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THE TRADER.

TORONTO, ONTARIO, JULY, 1882.

Sent free to every Jeweler and Hardware Merchant in the Dominion of Canada.

SPECIAL NOTICE.

To ensure insertion, changes or new advertisements must be sent to the office not later than the 27th of each month.

Editorial.

HOW TO SEND MONEY.

We often hear complaints from merchants, both wholesale and retail, about the uncertainty and risk of sending money. There should be but little trouble and no risk attached to sending money remittances if the few plain rules we propose to give below were faithfully attended to. A great many people when they make remittances have a habit of sending their money in bills, either by express, or by post in registered letter, both of these methods are clumsy and the latter somewhat unsafe.

If a money letter goes astray, even though registered, the post-office department runs no risk of loss—the loss, if any, falls on the sender. It is true that the registration is a great help in finding out what has become of it, but it has often happened that when that discovery was made it was of no benefit to the loser whatever. Then again, sometimes when money is thus sent by letter, there arises disputes upon the amount really sent. The sender asserts that he sent a certain amount, say $25, the person receiving it says he only received $20; both are positive, and it is possible that they may both be right—that $25 was sent and only $20 received. It has happened before and it will happen again that money has been abstracted by some dishonest clerk, in which case the sender has to bear the loss; or it may have happened, as is sometimes the case, that the sender had made a mistake in sending the money and really sent the smaller amount in place of the larger as he had intended. For these reasons we say the habit of sending money enclosed in letters is unbusinesslike, risky, and apt to lead to disputes, and should therefore be avoided by all those who want to do business in a trustworthy manner.

There are three ways of sending money that are absolutely safe, and at the same time as cheap and occasion much less trouble than any of those already mentioned. Sending by

POST-OFFICE ORDER.

Where there is no bank this will be found a very simple and perfectly safe method of sending money, and we would strongly urge our readers in out-of-the-way places, where there are no banking facilities, to use this in preference to sending remittances either by express or enclosed in letters. Sending by

BANK DRAFT.

This is a simple and safe plan, and the sender runs very little risk in adopting it. All drafts should be made payable to the order of the party or firm to whom the remittance is intended—this will effectually prevent any one else from making use of it, even if it by some mistake should chance to get into other hands, unless they commit forgery, which few people care to do. Sending by

MARKED CHEQUE.

This we consider the simplest, safest and most business-like method of any we know of. All that requires to be done is to write out the cheque, (adding collection), payable to the order of the party to whom the money is to be sent and get it marked "good" by the banker and sent on by letter in the usual way. There is little risk in sending it, for such a cheque is good to nobody except the person to whose order it is made—it is therefore safe. But beyond these considerations it has also this one, that the party to whose order it is payable must endorse it before they can get the money; when it comes back to the maker, as it must do, he then has his own cheque with the receivers endorsation as a receipt that the money has been received. In fact such a cheque is receipt enough in itself. If the cheque should get lost in transit, the maker can easily stop payment, which would render it worthless to any one except himself or the party for whom it was intended.

This method of sending money remittances by marked cheque has so many things to recommend it, that we are astonished that it has not been more generally adopted by our merchants than it has been. Some of the largest and wealthiest houses in Canada have given it a trial for some years and they say they would not willingly go back to the old method. This way of sending remittances is as near perfect as can possibly be, it is as simple as any, and above all it furnishes an incontrovertable receipt that cannot be gainsayed.

OUR FUTURE TRADE POLICY.

The past few weeks have been so filled up with election matters that people have apparently had but little time to devote to business. However, the great event is over at last and people already breathe freer, knowing that whether the elections have gone according to their wishes, or not, they are at least settled for the next five years.

Without doubt the great question of the election just over was, "what shall the future trade policy of Canada be, protective or revenue tariff?" and for the second time the people have given forth no uncertain sound upon it.

Notwithstanding the other questions, such as the "Boundary Award," "Disallowance Bill," and the "Gerrymander," the "National Policy" seemed to force its way to the front in spite of every effort to keep it in the background, and it is no exaggeration to say that the government were sustained, not because they had no bad marks against them, but in spite of these faults, and simply that the protective trade policy might be continued. It seems to us that the contest just passed was more of a plebisite upon the trade policy of the government than anything else, and it is safe to say that had this policy not commended itself so highly to many of those who differed from the government politically, the majority would have been very greatly reduced, if they had not been utterly defeated. The late election was a kind of anomaly in its way, the contestants although nominally two, being really three in number; the party supporting the National Policy intact, composed of the Conservative party and Liberals who thought a sound mercantile policy with

a bad government better than a good government with a bad mercantile policy; the Blake party, who would support the national protective policy at present in force with a re-adjustment of some of its worst features; and, lastly, the *Globe* party, who were "agin the government" and the N. P. in every particular, pronouncing the latter emphatically "a national folly and a national crime."

The Blake party and the *Globe* party were supposed to be synonymous, but in reality nothing could be further apart than their aims, the former being the party of "progress," the latter of "revenge." If the *Globe* had possessed discretion enough to have accepted the situation, and loyalty enough to the party it misrepresents to support its leader's policy with its whole strength, it is more than probable that the result of the election would have been very different from what it was. As between the present policy of out and out protection and Mr. Blake's modified form of it, many people had they been certain that the *Globe* would have allowed Mr. Blake to carry out his policy, would have supported him, but as it was, they voted for the government simply because they thought that the Liberal leader was not strong enough to carry out his expressed intentions; they considered that a return to the old state of things would be disastrous to the country. As the attempt for one man to sit on two stools is generally unsatisfactory, so the Liberal party found to their cost that the effort to run two opposite kinds of tariff policy was a decided failure, a result which might easily have been avoided had its leaders been as united as they should have been.

The result is, however, as we have stated, that as far as the next five years are concerned, and probably for the next fifty years, the tariff policy of the Dominion will be a protective one. Looking at the case dispassionately we must say that we think the people pronounced wisely, and that the true policy for this country is one that will foster and encourage our home manufactures. The idea of the *Globe* that this election had to be fought out on the same lines as that of 1878 was its supreme mistake; things had changed, but the organ, like some political Rip Van Winkle, had either been asleep or its faculties were so obscured that it could not take notice of the great changes that were taking place around it. The policy asked for by the people in 1878 had been given them, and under its influence factories had multiplied and millions of dollars had been invested in this way. Even admitting that factories were bad things in themselves and detrimental to the best interests of any country, having been called into existence by its almost unanimous voice they had become a legalized institution, and therefore possessed of a standing which entitled them to more consideration than the mere caprice of a moment. The people were bound to respect what they had themselves thus called into existence and legalized, and so the question of vested rights had no small share in deciding the contest. Liquor selling, which is an admitted evil, is licensed by law, and when money is expended on an evil thus legalized, the vested right of the person so expending his money is admitted by the country, and it has more than once declared that it has no right to take away his license without cause or compensation, and make him lose the money he had expended while under the protection and with the sanction of the law. If such is the case in regard to an admitted evil like liquor selling, how much stronger the claim of manufactories, which are not only not an evil, but such a positive good that no country can be truly great or prosperous without them. But these facts which were overlooked or sneered away by the *Globe* party, were very strong factors in the late contest, and many thinking men who refused to "bow the knee to Belial" and swallow their dictum holus bolus, men who would have been glad to have supported the Liberal leader under other circumstances, turned their back upon their party and voted for the trade policy in which they really believed lay the mercantile salvation of the country.

For our own part we have no hesitation in pronouncing in favor of Mr. Blake's national policy (as contained in his electoral address to his constituents) were we sure that it would have been faithfully carried out, but as between the tariff of the government and that advocated by the *Globe*, we must distinctly prefer the present policy, defective as it is in many points.

That a protective trade policy is to be one of the planks in the future platforms of both parties we have no doubt, and we have as little misgiving that if such a policy is properly adhered to that the country will be greatly benefitted thereby.

DO WE WANT A CANADIAN HOROLOGICAL SCHOOL?

In our last article on this subject we endeavored to point out the necessity that existed in Canada for an improved class of watchmakers; in the present we propose to put before our readers some of the results of such institutions in other countries, and leave them to decide whether the establishment of such schools here would not vastly benefit the trade and the public by turning out a higher class of skilled watchmakers than we can at present boast of.

A great many people take but little stock in such things as "Horological Schools" because they believe they are theoretical and not practical, and they have a thorough contempt for anything and everything that is not practical in itself, forgetting that it is mainly on account of theorists putting their ideas into practical shape that our mechanical and other facilities are so far in advance of what they formerly were. If there were no theorists, mechanics would advance very slowly, for the simple reason that any improvement would be but the result of accident. Theory, however, is ever pressing forward, and although it may in its eagerness be oftentimes visionary, yet there sometimes springs from seemingly chimerical ideas the grandest and most practical discoveries which revolutionize trade. But when we talk of a horological school for Canada we do not refer to a purely theoretical school, but rather to a practical one, where theory and practice shall be judiciously mixed, the latter, however, having greatly the preponderance.

Such a school, we think, can only be started at present by private enterprise (unless the trade as a whole should bring its claims before the Government) and we are inclined to think that even as a private enterprise it might be made self-supporting, if it did not pay a handsome dividend to its promoters. It may not be generally known but it is a fact nevertheless, that France and Switzerland owe their supremacy in the watch trade principally to the advantages derived from the formation of Horological Schools.

In a very interesting article on Technical Education in Horological Schools, our clever contemporary, *The Watchmaker and Metalworker*, of Chicago, says in illustration of the effect of these schools in Europe:

"The well-known Claudius Saunier, of Paris, established many years ago in that city a school for the education

of watchmaker's apprentices, and by personal contributions of money and books, as well as energetic work in its behalf, the school flourished and led to the establishment of several in other parts of Europe; among which may be named those at Geneva, Chaux de Fonds, St. Imier, Bienne, Neufchatel, Flourier, Soleure and Glasshutte. The school at Geneva was founded in 1826. In 1842 it was taken possession of by the city, and has a yearly budget of 48,000 francs, from which 4,000 francs are deducted. Each pupil from the city pays five francs, and outsiders pay twenty francs per month as school money. Foreigners have to pay the same amount as the others with the additional fee of 100 francs entrance money. Pupils are received into these schools after their fourteenth year, and must remain four and one-half years. They first enter for one year for raw work, when they learn the manufacturing of the single chief component parts. They then pass nine months in the class for mounting the wheel works, and an equal period in the class for the winding up and for the repeaters; the next year is devoted to the study on escapement, and the last year for final revision. Beside the practical handwork, the study of mathematics, machinery, drawing and physics constitute the chief branches of instruction, in which the pupils are aided by the professors in their best methods. There is also a special technical school at Chaux de Fonds in which from 150 to 200 pupils especially devoted to the art of decorating are provided, and this is a very important branch in the watch industry.

No other industry in the world has such a fixed system for regulating its work as the Swiss watch manufacturers. Sixty distinct masters are occupied with the manufacturing of the different parts of each single watch, and this is so divided that each workman manufactures throughout the year the same piece—for example, the hands or certain wheels—and by this means the workmen attain peculiar ability in their special work. Their former simple and primitive tools have been metamorphosed into the most complicated machinery, and their ability to perform work is enormous both as to quantity and quality. They generally work at home with the help of the members of their family, and then sell these finished component parts to the big manufacturers, under whose superintendence the watch is completed. Although these different parts are procured from different shops, they fit exactly together because they are made after one and the same number, measure, rule and system. Seventy thousand persons are now employed, but the production cannot be estimated exactly. A half million watch cases are made, and the whole production, including those sent abroad, amounts to at least a million pieces, representing 100,000,000 francs."

The question is if these schools have done so much for European countries, what would they do for Canada? Is the idea practical, and if it is who will put it into shape?

COMMUNICATION.

The Editor does not hold himself responsible in any way for the opinions expressed by correspondents.

Ottawa, June 17th, 1882.

The Trader Publishing Co., Toronto.

GENTLEMEN.—I notice in your June issue a paragraph devoted to the case of Ellis *vs.* Freudenberg. I trust that you will allow me space in your journal for a few words in reply, as no doubt something in self defence will be expected from me by your readers, especially by those who do not know Ellis & Co. as well as I, or the facts of the case. I positively deny taking all available funds with me on my leaving for Germany—on the contrary, I deliberately left sufficient funds at the disposal of my wife, who had all along assisted me in the management of my business, to meet the only accounts that would mature before my return, and the charge that I took with me some of my stock is also a false charge. I took no stock, and the judgment of the Court does not sustain such charges, and I here state publicly that at the time the attachment was issued I was not indebted one cent to Ellis & Co., or to any of my creditors, as is shown by the schedule of my liabilities now in Court, and had I been fortunate enough to have had my application made at an earlier stage, it must have resulted differently. I need make no comment upon the part of the paragraph that states I should have notified my creditors before leaving, &c., as it is simply consistent in the absurdity with the rest of the paragraph. I have suffered great damage at the hands of Messrs. Ellis & Co. and their two willing instruments in this city, but I hope by close attention to business a business will soon be built up that will be lasting monument to the shame and disgrace of him who one day entered and left my store as a friend and well-wisher and the next morning put in the Sheriff and gutted my store, leaving my wife and family in my absence helpless, without means of support.

Yours respectfully,
E. FREUDENBERG.

MR. DUCHEMIN, in a late session of the Academie des Sciences, Paris, proposes to substitute pivots made of iridized platinum, in place of common steel pivots of chronometers.

Selected Matter.

WORKS OF ART REPAIRED.

ANCIENT AND MODERN DAMAGED BRIC-A-BRAC TURNED OUT AS GOOD AS NEW.

The sign over the doorway presented the occupant of the building to the world as a "Repairer of Art Treasures," and the samples of large damaged vases, broken bronzes, and dilapidated armour displayed in the ample windows gave promise of interesting matter within. And, in fact, the establishment appeared to be a vast and mysterious repository of damaged art, such as even Little Nell and her grandfather would have wondered over.

"You see," the proprietor said, "we get a great variety of goods for repair after the May movings. Many people are careless in handling works of art, and some of the finest of them are the most fragile. Here is a noble piece, or pieces rather, of Dresden ware, which will be repaired into a large and elegant *tazza* when we get its hundred or more fraggments together. How people can possibly make so thorough a smash of a thing, I cannot understand. It is true they might throw it against a wall, or drop it out of a third-storey-window to the sidewalk. We get many things as bad as this, and some that are worse. This other group is also badly broken up. In statuettes like this, the neck is almost invariably snapped. Heads, hands, arms, and fingers oftenest need our services; legs are next in the order of accidents.

"Can we repair noses? Well, I will show you an example in point: tell me where this one is joined to the face. You cannot perceive it? You pay us then a high compliment. If you could detect a blemish we would not be good repairers. You may see a trace of our handling with this magnifying glass, but not otherwise. It is one thing to stick on a nose and quite another to repair it artistically. The two historical noses that stand fixing up the best and oftenest are Washington's and Wellington's. Owing to their prominence, you understand, they are easiest broken, but thanks to their size and substance they are the most satisfactory to repair. It is lucky for the Asiatic and Egyptian idols which are now so plenty here, they have mostly flat noses; it preserves their integrity, and saves us much work with the file.

"In large breakages we often have to

supply many pieces. Here is a fine Sevres vase; it contains seven insects, one of which is four inches long. We first make the porcelain paste and fit it accurately. It is then colored, decorated, glazed, burnt and cemented to its place. This restoration will cost $60.

"We have sometimes repaired articles, mostly ceramic, where our bill exceeded their real value, though by no means the actual cost of the goods when perfect. People are very often deceived in buying such things. This salver is a fine piece of work in its way, yet it is only an imitation of Sevres, worth perhaps $40. If genuine it would bring $200 or $250 at auction. Our repairs will cost about $50. It was knocked down a flight of stairs by an intoxicated footman. Some ceramic articles are sent here for repairs whose intrinsic value rests upon the fact that they are unique or at least antique. They have perhaps been manufactured or decorated from special designs, or, being true antiques, are rare. Here is a remarkable piece of old faience. It's ugly, but rare and includes an idea. The grayish patch on this side you will notice represents a spider's web, and this resplendent beetle is tangling up his beautiful legs in it. That gorgeous long-limbed owl is shaking his wise old head as he watches the game. The colors you observe are very intense and beautifully worked as to the figures, yet the rest of the vase is quite dull in appearance. It would take a large sum to buy it, however.

"Alabaster is hard to repair; being translucent, the strong cement required is apt to make troublesome shadows below the point of fracture. Here are some fine alabaster sea horses whose necks were broken in trying to support a mosaic table upon which a young man seated himself after a wine dinner. The repairs will cost $50. It is good for my business, but I am often shocked by such things.

"Excuse me; an expressman is unloading a vase at the door. Did you hear what the messenger said? 'It must be repaired by to-morrow, sure, as it has been sold.' It is from an importing house; the vase was broken while they were loading it. It will be repaired and nothing said about breakage. This often happens. The vase, after all, will be as good as ever for decorative purposes. The cause of breakage among dealers is often bad packing. It is an error to pack fragile goods tightly; for every jolt from without is felt within. There should be some "give" to the packing. Many people who think they have a perfect piece of faience would be surprised to learn how many times it had been smashed in say from one to two hundred years of miscellaneous handling.

Tiles and plaques of all sorts are sent to us. They are easily repaired, except where there is a loss of substance or of color. The Berlin plaques are superb, but we find them very brittle. Table or chimney-piece ornaments are more exposed to breakage, however. This royal piece of Sevres is covered with the most fanciful designs of birds, fish, reptiles known and unknown. There are some beautiful bits of color in it. It is unique, worth a large sum. I would gladly give $100 for it as it stands, though broken in fifty pieces. A man took it down from a shelf where it had stood for fifteen years and let it drop on the hearth. The repairs will cost $75. This Louis XVI. piece is thought to be genuine by the owner. It is pretty, but is only a German imitation. To repair it will cost $45. A new one may be had for about $80.

"Here is a piece of very fine porcelain, a salver, once the property of the Empress Josephine. The arms of the empire with the 'N.' and 'J.' in the centre stamps its value. Dresden ware is oftenest sent to us. On this vase we will have to replace four or five china roses. Can we make Dresden ware in New York? Well, I assure you that we shall use material in this work which cannot be distinguished from the best made in Dresden.

"This large miscellaneous lot of clocks, bronzes, silver and delf ware were taken from the debris of the Morrell storehouse fire. It is a curiously dilapidated collection, but we will be able to rescue much of it. There you see Ward's headless Indian opposite the Laocoon—the snake is missing—and a bronze mandarin is staring at the mutilated Berlin Amazon. That satyr has had his curious legs melted off, but we can easily restore them with all their pristine peculiarities.

In the lighter goods sent for repair the most elegant are fans, most of which are sent us regularly after each season. Here is a fine specimen of a fan made of thread lace and carved ivory. The fashion among ladies of carrying them dangling at their sides works very well for us. If they escape hard knocks they are certain sooner or later, to be sat upon by their owners. This superb combination of dark pearl, lace, satin and feathers, decorated by a distinguished Paris artist, was all but ruined in that way. It is worth $200. Our bill for repair will be $85.

One of the finest pieces of work we have here now, is this beautiful piece of *cloisonne* and enamel. The body of the vase is of copper, but every dividing strand you see in that exquisite tracery is of gold inlaid, and the colors are scarcely equalled by any European work old or new. It is of Chinese workmanship; not even the Japanese artist can compete in this particular style of decorative art. The sides of the vase were jammed together nearly flat though bad packing, and the golden threads were forced out so you could take them up in a bunch. Each strand has been carefully replaced and enamel restored in parts. The vase stands but about fourteen inches high, but no European artist could match it short of five years of constant labor. It would pass almost unnoticed by any one not a connoisseur.

"Ah, yes, we save many valuable works of art from destruction. If we were paid in proportion to the value of our work we would do well. As it is we earn scarcely more than the wages of skilled labour. But I must leave you now to attend court in a somewhat peculiar case growing out of business. A man has lost some valuable works of ceramic art by fire. They were insured, but the company refuses to pay the amount in full, on the ground that some of the articles were lessened in value through having been previously broken and repaired. My testimony is wanted to show that the restoration was done by us. I can give no evidence to this effect. If the goods are now lost I cannot be expected to recognized my work upon them. I could not otherwise identify the goods, for if I were to keep descriptive account of the goods sent me, my books would be too voluminous to store within the city limits. We have little time to do more than receive articles, repair them, and see that our accounts are closed with cash."—*New York Sun.*

CLEANING-RAGS.—Cloths with which metallic surfaces may easily and rapidly be cleaned, are made by steeping woollen cloths in a solution of 4 grams Castile soap and 20 g. water, adding 2 g. tripoli to the solution, and dyeing it red with fuchsine.

CHRONOLOGY OF THE TIMEPIECE.

By timepiece we understand that instrument by the aid of which we divide the day into twenty four equal parts. As well known, the ancients already possessed such contrivances, sand or water hour glasses, and sun dials, 740 years B. C., and tradition has it that the obelisks served as gnomons for the Egyptians and Phenicians; Caliph Haroun al Rachid presented Charlemagne, in 800 A. C., with a copper clock propelled by sand. History is very vague with regard to the exact date of the discovery of clocks; it is said that the wheeled timepiece was invented in the 14th century; first by Richard Wallingford, Abbot of St. Albans, England; next by Giovanni Dondi, a doctor and astronomer at Padua, and finally, by Henry von Vick, a German clockmaker, in Paris, who, at the order of Charles V., constructed the first tower clock in Paris (the square is still called Place d'Horloge). The honor of the invention of the actual watch pertains to one Peter Hehle, of Nuremberg (the first watches were call *Nuremberg eggs*), in 1500. About the same time the second Strasbourg clock* was constructed. The subsequent improvements and inventions are due to the great number of watchmakers and men of genius, and in the following we give the names of those who made essential adaptations and inventions, and earned immortal fame.

1595. Gallileo invents the pendulum, whereby the means is offered for regulating the motion of the wheel clock; his son Vincent, however, in 1649, makes the first practical attempt to adapt it to the clock.

1656. Christian Huyghens (pronounced Hoigens), a Dutchman, finally succeeds in constructing the first pendulum clock; he later constructs several marine watches, but finally invents the balance spring, by the use alone, of which a marine timepiece becomes a possibility.

1675. Barlow and Quare, London, make the first repeating movements, first for clocks, next for watches.

1680. Clement, London, invents the anchor escapement (clock).

1695. Tampion invents the dead-beat escapement, and uses it first in a watch.

1700. Fatio, of Geneva, perforates rubies, and uses them as pivot holes.

1715. Graham, London, constructs the mercury compensated pendulum, invents the cylinder escapement, and the dead-beat escapement for astronomical clocks.

1726. John Harrison, England, constructs the gridiron compensated pendulum, and in 1761, when 67 years old, the first marine watch, receiving the prize of £10,000 therefor from Parliament. (This excellent horologist died 1776, at the age of 82 years.

1754. Caron de Beaumarchais, the son of a watchmaker, invents the pin escapement for watches; but at a later date, follows his poetical inclination, and composes the Barber of Seville, Figaro's Marriage, etc.

1755. Ferdinand Berthoud, born 1727, in Canton Neuchatel, greatly promotes the interests of horology by his writings and treatises. He also constructed several, and better watches than Harrison, and died in 1807, in California, whither he had gone, at the age of 80, to observe his last clock. Ferd. Berthoud undoubtedly was one of the greatest watchmakers that ever lived. The celebrated *Abbe* Chappe, inventor of telegraphy, was his nephew.

1765. Pierre le Roy invents the compensated balance wheel, after having constructed a marine watch, for which he obtained a prize from the Academie des Sciences.

1770. Duplex, England, invents the escapement named for him, and greatly esteemed at the present day.

1772. John Arnold, also English, makes several improvements, and afterward invents the marine chronometer with dead-beat spring escapement, and approximately correct compensated balance.

1805. Urban Jurgensen, Copenhagen, constructs the first steel cylinder scape wheel, and greatly contributes to raise the art of horology by his improvements and writings. Thus, for instance, he materially improved Arnold's dead-beat chronometer escapement.

1821. Rieussac, Paris, invents the writing clock.

1828. Perrelet constructs an astronomical clock showing the hours, minutes, seconds, even 1-10 seconds. From this time forward, Breguet, Louis Berthoud, Houriet, Wagner and Perron, by dissertations and pratical improvements, gave the incentive to bring the art of horology to a high standard, and to make it commensurate with the requirements of the present age.

It would lead too far to mention the many different inventions and improvements made in this century—the Geneva musical boxes, the orchestrions of the Black Forest, the astronomical clock of Strasbourg, etc. In the line of watches, the standing seconds, the course of the moon, perpetual almanac, etc., automatically-striking hour, ¼ and ½ hour, yea, minute repeaters; again, the remontoirs, and in latest time, the chronographs, etc. If we remember that the art of horology has labored from the year 740 B. C. to the middle of the last century, without leaving its cradle of infancy, and contemplate the grandeur of the inventions of the present time, the thinking mind will be tempted to incline his head in reverence when he hears or sees the names of Graham, Harriston, Breguet, Berthoud and others.—*Jewelers' Circular.*

*Strasbourg possessed three different clocks. The first was built in the year 1352, under John von Leichtenberg, and finished in two years; the the second one was commenced in 1547, and, on account of death and other interruptions, finished in 1574; the present third clock was built by John Baptist Schwilgue in 1838, and finished in 1842. Only a few insignificant portions of the old clock were retained.

BUSINESS CHANGES FOR JULY.

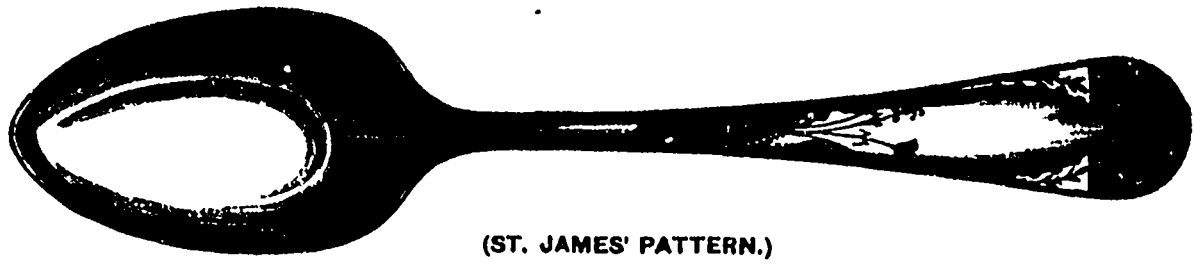
Jno. Bertram, Peterboro, hardware, has sold out to M. Miller, possession 1st July. T Crispin, Guelph, hardware & tins, removed to Woodstock; *Mitchell & Gage, Hamilton, wood*enware, &c., partnership dissolved, Thos. Mitchell continues alone; L. Atkinson, New market, jewelry stock advertised for sale by Sheriff, 8 inst. E H. Reeves, Waterford, hardware, advertises business for sale; Geo Getz, Hamilton, jeweler, dead; Ellis & Woodward, Port Rowan, hardware & tins, have dissolved, Jno. Woodward continues alone, Robb, Miller & Son, Montreal, wholesale stationery burned out; W S Anderson, Winnipeg, jeweler, given up business here; D. M. Demill, Shannonville, hardware, sold out to S. E. Mills.

BUSINESS NOTES.

In 1834 all the table cutlery used in the United States was imported from England. To-day, of an annual consumption amounting to $2,500,000 worth, not more than eight per cent. comes from England.

Messrs. C. & J. Allen, of this city, have rented half of Trout & Mitchell's drug store, in Winnipeg, and are going to open out a branch of their business there. It is to be under the personal supervison of Mr. Joseph Allen

The new Electro plated Ware Factory lately erected in this city, is now finished, and the engine and machinery are being fitted up as fast as possible. They expect to commence the

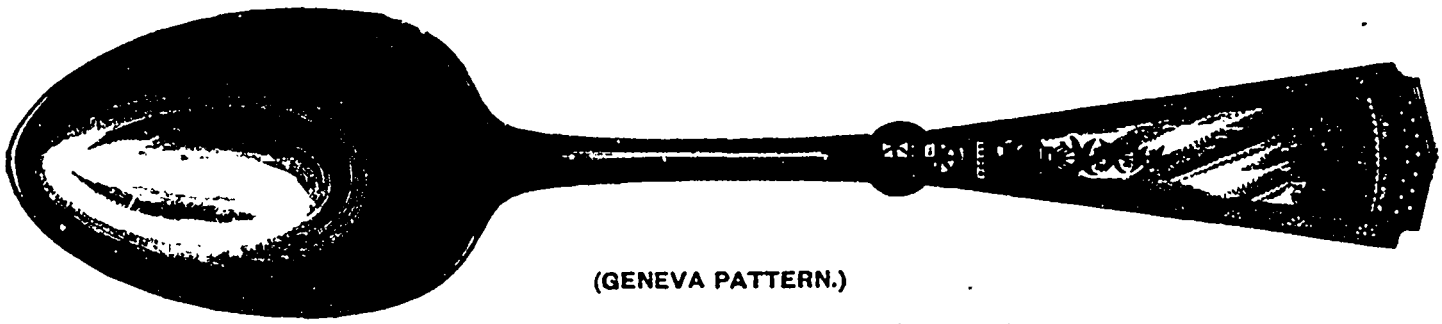


(ST. JAMES' PATTERN.)

Simpson, Hall, Miller & Co.,

Manufacturers of

FINE SILVER PLATED WARE.



(GENEVA PATTERN.)

INCLUDING THE WM. ROGERS'

SPOONS, FORKS, KNIVES, ETC.,

MADE IN

EXTRA, DOUBLE, TRIPLE; ALSO IN SECTIONAL PLATE.

Extra Plated upon all points most exposed to wear.

STAMPED "WM. ROGERS X12."

FACTORIES:

WALLINGFORD, U.S. —AND— **MONTREAL, CANADA.**

The Wm. Rogers Goods sold by us are made under the supervision of Mr. Wm. Rogers, formerl, of Hartford and West Meriden, son of the old original Wm. Rogers, who died in 1873. Please do *not* associate us with goods made in Hartford, Ct., with which we have no connection We make all the goods we sell, and have our own especial patterns.

SIMPSON, HALL, MILLER & CO.

manufacture of new goods right away, and to have a full line of samples ready for this fall's trade.

Mr. R. Y. Ellis, of the firm of P, W. Ellis & Co., Wholesale Jewelers of this city left for Europe last week on the business of the firm Mr. Ellis proposes visiting the markets of England, France and Switzerland before his return. We wish him a safe and prosperous journey.

The men, Miller and Webb who were arrested in Kingston some weeks ago for the robbery from Messrs. Lee & Chillas of this city were tried at the late assizes and found guilty. The Judge sentenced them each to three years in the Provincial Penetentiary. Serves them right say we.

The Stock of L. Atkinson, jeweler, of Newmarket was sold at Sheriff's sale at the Court House, Toronto, on the 27th inst. for the benefit of his creditors It was put up *en bloc*, and after some spirited bidding realized the exceedingly high price of sixty-three cents on the dollar, the purchasers being Messrs. E. & A. Gunther & C. & J. Allen, of Toronto.

New Hats are all the go for election bets, and as a consequence we see hundreds of them about since that event was decided. This is all right for the hatters, but could'nt the jewelry trade manage to shunt the public on to some article of jewelry instead of hats? If it could be done, it would liven trade in these idle dog days.

A Mark of Respect.—A pleasant affair took place at "The Club," Yonge Street, a few nights ago when Mr. Geo. Fitzsimmons, who is about starting business in Guelph, was entertained by his friends. He was presented with a purse of $100 and an illuminated address. Mr. Fitzsimmons carries with him to the Royal City the best wishes of a large circle of friends.

Jewelers as a rule are not rabid politicians, and seldom take very active interest in the politics of the country In the late elections an exception might have been found in the person of Mr S. T Culp, wholesale jeweler, of this city, who not only composed a campaign song in favor of John A and the N P, but but published and distributed several thousand copies of it at his own expense. In addition to this he spent two weeks stumping the Welland district on behalf of the N. P. candidate. Although untrained, Mr. Cult is an orator of no mean ability, and it is more than hinted that Mr. Osler's defeat was mainly owing to the brilliant defence of the present tariff by the Toronto jeweler. Although we do not take much stock in politics, we must congratulate Mr. Culp on his brilliant *debut* as a public orator.

Referring to our old townsman, the Sydney (N.S. W.) *Herald* says, "At the Athenæum Club, yesterday, a banquet was given to Mr. Donald Manson, representative of the Waltham Watch Company, on the occasion of his leaving *en route* to the United States, per City of New York. The chair was taken by M. Hugh George, who proposed the health of "The Queen," of "The President of the United States," and of "The Guest of the evening." The chairman expatiated on the energy, enterprise, and courtesy which has been shown by Mr. Manson during his sojourn in these colonies, and the toast of his health was drunk with enthusiasm by the company present. The chairman assured Mr. Manson that he would leave the country with the best wishes, not only of those present, but also of a large section of the people of the Australian colonies. Mr. Manson replied in appropriate terms, and the company separated after having spent a very pleasant evening.

Jewelers' Picnic.—The firm of P. W. Ellis & Co., manufacturing jewellers of this city, gave their first annual picnic last week to their employees and friends, numbering over 120, who left by the steamer McEdwards, especially chartered for the occasion, to Victoria Park, accompanied by a full string band. A most enjoyable day was spent, the committee having provided every variety of amusement, including dancing, football, cricket, croquet, and a good programme of athletic sports, to the winner of which valuable prizes were given. The football match was between the gold chain makers and jewelers on the one side, and the watchmakers, engravers, polishers, and clerks on the other, and resulted in a draw. An amusing feature of the athletic sports was a quarter mile walking race between the young lady employees of the firm. Dinner and supper had been provided for the party. After partaking of the latter the evening was spent in songs, recitations and speeches. The party returned about ten o'clock highly pleased with the day's outing.

The Employees of one of our large fancy goods and jewelery importing firms recently held a very successful rowing regatta on the bay. Much interest was manifested in the event, from the fact that a determined attack was to be made on the record, as several of the contestants had made remarkable private trials. These mysterious rumors went the round of the sporting fraternity, and on the eventful evening a large number assembled on the bay to witness the exciting struggle. A good start was obtained, and for about two hundred yards but little difference was noticeable in their relative positions. The road representatives here commenced to weaken owing so we have been informed, to over-training, and the home men commenced to forge ahead. One of these became unseated presumably from undue pressure, and it now became a question of the survival of the fittest, which in a short time was decided by the cool and collected jewelry manager crossing the line with a good three lengths to his credit. It is needless for any comment as to time. The record at the close of the season will plainly show what has been accomplished.

WORKSHOP NOTES.

Another alloy consists of copper and nickel and evinces far more powers of resistance than the ordinary alloy of brass and copper; it is gradually being introduced into the manufacture articles of commerce

Stamping Color.—A color that dries slowly upon the color pad, yet is quickly absorbed by the paper is preferred, of 16 parts firm aniline color (blue, violet, red, etc.), 7 glycerine, 3 syrup, and 80 distilled water. The aniline color is dissolved in the hot water, and the other parts are added. while stirring.

New Alloy.—The *Revue Chronom*, publishes a recipe of an English alloy, remarkable for its conducting, malleable, and permanent properties. An analysis by Mr. Philipps proved it to be composed of, platinum, 80,000; iridium, 19,079; rhodium, 0,122; iron, 0.093; ruthenium, 0.046 parts—100,005 parts.

Origin of Diamond.—Mr. J. A. Roord Smith publishes in the *Archives Neerlandaises des Sciences exactes*, a treatise on the diamond mines of South Africa. He states that the diamond is found in a primitive gangue of a volcanic origin; the presence of a bicarbonaceous silicate of lime is a charactaristic sign of these mines, and deems them to be extinct craters of volcanoes. His hypothesis is that the diamond is of volcanic origin, and formed by the assistance of organic matter under the influence of great pressure and a high temperature. The late artificial production of diamonds appears to favor this view.

It has been found that by an addition of from 1 to 13 per cent of phosphorus to bronze, a very desirable alloy is produced, different in appearance and properties from the common bronze. It assumes an extra degree of hardness, which permits it to be employed with an advantage in the mechanical arts. Many parts of machinery bearings, knobs, drawers, slides, etc., exposed to great wear and tear, may be manufactured therefrom.

Etching upon Metals.—Cover the surface of the metal on which you desire to etch, with white melted wax, when cold, trace the design or character upon it with a sharp point, which penetrates through the wax layer. Into these lines pour either, very strong vinegar or pure acetic acid, and spread upon it a powder made of 100 grams rock alum, and the same weight of sulphate of copper, previously calcined in a crucible in the fire. To have the engraving deeper, as soon as the effect of the first mordant is spent, wash the wax in cold water, without rubbing, however, let it dry and repeat the operation By renewing it as often as necessary, the workman has it in his power to regulate the depth of the engraving according to his liking.

To Make Mock Coral.—Two sticks red sealing wax, ½ oz. white bee's wax; melt all in a tin cup, then have some some small brambles, clean off the bark well, washed in turpentine While wax is hot plunge in In drawing out put in cold water. This coral can be fashioned to any design, and is of a deep scarlet color, and is used for ear rings and breast pins. If too brittle add a little more bee's wax.

To Make Mock Diamonds.—Take half lb. crystalized alumn, dissolve in boiling water, when thoroughly dissolved, add small piece of gum arabic and get fine sieve in pan and with one get cold water If any of the above crystals are larger than what is requisite for medium subles, you can dissolve to change the color, to burned amber or burned cochineal For soppires they have a pretty effect and if arranged in clusters or single settings, with pass light will almost defy an expert to locate their value

WE BEG TO CALL THE ATTENTION OF THE TRADE to the well known quality and elegance of finish of our Gold Cases, guaranteed by us to be of eighteen karat Gold, U. S Mint assay, or of fourteen karat Gold, as may be stamped, and also to our mode of selling the same, charging only for the ACTUAL WEIGHT *of the gold used, and not for the base metal comprised in springs, key pipes, filling of crown, etc. To illustrate which we here show copy of tag accompanying each one of our Gold Cases, which plainly indicates not only the gross weight of the Case, but also the* NET *weight of the gold.*

AMERICAN WATCH COMPANY,

ROBBINS & APPLETON,

New York, August 1st, 1881. General Agents.

IN EXPLANATION OF THE ABOVE we desire to say that the old plan of charging for the gross weight of the case, as if it were all gold, worked well enough as long as the manufacturers were content with the amount of brass and steel actually required in its construction; but when the business was degraded into a contest as to who should get the most base metal into the least quantity of gold and call it a GOLD case, then the time came when, in the interest of dealers in American Watches, it became necessary to adopt a plan of selling, showing the buyer exactly how much GOLD each Case contained.

In adopting this method we act in conformity with the earnest wishes of the leading houses of the Trade, some of whom have already undertaken to carry out the same idea in their own business.

ROBBINS & APPLETON,

GENERAL AGENTS.

SCIENCE NOTES.

An apparatus for the determination of melting points has been described by Mr. C. F. Cross and Mr. E. J. Bevan. It consists of a small platform of thin ferrotype iron or silver, having an opening for the reception of a thermometer bulb, and a small indentation or depression. A very small quantity of the substance is melted in the little depression, and while still liquid, a thin platinum wire, bent like an L and fused in a glass float, is immersed in the liquid and held there until the substance solidifies. A thermometer is then inserted in the opening and the whole apparatus plunged under mercury, which is gently heated, and the thermometer meanwhile is carefully watched. When the substance melts, the float rises instantly, and the temperature is noted.

One of the chief defects in the arc electric light is the slight unsteadiness arising from imperfect regulation of the carbons. M. Saligmac, one of the most active electricians of Paris, has discovered a new regulator which was to be one of the curiosities of the *grande soiree* to be given at the Observatoire on March 18. Each of the two carbons is supplied with a parallel rod of glass, to which it is attached in a solid manner. These two rods being placed horizontally, are pushed by a spring, and the spark is lighted between them. But between the two glass rods there is a glass stopper which is warmed by the light in such proportion that the rods yield gradually to the pressure of the springs, and the carbons can approach each other, as is required for the constancy of illumination. A correspondent of *Nature*, who witnesed some preliminary experiments, states that they were a wonderful success.

The Professor and the Inventor.—The following is a good story about a well-known professor, which may go to prove that even great physicists are liable to error.—The professor was showing a party of ladies and gentlemen over some large works at Birmingham, chiefly engaged in the manufacture of complicated optical instruments. The party came across a very ingenious instrument, the working of which the professor proceeded to explain. In the midst of his exposition, a roughly-dressed young man, standing near, struck in, and civilly pointed out that the man of science was quite mistaken in his notions as to the instrument in point. The professor, whose weak point is not an excess of humility, angrily maintained his own view, but did not succeed in convincing his opponent, who finally shrugged his shoulders and walked off. "Who is that—that *person?*" asked the professor, indignantly, of a workman standing by. "Oh! that is Dr. ——," was the reply; "he invented that instrument you have been looking at!" *Tableau.—Quiz.*

Sir W. Thomson showed in his inaugural address last year to the British Association, that if it were desired to transmit 26,250 horse-power by a copper wire half an inch in diameter, from Niagara to New York, which is about 300 miles distance, and not to lose more than one-fifth of the whole amount of work—that is, to deliver up in New York, 21,000 horse power—the electromotive force between the two wires must be 80,000 volts. Now, what, asks Professor Ayrton, is to be done with this enormous electromotive force at New York end of the wires. The solution of this problem, he says, was also given by Sir W. Thomson on the same occasion, and it consists in using large numbers of accumulators. All that is necessary to do in order to subdivide the enormous electromotive into what *may be called small commercial electromotive* forces, is to keep a Faure battery of 40,000 cells always charged direct from the main current, and to apply a methodical system of removing sets of fifty, and placing them on the town supply circuits while other sets of fifty are being regularly introduced into the main circuit that is being charged. Of course, this removal does not mean bodily removal of the cells, but merely disconnecting the wires. It is probable that this employment of secondary batteries will be of great importance, since it overcomes the last difficulty in the economical electrical transmission of power over long distances.

Mechanical Music.—The Black Forest is famous for these mechanical organs—orchestrions, as they are called—and in some instances they are brought to great perfection. There is a shop close to the exhibition, bearing the name of Lamy Sohne, full of clocks and singing birds and orchestrions, where you may pass half an hour in a fairyland of surprises and all kinds of mechanical music. One morning I went in with an old lady and gentleman—the latter a grave dignitary of the Church of England. "A very tiring place," said the old lady; "all up and down hill; the only fault I find with the Black Forest. Couldn't they level it my dear?"—to her husband—"or build viaducts or something? Or *at the very least, couldn't they organize pony* chaises all over the country—like those, you know, that we found so useful at Bournemouth last year?" "Take a chair, my love," said the old gentleman, without committing himself to an opinion. And he placed one for her, while the young man in the shop (whose jolly, good natured face and broad grin delighted one to behold) wound up the orchestrion. The old lady sat down somewhat heavily from sheer exhaustion, and immediately the chair struck up the lively air of "the Watch on the Rhine," with a decidely martial influence upon its occupant. She sprang from her seat as if it had been a gridiron, and asked her husband reproachfully if he was amusing himself at her expense, and whether her age was not sufficient to secure her fram practical jocking. "Dear me!" cried he, in amazement, looking at the offending chair as though he expected it to walk of its own accord. "What a musical nation these Black Forestors are! It's music everywhere! The very chairs you sit down upon are full of it." At this moment the orchestrion struck up a selection from "Don Giovanni," and the old lady recoveredher amiability in listening to a really splendid instrument. I left them still enjoying it, marveling at alll the birds and boxes, and thinking each one more wondeful than another.