have nevertheless been vain to spare me, in my country or away from it, the bitter trials afflicting my life, resigned to suffer them, and accepting the designs of Divine Providence, I believe I can yet freely and spontaneously perform this last of my acts, all of which, without exception, have sought to promote your prosperity and to secure your tranquillity. Twenty months have passed since I set foot upon foreign soil apprehensive of ills which, in their blindness, temerarious supporters of illegitimate aspirations, who have been condemned by the laws of the kingdom, by the vote of many assemblies, by the right of victory, and by the declarations of the Government of civilized Europe, do not hesitate to endeavour to produce. In these twenty months my afflicted soul has never ceased to hear the suffering cry which arises from my never-forgotten Spain. Full of faith in its future, solicitous for its greatness, integrity, and independence, grateful for the support of those who were and are attached to me, forgetting the affronts of those who do not know me or insult me, for myself I ask nothing, but I would obey the impulse of my heart and the loyal sentiment of the Spaniards by confiding to their honour and noble feeling the destiny of a traditional dynasty and the heir of a hundred kings."

Then followed the act of abdication:—"I, Isabella II., etc., etc., declare that, of my own free will and mere motion, and without any foreign pressure, cede and assign to my son Alfonso all my political rights, reserving only the civil rights of a mother and a guardian." All the personages present then signed their names as witnesses to the document, after which the company, with the dowager-queen Maria-Christina at their head, kissed the hand of the Prince, in acknowledgment of his sovereignty. During the ceremony the Prince of Asturias, with the Infant, Don Sebastian, stood on the right of the ex-queen; on her left were the queen-dowager, the infantas and the Count d'Aquila. Her Majesty's husband, Don Francis d'Assises, was not present.

THE RED RIVER EXPEDITION.

The start from Dam Site—which, as mentioned in our last, took place on the 16th ult.—was only accomplished with much difficulty. Orders had first been issued fixing the 13th as the date of departure, but this was found to be too soon and

the next day, the 14th, was named. To accomplish the start on this day was found to be impossible, and accordingly it was put off until the 15th, and, ultimately, to the 16th. On the evening of that day, after much preparation and great hurry, the first three brigades were got from Dam Site, on their way across Lake Shebandowan to Fort Francis. On the 17th and 18th, other brigades left, and up to the latter date there remained at the point of embarkation only the 60th, who were to leave on the following day, and the 1st and 2nd Battalions of volunteers. Mr. Dawson, who arrived at this time from the portage at the head of the lake, brought news of the first three brigades. A letter from Col. Fielden said that the brigade of boats in which he started had been overtaken by the brigade that started after them, and that both had crossed the portage in safety. The engineers and artillery had not then crossed. The weather had been very fine and very hot, so there was no impediment in the shape of rough weather. If the present state of things continues it is expected that the journey to Fort Francis will be made by the 60th, who do not wait to portage spare provisions, in about three weeks. The Indians of Mr. Dawson's canoe brought back intelligence of their own from the Portage. While there they met two Indians from Fort Francis, who told them that five or six hundred were encamped about the place waiting for the arrival of the expedition. They also said that the half-breeds of Red River were in the habit of riding down to the north-east angle almost daily, as well as to some other place, the whereabouts of which they did not make clear, in numbers varying from one hundred to one hundred and fifty. The prevailing opinion in the Indian mind is, and has been, that there is going to be a fight, and the rumours tend to confirm the impression.

Col. Bolton was to have left Dam Site on the 18th., with Mr. Irvine, the Comptroller. Col. Wolseley intended leaving on the 21st.

We publish in this number a view of McKay's Mountain, a prominent feature in the scenery at Thunder Bay.

PROGRESS OF INVENTION ABROAD.

(From the Scientific American.)

Among the most interesting of the new inventions announced in our European exchanges is a new method of raising the screws of propellers—an English invention. The stern length of the propeller shaft has its inner end supported in a pivoted bearing, and a passage or way is constructed in the stern of the vessel, through which the pivoted shaft may swing upward, when lifted by a chain attached to its outer end. The inner end of the portion of the shaft which swings up in this way, extends beyond its pivoted bearing, so that raising the outer end in the manner described uncouples it from the other part of the shaft. The blades of the screw are made so that they can be folded together, and, when the screw is raised as described, they are stowed away in a recess. The shaft passes on one side of the stern part, and a sort of shutter closes the opening in the run when the shaft is down.

Another English invention, which, if we are not mistaken, was tried some years ago in this country, is an arrangement of stone-cutting and dressing machine, in which the dressing operation is performed by rotating disk cutters having conical edges, these cutters being mounted so that they revolve freely on inclined axes carried by a revolving cutter-head. The arrangement is such that the cutters make a kind of rolling cut, and their action is thus very similar to that of the "magic diamond," with which our readers are all familiar.

A London inventor has devised a method of securing sheets and panes of glass in metallic frames, so that they shall not be broken by expansion and contraction of the frames through changes in temperature. In applying this invention to a lantern, a metal frame is constructed, which is composed of an upper and lower band, united by bars at the corners of the lantern. The panes or sheets of glass are placed upon the outside of these corner bars, and are then secured by metal bars or clips of a V-shaped or concavo-convex sectional form. These clips extend from the top to the bottom of each pane, and are secured to the upper and lower bands of the frame by means of sockets, screws, pins, or other devices, which will hold them firmly, but will also allow them to be readily removed when desired. The bottom of the frame is provided with a fillet to receive the lower edge of the panes of glass, and this fillet is perforated at the bottom to permit the escape of any water that may be caught therein. By thus securing the panes or sheets of glass within, or between strips or bars of metal, without putty or other adhesive substance, they are held with sufficient firmness to prevent any vibration or displacement in their frames, while at the same time the said frames permit them to freely expand and contract under the sudden changes of temperature to which they are exposed.

A Birmingham inventor has made an improvement in water tweers for forges, which consists in forming the water twee for hot blast with the entrance and exit air and water passages in one casting, and in affixing it directly to the water cistern and to the air-heating box or chamber without the use of separate connecting pipes. One part of the twee passes through the water cistern, and another part passes through the centre of the said heating box or chamber, and the twee is secured to both cistern and chamber by means of flanges and screw bolts and nuts. The joints of the parts are made air and water tight by suitable packing. The air passage of the twee is so formed that the entering air is conveyed by it through the water cistern, and then by a curvature of the passage is conducted into the air chamber where it becomes heated; the heated air from thence passes by means of another curved passage to the nose part of the twee into the forge fire. Surrounding the air passage is the water space which opens by two openings into the water cistern, one above and the other below the entrance air passage, and the openings are so situated as to cause a circulation when the water becomes heated against the nose of the twee.

A Manchester mechanic has invented a very ingenious method of joining the ends of old warp to the ends of a new warp in weaving. The ends of the old warp to which the ends of the new warp have to be joined are held in a clip, and the ends of the new warp are similarly held in a clip. The two sheets of warp are then placed in the machine. The sheet of old warp being placed over the sheet of new warp, they are then acted upon by the machine as follows:—1. The warp threads are laid evenly by means of brushes. 2. A pair of clips or nippers take hold of both warps after they have been laid evenly by the brushes. 3. These nippers take the

threads into a pair of rollers set at an angle to tighten the warp threads. 4. The end thread of the old warp and the end thread of the new warp are detached from the other threads of the warps by a reciprocating pair of nippers. 5. The threads so taken by the reciprocating nippers are laid by other nippers over the side of a tube, by which the two threads are formed into a loop. 6. A hook passed through the tube takes hold of the end of the two warp threads, and draws them into the tube, so forming a knot, the ends of the threads having been severed by a cutting blade or scissors to allow of this. 7. The knot is tightened by the threads being drawn through a narrow nick, which will not allow the knot to pass, and the threads are cut close to the knot.

Blood.—By the aid of a microscope it is seen that blood consists of minute round bodies floating in an opaline liquid; these are termed corpuscles. They are so very small that one cubic inch of blood contains no less than eight hundred million corpuscles. Blood is rather heavier than water, as is seen when a drop is let fall into the transparent liquid, it falls through it. In about fifteen minutes after blood is drawn from the body it ceases to be fluid, and becomes a gelatinous mass. After standing for about twenty-four hours it separates into two distinct parts—one a watery fluid, which is called serum; the other, a solidified mass, coagulum. The red colour of blood is due to a substance called hematine, which exists in the corpuscles. The coagulum consists in the main of a body called fibrin—flesh producer—masked by the colour of the hematine. This fibrin differs but little from the nature of the white of egg. The blood fulfils every office in the body by restoring and building it up. Certain matters are eliminated from the blood to produce hair, nails, skin, fat, muscle, bone, brain, etc. It is therefore obvious that the blood must be of a complex nature. As a single fluid it contains more known elements than any other known natural body; among others may be mentioned phosphorus, lime, magnesia, iron, sulphur, soda, chlorine, potass, etc. In its natural condition it contains fat and sugar. The average composition of blood indicates that in every thousand parts from a male, it contains 780 of water; from a female, 790 of water.—*Septimus Piesse.*

ACTION OF HEAT ON DIAMONDS.—The *Scientific Review* says that a Marseilles jeweler having allowed some diamonds to remain in their places while he enameled the setting, found after the operation was completed, that they were perfectly black. No amount of rubbing would remove the coat; and moreover, the diamonds had become heavier. The lapidary's wheel, however, restored them to their original colour and weight. M. Morren, of the faculty of Marseilles, was induced to investigate the matter, and made a number of experiments. As the jeweler in this instance had used coal in his furnace, instead of coke as he had usually done in such cases, M. Morren heated a diamond to a white heat in a current of coal-gas. The result was the same as that obtained by the jeweler. This layer of carbon was then burned off, by heating to redness in the open air. When heated in hydrogen, the diamond remained intact even at very high temperatures. In carbonic acid, it lost weight and brilliancy.

THE PRESERVATION OF WOOD.—In the *Annales du Génie Civil*, of April last, Dr. Reinsch gives the following directions for this purpose:—The wood, unplanned, is to be placed for 24 hours in a liquid composed of one part of concentrated silicate of potassa and three of pure water. After being removed and dried for several days, the wood is again to be soaked in this liquid, and after being again dried, painted over with a mixture of one part of cement and four parts of the above liquid. When the first coat of this paint is dry, the painting is to be repeated twice. This paint mixture should only be made up in small quantities, as it rapidly becomes dry and hard. Wood thus treated becomes unflammable, and does not decay underground.

A NOVEL MISSION.—Mr. Charles Stephenson, the secretary of Lloyd's, sailed on June 20 from Queenstown by the *Russia*, for New York, in order to investigate the circumstances under which the false intelligence of the loss of the *Dacia* was transmitted to England. Great credit is due to Lloyd's for the energy with which they have taken measures to secure the detection and punishment of the perpetrators of a most wicked and cruel hoax. Every one must hope that Mr. Stephenson's journey will be crowned with the success it deserves.

ANECDOTE OF DUMAS.—A story comes to us about Dumas. The great novelist, being in London last year, found himself inexpressibly bored by the dreamy dullness which reigns in the modern Babylon on Sunday. The change from the gaiety of the Parisian Sunday was anything but agreeable to the author of Monte Cristo.

Below, no cafés, no restaurants, no open stores, no theatres; whilst above, the gay and leaden looking sky seemed to hang like a pall over everything, producing a painful impression of dreariness impossible to be dispelled.

He was standing with an English friend, in the court-yard of the house, where a number of poultry of all colours and sizes, were enjoying their liberty and pecking at their grains of barley with evident satisfaction, while an unfortunate black rooster was confined in a coop, unable to reply to the advances of his lady friends, who gathered round his wicker prison, except by a miserable attempt at flapping his wings and a wretched attempt to produce a joyous crow, which died away in the poor bird's throat and resolved into a mournful croak before it passed his beak.

"There!" said Dumas, pointing to the captive, "there you have a perfect picture of England on a Sunday; that is England in the cage. But look at that little rooster with the golden and black plumage, strutting about and looking so gay and happy. Well, my dear sir, that is a picture of France on Sunday."

At this moment the large black rooster, by an extra vigorous flapping of his wings, overturned the coop and found himself at liberty. With a bound and a screech he flew at the little representative of France, and with a few well-directed pecks put him ignominiously to the rout.

The Englishman took his revenge. "Well, Mr. Dumas," said he drily, "I think you may call that the battle of Waterloo."